

74. PSYCHOTRIA Linnaeus, Syst. Nat., ed. 10, 2: 906, 929, 1364. 1759, nom. cons.

九节属 *jiu jie shu*

Chen Tao (陈涛); Charlotte M. Taylor

Cephaelis Swartz.

Shrubs, small trees, or rarely vines twining and/or climbing by adventitious roots (*Psychotria serpens*), [infrequently dioecious or polygamo-dioecious], unarmed, tissues and/or pubescence often drying dark gray or dark reddish brown. Raphides present. Leaves opposite or rarely in whorls of 3 or 4, often with foveolate and/or pubescent domatia; stipules caducous or infrequently persistent, interpetiolar or sometimes shortly united around stem, entire or 2-lobed, rarely with lobe glandular, inside (i.e., adaxially) at base with well-developed colleters, these usually persistent after stipule falls, usually drying red-brown. Inflorescences terminal often becoming displaced to pseudoaxillary or rarely axillary, cymose, corymbose, paniculiform, glomerulate, or capitate, several to many flowered, sessile to pedunculate, bracteate with bracts sometimes reduced or sometimes enlarged or involucrate. Flowers sessile to pedicellate, bisexual, usually distylous [or infrequently unisexual]. Calyx limb (4 or)5(or 6)-lobed. Corolla white, yellow, or flushed with pink, funnelliform to tubular, inside glabrous or variously pubescent, lobes (4 or)5(or 6), valvate in bud, sometimes abaxially with thickenings or horns near apex. Stamens (4 or)5(or 6), inserted in corolla tube or throat, usually included or partially exerted in long-styled flowers and exerted in short-styled flowers; filaments short to developed; anthers dorsifixed near base. Ovary 2-celled, ovules 1 in each cell, basal; stigmas 2, linear to subcapitate, usually exerted in long-styled flowers and included in short-styled flowers. Fruit red, orange, or infrequently white (*P. serpens*), purple (*P. manillensis*), or black (*P. cephalophora*, *P. straminea*), drupaceous, fleshy, ellipsoid, ovoid, or subglobose, with calyx limb persistent or infrequently deciduous, with pedicels or stipitate base sometimes elongating; pyrenes 2, 1-celled, each with 1 seed, plano-convex, bony, on dorsal (i.e., abaxial) surface smooth or longitudinally ridged, on ventral surface smooth or longitudinally sulcate; seeds medium-sized, ellipsoid to plano-convex, with testa thin; endosperm fleshy or corneous, sometimes ruminant; embryo small, basal; cotyledon flat.

About 800–1500 species: tropical and subtropical Africa, America, Asia, Madagascar, and Pacific islands; 18 species (five endemic) in China.

The genus *Cephaelis* was separated from *Psychotria* by numerous authors in the 19th and first part of the 20th centuries, based on inflorescence form: *Cephaelis* included species with capitate inflorescences with enlarged, often involucre bracts, vs. branched inflorescences with smaller bracts in *Psychotria*. However, it is now clear that this inflorescence arrangement has arisen far more than once within this group and that “*Cephaelis*” actually included a polyphyletic set of species that are more closely related to various other species of *Psychotria* than to each other. Consequently, recent authors (e.g., Steyermark, Mem. New York Bot. Gard. 23: 443–717. 1972; Taylor, Opera Bot. Belg. 7: 261–270. 1996) have formally synonymized *Cephaelis* with *Psychotria*.

A recent treatment of *Psychotria* in the Philippines (Sohmer & Davis, Sida, Bot. Misc. 27: 1–247. 2007) does not consider any species or names outside its study area but includes some Chinese species that occur in that region. However, these authors have a partially different species concept and morphological interpretation of inflorescence characters from C. M. Taylor, so their work is not completely comparable to the treatment here.

- 1a. Climbing or creeping vines or lianas with adventitious roots, often on tree trunks or rocks; fruit white 14. *P. serpens*
- 1b. Erect, self-supporting subshrubs, shrubs, and small trees growing on ground; fruit orange or red.
 - 2a. Leaves strigose to hirsute in similar density on both sides; stipules 15–25 mm, deeply bilobed 12. *P. pilifera*
 - 2b. Leaves glabrous adaxially, or pubescent adaxially with distinctly different pubescence than on abaxial surface; stipules 1.5–20 mm, entire to bilobed.
 - 3a. Inflorescences capitate, pedunculate, and enclosed by a cupuliform involucre formed of fused bracts 9. *P. laui*
 - 3b. Inflorescences capitate to branched, sessile to pedunculate, and variously bracteate, bracts when present free and not forming a single involucre.
 - 4a. Calyx limb 1.3–3 mm, shallowly to deeply lobed.
 - 5a. Inflorescences thyriform to paniculate, branched to 2 or 3 orders and with well-developed secondary axes 18. *P. yunnanensis*
 - 5b. Inflorescences capitate, subcapitate, or congested-cymose, unbranched or branched to 1 or 2 orders but without well-developed secondary axes.
 - 6a. Inflorescences capitate to densely congested-cymose, subglobose in outline, sessile or with peduncle to 1 cm 13. *P. prainii*
 - 6b. Inflorescences capitate, subcapitate, or shortly congested-cymose, ellipsoid to ovoid or pyramidal in outline, sessile to pedunculate with peduncles to 6 cm.
 - 7a. Subshrubs, often rhizomatous; leaves with well-developed, generally straight submarginal vein extending along most or all of length of blade 2. *P. calocarpa*
 - 7b. Shrubs or small trees; leaves without submarginal vein or with submarginal vein incomplete or only weakly developed, extending for up to 1/2–2/3 of length

- of blade.
- 8a. Inflorescences sessile or with peduncle up to 0.6 cm; stipules 3–12 mm; Hainan 7. *P. hainanensis*
- 8b. Inflorescences pedunculate, peduncle 0.5–6 cm; stipules 8–20 mm; Yunnan 11. *P. morindoides*
- 4b. Calyx limb 0.5–1.2 mm, truncate to deeply lobed.
- 9a. Inflorescences capitate to subcapitate or congested-cymose, unbranched or branched but without well-developed secondary axes, or with secondary axes but then primary axis not developed.
- 10a. Flowers subsessile to pedicellate in a single head, with all flowers arising from one axis 3. *P. cephalophora*
- 10b. Flowers variously sessile to pedicellate in a subcapitate head or congested cyme, flowers arising from more than one point or axis 8. *P. henryi*
- 9b. Inflorescences thyriform, paniculate, corymbiform, or congested-cymose to laxly cymose, branched, with both primary and secondary axes developed.
- 11a. Stipules 10–15 mm with at least some of them more than 10 mm; leaves with secondary veins 12–18 pairs with 13 or more pairs on at least some leaves 4. *P. densa*
- 11b. Stipules 1.5–12 mm with at least some less than 10 mm; leaves with secondary veins 4–12 pairs with less than 12 pairs on at least some leaves.
- 12a. Inflorescences pyramidal, with primary axis developed and longer than secondary axes 16. *P. symplocifolia*
- 12b. Inflorescences rounded-corymbiform to broadly pyramidal, with primary axis reduced to developed but not longer than secondary axes.
- 13a. Stipules fused around stem into a distinct sheath, mostly persistent with leaves; leaves with secondary veins prominulous adaxially 15. *P. straminea*
- 13b. Stipules interpetiolar, caducous or deciduous, falling before some of leaves; leaves with secondary veins flat or thinly impressed adaxially.
- 14a. Leaves narrowly elliptic, narrowly elliptic-oblong, narrowly lanceolate, narrowly lanceolate-oblong, or oblanceolate, 4–15 × 1–4.5 cm; stipules at least shortly 2-lobed.
- 15a. Leaves abaxially with distinctive thickened epidermis often mottled when dry, secondary veins covered by epidermis or visible but flat to only slightly thickened 6. *P. fluviatilis*
- 15b. Leaves abaxially with epidermis “normal,” thin and not mottled when dry, secondary veins visible, with different epidermal texture from lamina, flat to prominulous.
- 16a. Plants usually drying dull green, grayish brown, yellowish green, or reddish brown; inflorescences congested-cymose 8. *P. henryi*
- 16b. Plants usually drying reddish brown to dark brown; inflorescences laxly cymose, corymbiform 17. *P. tutcheri*
- 14b. Leaves elliptic, broadly elliptic, broadly elliptic-oblong, ovate, lanceolate-oblong, or obovate, 5–23.5 × 2–9 cm; stipules entire to 2-lobed.
- 17a. Bracts subtending flowers rather well developed, lanceolate to ligulate or triangular, 1.5–3 mm; stipules 2-lobed 5. *P. erratica*
- 17b. Bracts subtending flowers developed to reduced, triangular, 0.2–1.2 mm; stipules obtuse, acute, rounded, or shallowly emarginate.
- 18a. Inflorescences sessile or with peduncle to 0.3 cm; leaves with secondary veins not or only weakly forming a submarginal vein 1. *P. asiatica*
- 18b. Inflorescences pedunculate, peduncles 0.1–3.5 cm; leaves with secondary veins free or usually forming a weak to well-developed, looping submarginal vein 10. *P. manillensis*

1. *Psychotria asiatica* Linnaeus, Syst. Nat., ed. 10, 2: 929. 1759.

九节 jiu jie

Antherura rubra Loureiro; *Psychotria esquirolii* H. Léveillé; *P. reevesii* Wallich; *P. reevesii* var. *pilosa* Pitard; *P. rubra* (Loureiro) Poiret; *P. rubra* var. *pilosa* (Pitard) W. C.

Chen; *Uragoga rubra* (Loureiro) Kuntze.

Shrubs or small trees, 0.5–5 m tall; stems puberulent to glabrous. Petiole 0.7–5 cm, glabrous or rarely puberulent; leaf blade reportedly rather shiny in life, drying papery to leathery, dark red, brownish red, yellowish green, or gray-green, elliptic-oblong, lanceolate-oblong, or rarely oblong-ovate, 5–23.5 × 2–9 cm, adaxially glabrous, abaxially glabrous or puberulent, base

acute to obtuse, margins flat to narrowly revolute, apex acute to acuminate or obtuse then abruptly narrowed and acuminate; secondary veins 5–8(–11) pairs, free or weakly forming a broadly looping, incomplete submarginal vein, usually with foveolate and sometimes pilosulous domatia; stipules caducous or sometimes persisting on 2 or 3 nodes, triangular to broadly triangular or broadly ligulate, interpetiolar or shortly united around stem, [3–]6–8 mm, glabrous to puberulent, broadly rounded to obtuse or shallowly emarginate. Inflorescences terminal or sometimes pseudoaxillary, cymose to paniculiform, many flowered, glabrous or usually densely puberulent, sessile and apparently tripartite to shortly pedunculate; peduncle to 0.3 mm; branched portion corymbiform-rounded to broadly pyramidal, 2–10 × 3–5 cm, with 1–3 pairs of developed secondary axes; bracts triangular, 0.2–1 mm; pedicels to 2.5 mm. Flowers subsessile to pedicellate in dichotomous cymes of 3–5. Calyx densely puberulent; hypanthium portion turbinate, 0.8–1.2 mm; limb 0.8–1 mm, subtruncate to denticulate. Corolla white, funnelform, glabrous outside; tube 2–3 mm, in throat white villous; lobes triangular, 2–2.5 mm. Drupes red, subglobose to broadly ellipsoid, 5–8 × 4–7 mm, with pedicels to 10 mm; pyrenes shallowly 3–5-ribbed. Fl. and fr. year-round.

Thickets or forests in ravines, on hill slopes, or at village margins; near sea level to 1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Taiwan, Yunnan, Zhejiang, also cultivated in Zhejiang [Cambodia, India, Japan, Laos (commonly collected), Malaysia, Thailand, Vietnam (very commonly collected)].

This species has long been called *Psychotria rubra* in China and *P. reevesii* in Vietnam. However, recently Davis et al. (Bot. J. Linn. Soc. 135: 34–52. 2001) matched the Chinese plants to the type specimen of *P. asiatica*, which is thus the correct name for these plants. The objective of their work was limited, however, and they did not address the whole circumscription and range of this species, nor the identity of *P. rubra*. The Chinese specimens treated under this name here closely match the specimens included by them in *P. asiatica*, and the range of this species is here accordingly expanded to include this range. As noted by Davis et al. (loc. cit.), all the flowers seen have the anthers exerted and the stigmas included and positioned near the middle of the corolla tube, thus resembling the short-styled form of distylous species of *Psychotria*.

2. *Psychotria calocarpa* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 41: 315. 1872.

美果九节木 *mei guo jiu jie mu*

Subshrubs, 0.25–1 m tall, often rhizomatous; stems pilosulous to glabrous. Petiole 0.5–4 cm, glabrous or brown pilosulous; leaf blade drying papery, brownish red, gray, or dark green, elliptic-oblong, elliptic, obovate-oblong, or elliptic-lanceolate, 9.5–17 × 2.5–7 cm, glabrous on both surfaces or densely puberulent to hirtellous abaxially, base cuneate to acute, margins flat, apex acute, acuminate, or rarely obtuse; secondary veins 9–15 pairs, forming a generally straight submarginal vein, without domatia; stipules caducous, ovate to suborbicular, interpetiolar, basal portion 4–10 mm, glabrous or puberulent to hirtellous, 2-lobed, lobes narrowly triangular, 2–6 mm, acuminate to subulate. Inflorescences terminal or pseudoaxillary, congested-cymose, several to many flowered, hirtellous; peduncle

0.8–2 cm; branched portion corymbiform to subglobose, 1–3 × 2–4 cm, branched to 1 or weakly 2 orders; bracts lanceolate to narrowly triangular, 0.8–5 mm; pedicels 1–6 mm. Flowers pedicellate. Calyx glabrous to puberulent; limb ca. 2 mm, deeply lobed; lobes linear to linear-lanceolate, entire to ciliolate. Corolla white; tube ca. 2 mm, white villous inside; lobes elliptic-oblong, obtuse. Drupes red or orange, ellipsoid, 7–8.5 × 4.5–6 mm; pyrenes with 4 or 5 low ridges. Fl. May–Jul, fr. Aug–Feb of following year.

Forests on mountain slopes; 800–1700 m. Xizang, Yunnan [Bangladesh, Bhutan, India, Malaysia, Myanmar, Nepal, Thailand, Vietnam].

This species is used medicinally.

W. C. Chen (in FRPS 71(2): 51. 1999) described the calyx lobes as 4, but they are 5 on all the specimens studied.

3. *Psychotria cephalophora* Merrill, Philipp. J. Sci., C, 3: 438. 1909.

兰屿九节木 *lan yu jiu jie mu*

Psychotria kotoensis Hayata.

Shrubs or small trees, height not noted; stems glabrous. Petiole 1.2–6 cm, glabrous; leaf blade drying papery, pale reddish brown, dark brown, or green sometimes tinged with red-purple, elliptic, elliptic-oblong, or elliptic-ovate, 10–16 × 3.5–7 cm, glabrous on both surfaces, base cuneate to acute, margins flat, apex acute or acuminate; secondary veins 6–12 pairs, free or forming a weak submarginal vein, without domatia; stipules caducous, ovate, interpetiolar or shortly fused around stem, 7–10 mm, glabrous, ciliate, 2-lobed for ca. 1/5 of length, lobes ligulate to triangular. Inflorescences terminal, subcapitate to congested-cymose, several flowered, subsessile to sessile, glabrous to densely hirtellous; bracts triangular to ligulate, 1–3 mm; pedicels to 2 mm. Flowers subsessile to pedicellate. Calyx glabrous; hypanthium portion turbinate, ca. 1 mm; limb ca. 1 mm, lobed for 1/3–1/2; lobes deltoid to narrowly triangular. Corolla in bud white, funnelform, glabrous outside; tube ca. 1.5 mm, villous inside; lobes triangular-oblong, ca. 1.5 mm. Drupes becoming red then black, ellipsoid to obovoid, 8–10 × 6–8 mm, with pedicels to 7 mm; pyrenes smooth or very shallowly 3- or 4-ribbed. Fl. Apr, fr. Aug.

Broad-leaved forests; below 100–400 m. Taiwan (Lan Yu) [Philippines].

The stipules of these plants have been described by previous authors as acute to obtuse, but these are bilobed on all the specimens studied, although this is difficult to see in many cases because the lobes are usually imbricate in bud.

This name is here provisionally applied to these plants. Sohmer and Davis (Sida, Bot. Misc. 27: 60–63. 2007) excluded the Taiwanese plants from their circumscription of *Psychotria cephalophora*, without providing another name for them (presumably *P. kotoensis* would be available) or delimiting the differences between the two. They noted that the endosperm of *P. cephalophora* is ruminant although the pyrenes are smooth on the outer surface; the Taiwanese specimens studied do appear to have ruminant endosperm.

4. *Psychotria densa* W. C. Chen, Acta Phytotax. Sin. 30: 270.

1992.

密脉九节 mi mai jiu jie

Shrubs, 1–3 m tall; stems densely dark hirtellous to tomentulose. Petiole 1.5–7.5 cm, densely hirtellous; leaf blade drying papery or thinly leathery, dark brownish gray or greenish gray, elliptic, elliptic-oblong, or oblong-ob lanceolate, 10–26 × 4–12.5 cm, glabrous adaxially, hirtellous abaxially with pubescence denser along principal veins, base cuneate to obtuse, margins flat, apex acute or shortly acuminate; secondary veins 12–18 pairs, forming a weak to distinct submarginal vein, without domatia; stipules caducous, broadly triangular to triangular-ovate, interpetiolar, 10–15 mm, densely hirtellous to tomentulose, acute to acuminate or bilobed for 1/10–1/3, lobes ligulate to deltoid, rounded to acute or acuminate. Inflorescences terminal, congested-cymose to thyriform, many flowered, densely hirtellous to tomentulose, pedunculate; peduncle 1–3 cm; branched portion pyramidal to rounded, 3–7 × 2.5–7.5 cm; bracts triangular to ovate, 1–4 mm, often glabrescent. Flowers sessile or subsessile. Calyx glabrous; hypanthium portion obconic, ca. 2 mm; limb 0.5–1.2 mm, lobed for ca. 1/2; lobes triangular. Corolla presumably white, tubular, glabrous outside; tube ca. 4 mm, in throat white villous; lobes triangular-oblong, ca. 2 mm. Drupes red, ellipsoid, 8–10 × 5–6 mm; pyrenes 3- or 4-ribbed. Fl. Apr–May, fr. Jun–Jan of following year.

- Forests on mountains; 1200–1700 m. Yunnan (Hekou, Pingbian).

This name was validly published as cited above; the same article was republished later in the same journal in the same year, with this species treated on pp. 484–486. The later treatment is sometimes cited as the place of publication but is superfluous. The protologue described the stipules as “acuminate” and this was illustrated in the figure, but a paratype (*X. Q. Liu 100347*, MO!) has shortly bilobed stipules.

5. *Psychotria erratica* J. D. Hooker, Fl. Brit. India 3: 168. 1880.

西藏九节 xi zang jiu jie

Shrubs, 0.4–1 m tall; stems glabrous. Petiole 0.5–5 cm, glabrous to puberulent; leaf blade drying papery to stiffly papery, dark green, greenish brown, or reddish brown, elliptic, broadly elliptic, or obovate, 7–17 × 2–8 cm, glabrous adaxially, glabrous to densely puberulent abaxially, base acute to cuneate, margins flat, apex acute to acuminate; secondary veins 9–12 pairs, not forming a submarginal vein, without domatia; stipules caducous, oblong-lanceolate to broadly ovate, interpetiolar, 5–12 mm, puberulent, strigillose, or hirtellous, 2-lobed for 1/4–1/2, lobes triangular to narrowly triangular sometimes with linear tip 2–9 mm, sometimes erose and glandular. Inflorescences terminal or pseudoaxillary, cymose, sessile to pedunculate, puberulent to densely hirtellous with pubescence sometimes in lines; peduncle to 6.5 cm; branched portion corymbiform, 2.5–4.5 × 4–6 cm, with 1 or 2 pairs of developed secondary axes; bracts ligulate, lanceolate, or narrowly triangular, 0.5–3 mm, sometimes 2-lobed, those subtending flowers 1.5–3 mm; pedicels to 1.5 mm. Flowers subsessile to pedicellate in dichasial cymes of 3–11. Calyx glabrous to puberulent; hypanthium portion obconic, 0.8–1.2 mm; limb 0.8–1.2 mm, lobed for 1/4–

1/2; lobes triangular to broadly triangular. Corolla white to pale green, tubular to tubular-funnelform, outside glabrous; tube 3.5–4 mm, densely villous in throat; lobes triangular, ca. 2.5 mm, thickened at apex. Drupes red or yellow, ellipsoid to obovoid, 6–8 × 5–6 mm, with pedicels to 5 mm; pyrenes shallowly 3- or 4-ribbed. Fl. Apr–May, fr. Aug, Oct–Nov.

Subtropical evergreen broad-leaved forests on mountains; 1000–2400 m. Xizang (Médog), Yunnan [Bhutan, India, Nepal].

This species, as represented by Indian specimens and circumscribed here, is quite variable in leaf size and shape, degree of stipule lobing, and inflorescence form (in particular peduncle development).

6. *Psychotria fluviatilis* Chun ex W. C. Chen, Acta Phytotax. Sin. 30: 268. 1992.

溪边九节 xi bian jiu jie

Shrubs, 0.4–3 m tall; stems glabrous. Petiole 0.5–1.8 cm, glabrous; leaf blade drying papery to thinly leathery, grayish olive-green, yellowish green, or occasionally dark brown (*Zhang Guicai 488*, MO!), sometimes paler below, oblanceolate, narrowly elliptic, or narrowly elliptic-oblong, 5–11 × 1–3.7 cm, glabrous, abaxially with silvery or mottled thickened epidermis, base acute to cuneate, margins flat, apex deltoid, acute, or acuminate; secondary veins 4–8 pairs, not forming a submarginal vein, without domatia; stipules caducous, lanceolate or triangular, interpetiolar, 4–7 × 2.5–5.5 mm, glabrous, 2-lobed for 1/10–1/4, lobes narrowly triangular to linear, sometimes gland-tipped. Inflorescences terminal or often to pseudoaxillary, cymose-paniculiform, few to several flowered, glabrous, sessile to pedunculate; peduncle to 0.7 cm; branched portion corymbiform or broadly pyramidal, 1–3 × 1–1.5 cm, with 1 or 2 pairs of developed secondary axes; bracts triangular to linear-lanceolate, 0.5–1.5 mm; pedicels to 2 mm. Flowers subsessile and pedicellate in small dichotomous cymes. Calyx glabrous; hypanthium portion obconic, 1–1.5 mm; limb 0.5–1 mm, lobed shallowly or for up to 1/5; lobes broadly triangular. Corolla white, tubular, glabrous outside; tube 3–3.5 mm, in throat white villous; lobes triangular-oblong, 1–1.7 mm. Drupes red, oblong-ellipsoid or subglobose, 6–7 × 3–6 mm, with pedicels to 10 mm; pyrenes shallowly 3- or 4-ribbed. Fl. Apr–Sep, fr. Aug–Dec.

- Forests along valley streams; 500–1000 m. Guangdong, Guangxi.

This name was validly published as cited above; the same article was republished later in the same journal in the same year, with this species treated on pp. 482–483. The later treatment is sometimes cited as the place of publication but is superfluous.

7. *Psychotria hainanensis* H. L. Li, J. Arnold Arbor. 25: 213. 1944.

海南九节 hai nan jiu jie

Shrubs, 0.5–3 m tall; stems glabrous. Petiole 0.4–3.5 cm, glabrous; leaf blade drying papery, grayish brown, grayish green, abaxially paler to silvery, elliptic, oblong-elliptic, lanceolate, or lanceolate-oblong, 4.5–16 × 2–6 cm, glabrous on both surfaces or puberulent abaxially, base acute to cuneate, margins

flat, apex acute to acuminate; secondary veins 6–14 pairs, forming a rather straight submarginal vein, without domatia; stipules caducous, subtriangular to ovate, interpetiolar, 3–12 mm, glabrous to puberulent, 2-lobed for 1/3–1/2, lobes linear-lanceolate to subulate. Inflorescences terminal, congested-cymose to subcapitate, few flowered, puberulent to glabrous, subsessile to pedunculate; peduncle to 0.6 cm; branched portion subglobose, ca. 2 × 2 cm, without developed axes; bracts linear-lanceolate, 2–7 mm; pedicels 0.5–4 mm. Flowers subsessile to shortly pedicellate. Calyx glabrous; hypanthium portion turbinate, ca. 1 mm; limb 2–3 mm, deeply lobed; lobes linear-lanceolate to narrowly ligulate. Corolla white, glabrous outside; tube ca. 4 mm, white villous in throat; lobes oblong-triangular, 1.5–2 mm, apex incurved. Drupes red, ovoid or elliptic, 7–11 × 4.5–7 mm, with pedicels to 8 mm; pyrenes 3- or 5-ribbed. Fl. Apr–May, fr. Jun–Feb of following year.

- Forests along valley streams; 600–1200 m. Hainan.

In the protologue the stipules were incorrectly described as “*apice longe acuminatis*.” In fact, it is the individual lobes that are long acuminate, while the stipules are deeply bilobed.

8. *Psychotria henryi* H. Léveillé, Repert. Spec. Nov. Regni Veg. 13: 179. 1914.

滇南九节 dian nan jiu jie

Shrubs, 0.75–2 m tall; stems puberulent. Petiole 0.4–2 cm, puberulent; leaf blade drying papery, reddish brown, grayish brown, yellowish green, or greenish brown, often paler abaxially, narrowly elliptic or narrowly oblong-lanceolate, 4–14 × 1–4.5 cm, glabrous adaxially, puberulent to glabrous abaxially, base acute to cuneate, margins flat, apex acute to acuminate; secondary veins 6–10 pairs, free or forming a weak looping submarginal vein, without domatia; stipules caducous, ovate to triangular, interpetiolar, 1.5–4 mm, puberulent, 2-lobed for 1/5–1/2, lobes linear-lanceolate to subulate. Inflorescences terminal or pseudoaxillary, subcapitate to congested-cymose, few to several flowered, puberulent to glabrous, sessile to shortly pedunculate; peduncle to 0.5 cm; branched portion subglobose to corymbiform, 0.5–1.5 × 0.6–1.5 cm; bracts triangular, 1–1.5 mm; pedicels to 1 mm. Flowers subsessile to pedicellate. Calyx puberulent; hypanthium portion turbinate, ca. 1 mm; limb 0.8–1.2 mm, shallowly to deeply lobed; lobes triangular to narrowly triangular. Corolla white, funnellform, glabrous outside; tube 1.5–2 mm, densely villous in throat; lobes triangular, 1.2–1.5 mm. Infructescences sometimes expanding, to 2 × 3.5 cm; pedicels to 2 mm. Drupes red, ovoid or globose, 4–7 × 3–5 mm; pyrenes shallowly 3- or 4-ribbed. Fl. May–Jun, fr. Aug–Feb of following year.

- Forests; 1100–1500 m. Yunnan [Vietnam].

9. *Psychotria laui* Merrill & F. P. Metcalf, Lingnan Sci. J. 16: 403. 1937.

头九节 tou jiu jie

Cephaelis laui (Merrill & F. P. Metcalf) F. C. How & W. C. Ko.

Shrubs, 1–2 m tall; stems glabrous. Petiole 0.3–0.6 cm,

glabrous; leaf blade drying papery, reddish brown, elliptic, elliptic-oblong, or lanceolate, 5–11 × 1.5–3.5 cm, glabrous on both surfaces, base acute to cuneate, margins flat or weakly crisped, apex acute to shortly acuminate; secondary veins 6–8 pairs, not forming a submarginal vein, without domatia; stipules caducous, triangular, interpetiolar or shortly united around stem, 2–5 mm, glabrous, acute. Inflorescences terminal, capitate, glabrous to puberulent, pedunculate; peduncle 1–3.5 cm; heads 1 or rarely 2, hemispherical, 1–2 cm in diam.; outermost bracts connate into a cupuliform involucre 5–6 mm, marginally irregular. Flowers sessile. Calyx with hypanthium portion turbinate, ca. 2 mm, glabrous; limb ca. 2 mm, deeply 5-lobed; lobes narrowly triangular, densely hirsute, ciliate. Corolla white, funnellform, glabrous outside; tube 2–3 mm, densely villous in throat inside; lobes subelliptic to triangular, 1–1.2 mm, apex rostrate. Drupes ellipsoid, oblong-ellipsoid, or narrowly ovoid, 6–8 mm, color not noted; pyrenes longitudinally 4- or 5-ribbed. Fl. Jul.

Mountain forests. Hainan (Changjiang, Dongfang) [Vietnam (*Poilane 21252 P!*)].

The one developed flower seen resembles the long-styled form of distylous *Psychotria* species (*Lau 27455*, MO!). Several Vietnam specimens at P clearly belong to *P. laui*, and this species is here reported from that country as well.

10. *Psychotria manillensis* Bartling ex Candolle, Prodr. 4: 522. 1830.

琉球九节木 liu qiu jiu jie mu

Shrubs to 2(–6) m tall; stems glabrous. Petiole 0.5–3.6 cm, glabrous; leaf blade drying thinly leathery, reddish brown to reddish gray, elliptic-oblong, oblong-lanceolate, or obovate-elliptic, 9–18.7[–20.5] × 3–8 cm, glabrous on both surfaces, base acute to cuneate, margins flat to thinly revolute, apex acute or shortly acuminate; secondary veins [6 or]7–12 pairs, free or usually forming a looping submarginal vein, sometimes with foveolate domatia; stipules caducous, triangular to ovate, interpetiolar, 3–6[–10] mm, glabrous, acute to obtuse. Inflorescences terminal or pseudoaxillary, cymose, glabrous [to puberulent], pedunculate; peduncle [0.1–]0.5–3.5 cm; branched portion corymbiform to broadly pyramidal, 2.5–6 × 3–7 cm; bracts triangular to broadly triangular, 0.3–1.5[–5.8] mm, those subtending flowers 0.3–1.2 mm; pedicels to 2 mm. Flowers sessile to pedicellate. Calyx glabrous; hypanthium portion obconic, 0.8–1 mm; limb 0.5–0.8 mm, lobed for ca. 1/2; lobes broadly triangular. Corolla white, tubular-funnelform, glabrous outside; tube ca. 2[–4] mm, densely villous in throat; lobes triangular, ca. 2 mm. Drupes red or purple, ellipsoid or ovoid-ellipsoid, 8–12[–15] × 5–6 mm; pyrenes 3- or 4-ribbed. Fl. Jun–Aug, fr. Aug.

Broad-leaved forests; near sea level [to 900 m in the Philippines]. Taiwan (Lan Yu) [Japan (Ryukyu Islands), Philippines].

Measurements included here in brackets were reported by Sohmer and Davis (*Sida*, Bot. Misc. 27: 138–142. 2007) for Philippine plants of this species.

11. *Psychotria morindoides* Hutchinson in Sargent, Pl. Wilson. 3: 414. 1916.

聚果九节 ju guo jiu jie

Shrubs, 0.5–3 m tall; stems densely hirtellous to tomentulose-pilosulous or glabrescent. Petiole 1.2–6 cm, densely hirtellous to glabrescent; leaf blade drying papery, dark reddish brown, gray, grayish brown, or greenish gray, oblanceolate, obovate, elliptic-obovate, or elliptic-oblong, 8–30 × 3–11.5 cm, glabrous adaxially, puberulent to densely hirtellous abaxially, base acute to obtuse and sometimes oblique, margins flat, apex acute to acuminate and sometimes curved; secondary veins 8–15 pairs, free or forming only a weak looping submarginal vein, without domatia; stipules caducous, oblong-ovate, interpetiolar, 8–20 mm, puberulent to densely hirtellous, ciliolate, 2-lobed for 1/4–1/2, lobes narrowly triangular to linear. Inflorescences terminal sometimes becoming pseudoaxillary, capitate to subcapitate, densely hirtellous, many flowered, subsessile to pedunculate; peduncle to 6 cm; head or branched portion ovoid, ellipsoid, or pyramidal in outline, 2–6.5 × 1.5–4 cm; bracts linear, ca. 5 mm. Flowers sessile. Calyx glabrous; hypanthium portion obconic, ca. 1.25 mm; limb 2.5–3 mm, deeply lobed; lobes linear-lanceolate, entire to sparsely ciliate. Corolla white, funnel-form to tubular-funnel-form, outside glabrous; tube ca. 4 mm, densely villous in throat; lobes lanceolate, 1.2–1.5 mm, apex thickened. Drupes red, ellipsoid, 6–8 × 3–5 mm; pyrenes 3- or 5-ribbed. Fl. Apr–Nov, fr. Jul–Dec.

Forests along valley streams; 1000–2300 m. Yunnan [Laos, Thailand (*Rock 1773, A!*)].

12. *Psychotria pilifera* Hutchinson in Sargent, Pl. Wilson. 3: 415. 1916.

毛九节 mao jiu jie

Shrubs, 0.75–1.75 m tall; stems densely villous to villosulous. Petiole 1–5 cm, densely villous; leaf blade drying papery or membranous, dark reddish brown, elliptic, elliptic-obovate, or elliptic-oblong, 8–23 × 3–11 cm, moderately to densely and similarly strigose to hirsute on both surfaces, base acute or obtuse to rounded, margins flat and ciliate, apex acute to shortly acuminate with tip to 1 cm and sometimes curved; secondary veins 5–15 pairs, not forming a submarginal vein, apparently without domatia; stipules caducous to tardily deciduous, ovate-triangular, interpetiolar, 15–25 mm, densely hirsute to villosulous, 2-lobed for ca. 1/2, lobes narrowly triangular, acuminate to caudate. Inflorescences terminal becoming pseudoaxillary, congested-cymose to subcapitate, densely hirsute or villous, pedunculate; peduncle 3–6.5 cm; branched portion pyramidal to subglobose, 2–3.5 × 2–5 cm; bracts linear-lanceolate, 4–10 mm, ciliate, acuminate. Flowers subsessile. Calyx glabrescent to sparsely villosulous; hypanthium portion obconic, ca. 1 mm; limb 2.5–3.5 mm, lobed for ca. 2/3; lobes narrowly triangular to linear-lanceolate. Corolla in bud funnel-form, outside villosulous, to 4 mm. Drupes red, oblong-ellipsoid, 8–10 × 4–5 mm, sparsely villosulous to glabrescent; pyrenes 3- or 4-ribbed. Fl. Jul, fr. Aug–Dec.

- Forests in ravines; 1300–1700 m. Yunnan.

The protologue described the inflorescences as sometimes axillary, but this appears to be a description of the position separated here as pseudoaxillary. W. C. Chen (in FRPS 71(2): 59. 1999) described the petioles as becoming glabrescent with age and the secondary leaf veins

as impressed above, but these conditions have not been seen on any of the specimens studied.

13. *Psychotria prainii* H. Léveillé, Repert. Spec. Nov. Regni Veg. 9: 324. 1911.

驳骨九节 bo gu jiu jie

Cephalis siamica Craib; *Psychotria siamica* (Craib) Hutchinson.

Shrubs, 0.5–2 m tall; stems densely hirtellous. Leaves opposite but sometimes crowded at stem apices; petiole 0.2–2.2 cm, densely hirtellous; blade drying papery or thinly leathery, dark reddish brown, grayish green, or brownish green, elliptic, elliptic-oblong, lanceolate-oblong, obovate-oblong, or ovate, 3–15 × 1.3–6.5 cm, glabrous adaxially, densely hirtellous to hirsute throughout abaxially, base acute to obtuse, margins flat, apex shortly obtuse and sometimes then shortly acuminate; secondary veins 6–11 pairs, free or forming a weak, looping, incomplete submarginal vein, without domatia; stipules caducous, ovate, interpetiolar, 5–15 mm, densely hirtellous, 2-lobed for 1/3–1/2, lobes subulate. Inflorescences terminal or pseudoaxillary, capitate to densely congested-cymose, several flowered, hirtellous, sessile to pedunculate; peduncle to 1 cm; head subglobose, 1–1.5 × 1–1.5 cm; bracts narrowly triangular, 3–7 mm. Flowers sessile or subsessile. Calyx hirtellous; hypanthium portion obconic, ca. 1 mm; limb 1.5–3.5 mm, deeply lobed; lobes narrowly lanceolate, spatulate, or narrowly elliptic, ciliolate. Corolla white, funnel-form, outside glabrous except pilosulous on tips of lobes; tube ca. 3 mm, densely villous in throat; lobes triangular-ovate, ca. 1.5 mm. Drupes red, ellipsoid or obovoid, 5–8 × 4–5 mm; pyrenes shallowly 4- or 5-ribbed. Fl. May–Aug, fr. Jul–Nov.

Rocky thickets, forests in ravines, mountain slopes; 1000–1700 m. Guangdong (Yangshan), W Guangxi, SW Guizhou, Yunnan [Laos, Thailand, Vietnam].

This species is used medicinally.

The illustration of the corollas of this species in FRPS (71(2): 56, t. 14, f. 5–9. 1999) does not agree with the specimens seen; in particular, the tube illustrated is too short in relation to the lobes. No differences are evident between specimens of *Psychotria siamica* and of *P. prainii*, so the former are here synonymized.

14. *Psychotria serpens* Linnaeus, Mant. Pl. 2: 204. 1771.

蔓九节 man jiu jie

Psychotria scandens Hooker & Arnott.

Climbing or creeping vines or lianas, to 6 m or more, rather fleshy, juvenile stems appressed to substrate with adventitious roots, reproductive stems spreading at apex; stems glabrous. Petiole 1–10 mm, glabrous; leaf blade drying papery to leathery, pale green, dark reddish green, reddish brown, or dark brown, often paler below, ovate or obovate on juvenile stems and elliptic, elliptic-oblong, lanceolate, oblanceolate, or obovate-oblong on reproductive stems, 0.7–9 × 0.5–3.8 cm, glabrous, base acute to obtuse, margins plane or sometimes thinly revolute, apex acute, obtuse, or sharply acuminate; secondary veins not visible or 3–10 pairs, not forming a submarginal vein,

without domatia; stipules caducous, triangular to ovate, interpetiolar or shortly united around stem, 2–3 mm, glabrous, acute to rounded. Inflorescences terminal, cymose, glabrous to puberulent, few to many flowered, branched for 3–5 orders, pedunculate; peduncle 0.5–3 cm; branched portion corymbiform, 1–5 × 1–5.5(–10) cm; bracts subtending secondary axes 1–2 mm and triangular or often leaflike and 3–6 mm, those subtending pedicels triangular, 0.2–1.5 mm; pedicels 0.5–1.5 mm. Flowers pedicellate. Calyx glabrous to puberulent; hypanthium portion obconic, 0.8–1 mm; limb flared, 0.5–1 mm, partially lobed; lobes triangular, ca. 0.5 mm. Corolla white, funnellform, outside glabrous to usually puberulent; tube 1.5–3 mm, in throat densely villous; lobes ligulate-oblong, 1.5–2.5 mm. Drupes white, subglobose or ellipsoid, 4–7 × 2.5–6 mm, with pedicels to 5 mm; pyrenes shallowly 4- or 5-ribbed. Fl. Apr–Jun, fr. year-round.

Thickets or forests in ravines, mountains, hills, flat lands; below 100–1400 m. Fujian, Guangdong, Guangxi, Hainan, Taiwan, Zhejiang [Cambodia, Japan, N Korea, Laos, Thailand, Vietnam].

This species is used medicinally.

W. C. Chen (in FRPS 71(2): 60. 1999) described the stems, petioles (but not the leaf blades), inflorescence axes, and calyces as spreading pubescent, but this has not been seen on any of the specimens studied nor reported by other authors.

This species is commonly collected and morphologically quite variable, including in drying color, leaf size and shape, inflorescence size, and fruit size. The climbing habit and white fruit of this species are unusual in the genus but similar to some other species of Asian *Psychotria* (Sohmer & Davis, Sida, Bot. Misc. 27: 1–247. 2007). The name *P. ixoroides* Bartling ex Candolle has been considered a synonym of *P. serpens* by some authors, notably Merrill, but Sohmer and Davis (loc. cit.: 41–45) considered *P. ixoroides* an accepted species in the Philippines. However, they did not make any comparison there with *P. serpens*. *Psychotria serpens* is also similar to *P. sarmentosa* Blume, which was considered a distinct species by Sohmer (in Dassanayake, Revis. Handb. Fl. Ceylon 6: 349–352. 1987) again without any comparison to *P. serpens*.

15. *Psychotria straminea* Hutchinson in Sargent, Pl. Wilson. 3: 416. 1916.

黄脉九节 huang mai jiu jie

Shrubs, 0.5–3 m tall; stems glabrous. Petiole 0.5–3.5 cm, glabrous; leaf blade drying papery to membranous, yellowish green, often pale below, elliptic, elliptic-oblong, oblanceolate, or obovate, 5.5–29 × 0.8–10.5 cm, glabrous on both surfaces, base cuneate to obtuse, margins flat, apex acuminate or acute; secondary veins 5–10 pairs, thinly prominent adaxially, free or forming an incomplete looping submarginal vein, without domatia; stipules persistent on apical nodes, triangular to ovate or elliptic, shortly fused around stem, 2.5–6.7 mm (including lobes), glabrous, 2-lobed, lobes linear, 0.5–1.2 mm, often tipped with a caducous gland. Inflorescences terminal, few flowered, cymose, glabrous, pedunculate; peduncle 1–2.5 cm; branched portion corymbiform, 1–5 × 1.5–4 cm, branched to 1–3 orders; bracts triangular, 0.2–1 mm; pedicels 1.5–4 mm. Flowers pedicellate in dichotomous cymes of 3–7. Calyx glabrous; hypanthium portion obconic, ca. 1 mm; limb ca. 1 mm, lobed shallowly or to 1/2; lobes triangular. Corolla white or pale green,

tubular-funnelform, glabrous outside; tube 1.5–2 mm, villous in throat; lobes ovate-triangular, 1.5–2.5 mm. Drupes red or perhaps ultimately black, subglobose or ellipsoid, 7–13 × 4–9 mm, with pedicels or stipes to 10 mm; pyrenes smooth or shallowly 3- or 4-ribbed. Fl. Jan–Jul, fr. Jun–Jan of following year.

Forests in ravines, hill slopes; 100–2700 m. Guangdong, Guangxi, Hainan, Yunnan [Vietnam].

W. C. Chen (in FRPS 71(2): 52. 1999) described the fruit as black at maturity, and the dried fruit seen have this color; but it remains to be confirmed in living fruit by field observations. Some other *Psychotria* species have fruit that are red at maturity but dry black, while some species have fruit that turn red then ultimately black when ripe.

16. *Psychotria symplocifolia* Kurz, Forest Fl. Burma 2: 11. 1877.

山矾叶九节 shan fan ye jiu jie

Shrubs or small trees, 1–5 m tall; stems glabrous. Petiole 0.5–3.5 cm, glabrous; leaf blade drying papery to leathery, dark reddish green, brownish green, or clear green, oblong-obovate, elliptic-obovate, or elliptic-lanceolate, 6–12.7 × 2–6 cm, glabrous on both surfaces, base cuneate to acute, margins flat to thinly revolute, apex shortly and abruptly acuminate; secondary veins 6–12 pairs, free or forming a weak, incomplete, looping submarginal vein, sometimes with foveolate domatia; stipules caducous, ovate, interpetiolar or shortly fused around stem, 6–12 mm, glabrous outside (abaxially), inside (adaxially) densely villous, acuminate, entire or 2-denticulate. Inflorescence terminal, cymose-paniculiform, puberulent to hirtellous with pubescence often in lines, often glabrescent with age, pedunculate; peduncle 1–2.5 cm; branched portion pyramidal, 2.5–6 × 1.5–2.5 cm, with 2 or 3 pairs of developed secondary axes; bracts triangular, 0.1–1 mm. Flowers sessile and subsessile in glomerulate groups. Calyx glabrous; hypanthium portion turbinate, ca. 1 mm; limb ca. 0.5 mm, truncate to shallowly lobed; lobes triangular. Corolla presumably white, salverform to funnellform, glabrous outside; tube ca. 2 mm, in throat white villous; lobes ovate-triangular, 1.5–2.2 mm. Drupes red, ellipsoid, 6–9 × 4–6 mm; pyrenes with 1 longitudinal ridge. Fl. Feb–Apr, fr. Jun.

Forests on mountains; 1200–2300 m. Yunnan [India, Myanmar, N Thailand].

17. *Psychotria tutcheri* Dunn, J. Bot. 48: 324. 1910.

假九节 jia jiu jie

Shrubs, 0.5–4 m tall; stems puberulent to glabrous. Petiole 0.5–2 cm, puberulent to glabrous; leaf blade drying papery to thinly leathery, pale or usually reddish brown to dark brown, narrowly elliptic, narrowly lanceolate-oblong, narrowly lanceolate, or narrowly elliptic-oblong, 5.5–15 × 1.5–4 cm, glabrous adaxially, glabrous to puberulent abaxially, base cuneate to acute, margins flat, apex acuminate or caudate-acuminate; secondary veins 4–8 pairs, free or forming a weak, looping, submarginal vein, without or rarely with pilosulous domatia; stipules caducous, ovate-triangular, triangular, or lanceolate, interpetiolar, 2–8 mm, glabrous to puberulent, 2-lobed for 1/4–1/2, lobes narrowly triangular to linear. Inflorescences terminal and sometimes pseudoaxillary or rarely in uppermost leaf axils (*He*

Guosheng 6040, MO!), cymose, densely puberulent, sessile to pedunculate; peduncle to 0.6 cm; branched portion corymbiform, 1.5–6 × 1–4 cm, with 1 or 2 pairs of developed secondary axes; bracts lanceolate to triangular, 0.3–2 mm; pedicels to 0.5 mm. Flowers sessile to subsessile in congested small cymules. Calyx puberulent to glabrescent; hypanthium portion obconic to turbinate, 0.8–1 mm; limb 0.5–0.8 mm, lobed shallowly or up to 1/2; lobes broadly triangular. Corolla white or greenish white, tubular, glabrous outside; tube 2–3 mm, in throat white villous; lobes oblong-lanceolate, 1.5–2 mm. Drupes subglobose, 5–7 × 4–6 mm, color unknown; pyrenes shallowly 3- or 4-ribbed to subsmooth. Fl. Apr–Jul, fr. Jun–Dec.

Thickets or forests in ravines or on hill slopes; 200–1000 m. Fujian, Guangdong, Guangxi, Hainan, Yunnan [Vietnam].

W. C. Chen (in FRPS 71(2): 54. 1999) described leaf sizes and secondary vein numbers that are unusually large, to 22 × 6 cm and 13 pairs, respectively; these measurements have not been seen on any specimens studied nor reported by any other authors.

18. *Psychotria yunnanensis* Hutchinson in Sargent, Pl. Wilson. 3: 414. 1916.

云南九节 yun nan jiu jie

Psychotria kwangsiensis H. L. Li.

Shrubs, 1–4 m tall; stems glabrous. Petiole 1–5.5 cm, glabrous; leaf blade drying papery to membranous, dark brown or greenish brown, sometimes paler below, obovate-oblong, elliptic, ovate-oblong, or oblanceolate, 9–30.5 × 3–11 cm, glabrous on both surfaces or puberulent to hirtellous along principal veins abaxially, base acute to obtuse, margins flat, apex acuminate or acute; secondary veins 8–16 pairs, not forming a submarginal vein, without domatia; stipules caducous, ovate, interpetiolar, 6–15 mm, glabrous or hirtellous in basal portion, 2-lobed for 1/4–1/3, lobes narrowly triangular, acuminate. Inflorescences terminal or pseudoaxillary, thyriform to paniculate, many flowered, puberulent or hirtellous in lines often becoming glabrescent; peduncle 1–6 cm; branched portion pyramidal to broadly pyramidal, 3–10 × 2.5–6.5 cm, with 1 or 2 pairs of well-developed secondary axes, with 3–11 glomerules or cymules; bracts triangular to lanceolate, 1–10 mm, acuminate; pedicels to 3 mm. Flowers subsessile to pedicellate in groups of 5–15. Calyx glabrous; hypanthium portion obconic, ca. 1 mm; limb campanulate, 1.3–2.5 mm, lobed shallowly to deeply; lobes deltoid to narrowly triangular or narrowly lanceolate. Corolla white, salverform, outside glabrous; tube ca. 5 mm, in throat villous; lobes elliptic-oblong, ca. 3 mm. Drupes ellipsoid or subglobose, 6–12 × 4–7 mm, color not noted; pyrenes 4- or 5-ridged. Fl. Apr–Dec.

• Forests in ravines, hill slopes; 800–2300 m. Guangxi (Napo), Xizang (Médog), Yunnan.

Fl. China 19: 294–301. 2011.