

9. PREMNA Linnaeus, Mant. Pl. 154. 1771, nom. cons.

豆腐柴属 dou fu chai shu

Pygmaepremna Merrill.

Trees, shrubs, or subshrubs, erect or rarely climbing. Branches usually terete, usually with round or elliptic yellowish glandular lenticels. Leaves simple, opposite, margin entire or 3–5-crenate. Inflorescences terminal trichotomous panicles, leaf opposed cymes, clusters, paniculate corymbs, or spikelike thyrses. Flowers small. Calyx ± cup-shaped or campanulate, truncate, sinuately dentate, or rarely long dentate, teeth equal or clearly 2-lipped. Corolla with a short tube; lobes 4 or obscurely 5, spreading, subequal to clearly 2-lipped. Stamens 4, often didynamous, shorter than corolla or sometimes slightly exerted. Ovary (2- or) 4-locular; ovules 1 (or 2) per locule, pendulous or laterally attached. Style capillary; stigma 2-cleft. Fruit a small drupe, usually with a 4-locular pyrene.

About 200 species: Old World tropics and subtropics, 46 species in China.

- 1a. Suffrutescent herbs with a woody rhizome; ovary 2-locular 46. *P. herbacea*
- 1b. Trees or shrubs; ovary 4-locular.
 - 2a. Inflorescences spikelike or racemelike thyrses; calyx lips entire or upper lip slightly emarginate.
 - 3a. Inflorescences racemelike thyrses with pedunculate cymes 43. *P. racemosa*
 - 3b. Inflorescences spikelike thyrses with sessile cymes.
 - 4a. Shrubs; leaf blade papery; bracts ca. 10 mm 44. *P. interrupta*
 - 4b. Trees; leaf blade subleathery; bracts ca. 5 mm 45. *P. bracteata*
 - 2b. Inflorescences compound cymes; calyx not 2-lipped or if 2-lipped then lips dentate or lobed.
 - 5a. Calyx 4-dentate or subtruncate, not indistinctly 2-lipped.
 - 6a. Leaf blade leathery or thickly papery, both surfaces glabrous.
 - 7a. Erect trees or shrubs; leaf blade thickly papery, veins elevated on both surfaces 37. *P. scoriarum*
 - 7b. Plants climbing; leaf blade leathery, veins abaxially obscure or only slightly distinct 38. *P. scandens*
 - 6b. Leaf blade papery or submembranous, pubescent.
 - 8a. Branches gray-yellow; leaf blade base rounded or truncate 34. *P. fohaiensis*
 - 8b. Branches brown to black-brown; leaf blade base cuneate to subrounded.
 - 9a. Leaf blade broadly ovate to ovate-lanceolate, papery 35. *P. szemaoensis*
 - 9b. Leaf blade narrowly elliptic to elliptic, submembranous 36. *P. paisehensis*
 - 5b. Calyx 5-dentate, 5-lobed, or distinctly 2-lipped.
 - 10a. Calyx distinctly 2-lipped.
 - 11a. Calyx lower lip emarginate, upper lip with 3 minute emergences 42. *P. laevigata*
 - 11b. Calyx lower lip subtire to shortly 3-lobed, upper lip emarginate or 2-dentate.
 - 12a. Calyx 4–5 mm.
 - 13a. Base of leaf blade cuneate to decurrent 8. *P. confinis*
 - 13b. Base of leaf blade rounded to somewhat cordate 39. *P. odorata*
 - 12b. Calyx 1.5–3 mm.
 - 14a. Lower lip of calyx subtire to slightly 2-dentate; corolla yellow or white 41. *P. hainanensis*
 - 14b. Lower lip of calyx subtire to 3-dentate; corolla greenish yellow 40. *P. serratifolia*
 - 10b. Calyx not 2-lipped, actinomorphic (calyx nearly 2-lipped in *P. confinis*).
 - 15a. Cymes in a lax conical panicle.
 - 16a. Branchlets, leaves, and petioles with stellate hairs 1. *P. pyramidata*
 - 16b. Branchlets, leaves, and petioles without stellate hairs.
 - 17a. Leaf blade base narrow cuneate or decurrent.
 - 18a. Evergreen; leaf blade leathery, adaxially dark yellow glandular; calyx nearly 2-lipped 8. *P. confinis*
 - 18b. Deciduous; leaf blade papery, adaxially without glands; calyx equally 5-dentate.
 - 19a. Leaf blade margin serrate or entire; corolla ca. 7–9 mm 3. *P. microphylla*
 - 19b. Leaf blade margin entire or 3–5-crenate; corolla 3–5 mm 4. *P. ligustroides*
 - 17b. Leaf blade base cuneate or subcordate.
 - 20a. Inflorescence branches not scorpioid; flowers usually persistent.
 - 21a. Leaf blade pubescent, without glands or with minute inconspicuous glands; branchlets horizontal 2. *P. puberula*
 - 21b. Leaf blade subglabrous on both surfaces, abaxially brownish red glandular; branches ascending 5. *P. sunyiensis*
 - 20b. Inflorescence branches often scorpioid; flowers usually deciduous but pedicel usually persistent.
 - 22a. Shrubs, usually climbing; panicles 2–5 cm wide 9. *P. fordii*
 - 22b. Shrubs or trees, usually erect; panicles 8–15 cm wide.
 - 23a. Leaf blade 9–15 × 5–9 cm; petiole 2–5 cm; branchlets puberulent when young; panicles always conical 6. *P. cavaleriei*

- 23b. Leaf blade 5–9 × 3–4 cm; petiole (0.1–)0.2–0.3 cm; branchlets tomentellous when young; panicles often rounded 7. *P. chevalieri*
- 15b. Cymes in a lax flat-topped corymb or dense capitulum.
- 24a. Cymes in a lax flat-topped corymb.
- 25a. Leaf blade densely pubescent or pilose on 1 or both surfaces.
- 26a. Flowers dusty yellow 14. *P. latifolia*
- 26b. Flowers white to greenish or yellowish green.
- 27a. Leaf pairs equal 18. *P. tapintzeana*
- 27b. Leaf pairs unequal.
- 28a. Leaves, branchlets, and petioles densely villous 16. *P. fulva*
- 28b. Leaves, branchlets, and petioles pilose.
- 29a. Branchlets with white lenticels; inflorescences 6–17 cm across; stamens didynamous, exerted 15. *P. flavescens*
- 29b. Branchlets with yellow lenticels; inflorescences less than 6 cm across; stamens subequal, included 19. *P. crassa*
- 25b. Leaf blade adaxially glabrous or subglabrous except for pubescent veins.
- 30a. Leaf blade leathery 12. *P. maclurei*
- 30b. Leaf blade papery or membranous.
- 31a. Leaf blade membranous, abaxially sparsely white or yellow glandular; stamens subequal; ovary apex white glandular 17. *P. straminicaulis*
- 31b. Leaf blade papery, abaxially without glands; stamens didynamous; ovary glabrous, without glands.
- 32a. Erect shrubs or trees; leaves black when dry.
- 33a. Leaf blade 3–4(–5) cm wide; panicles to 25 cm 7. *P. chevalieri*
- 33b. Leaf blade 5–6 cm wide; panicles 3–7 cm 13. *P. octonervia*
- 32b. Climbing shrubs; leaves dark green, brownish, or dark brown when dry.
- 34a. Leaf blade ovate, oblong, or rarely obovate, dark green or brownish when dry; bracts lanceolate 11. *P. puerensis*
- 34b. Leaf blade broadly ovate to elliptic, dark brown when dry; bracts awl-shaped 10. *P. subscandens*
- 24b. Cymes in a dense capitulum.
- 35a. Leaf blade and calyx red, purple-red, or orange glandular.
- 36a. Leaf blade and calyx red or purple-red glandular; calyx lobes less than half the calyx.
- 37a. Leaf blade purple-red glandular on both surfaces; corolla violet to pinkish, 4.5–5 mm 20. *P. glandulosa*
- 37b. Leaf blade deep red glandular abaxially; corolla nearly orange, ca. 6 mm 21. *P. henryana*
- 36b. Leaf blade and calyx orange glandular; calyx lobes more than half the calyx.
- 38a. Calyx teeth linear-lanceolate; ovary pilose, apically white glandular; leaf blade 1.5 cm wide 22. *P. punicea*
- 38b. Calyx teeth narrowly triangular; ovary glabrous, without glands; leaf blade 2–4 cm wide 23. *P. rubroglandulosa*
- 35b. Leaf blade and calyx yellow glandular.
- 39a. Corolla white, yellow, to greenish.
- 40a. Leaf blade cordate 31. *P. velutina*
- 40b. Leaf blade ovate-lanceolate, to rounded.
- 41a. Corolla tube glabrous outside; ovary glabrous 29. *P. mekongensis*
- 41b. Corolla tube pubescent outside; ovary pubescent.
- 42a. Leaf blade broadly ovate to rounded; petiole ca. 3 mm 32. *P. tenii*
- 42b. Leaf blade ovate to ovate-oblong; petiole 4–10 mm 33. *P. subcapitata*
- 39b. Corolla pinkish, purple, rose, or rose red.
- 43a. Leaf blade abaxially densely pubescent 30. *P. yunnanensis*
- 43b. Leaf blade abaxially sparsely pubescent.
- 44a. Calyx equal to or shorter than fruit; corolla pinkish.
- 45a. Leaf blade 2–6 cm wide, ovate, base cordate; ovary glabrous; calyx shorter than fruit 24. *P. urticifolia*
- 45b. Leaf blade 0.3–1.1 cm wide, lanceolate to ovate-lanceolate, base cuneate to rounded; ovary sparsely pubescent; calyx as long as fruit 25. *P. parvilimba*
- 44b. Calyx longer than fruit; corolla purple, rose, or rose red.
- 46a. Ovary sparsely pubescent; calyx teeth linear to linear-lanceolate 28. *P. acutata*
- 46b. Ovary glabrous; calyx teeth lanceolate or triangular-lanceolate.
- 47a. Leaf blade 1.5–3.5 cm; petiole 4–5 mm; inflorescences 12-flowered 26. *P. steppicola*
- 47b. Leaf blade (2.5–)5–6 cm; petiole 1–2 mm; inflorescences 2–4(–6)-flowered 27. *P. oligantha*

1. *Premna pyramidata* Wallich ex Schauer in A. de Candolle, Prodr. 11: 633. 1847.

塔序豆腐柴 ta xu dou fu chai

Shrubs or small trees, ca. 6 m tall, erect. Branchlets with sparsely stellate hairs when young, glabrescent. Petiole 1.5–3.5 cm, 4-angled, with stellate hairs; leaf blade oblong, elliptic, or oblong-ovate, 7.5–15 × 4–7 cm, papery, with stellate hairs and yellow glands along veins, base broadly cuneate to rounded, margin entire, apex acuminate to acute. Panicles 6–8 × 3.5–4 cm; peduncle 1.5–2.5 cm, with stellate hairs; bracts linear, less than 5 mm. Calyx campanulate, 5-dentate, outside stellate pubescent; teeth subequal, very short, obtusely triangular. Corolla slightly 2-lipped, lower lip usually 3-lobed, upper lip rounded to emarginate, outside with stellate hairs, villous in throat. Stamens 4, didynamous. Style 3–4 mm. Fruit globose, 3–5 mm in diam. Fl. and fr. Jul-Sep.

Thickets or forests on mountain slopes or along river banks; 300–600 m. Guangdong [India, Myanmar].

2. *Premna puberula* Pampanini, Nuovo Giorn. Bot. Ital., n.s., 17: 701. 1910.

狐臭柴 hu xiu chai

Shrubs or small trees, erect to slightly climbing. Branchlets green when young, becoming brown. Petiole (0.5–)1–2(–3.5) cm; leaf blade brown when dry, oblong-elliptic, ovate-elliptic, or ovate, 2.5–11 × 1.5–5.5 cm, papery, base cuneate, rounded, or slightly cordate, margin entire, apex caudate to acute, reticulate veins abaxially distinct. Panicles 4–14 × 2–9 cm, subglabrous to puberulent; bracts linear to lanceolate. Calyx cup-shaped, 1.5–2.5 mm, outside pubescent and yellow glandular; teeth 5, minute, triangular, ciliate. Corolla white, yellowish, orange, purple, or brown striate, 5–7 mm, tube 2.5–4 mm, slightly 2-lipped, villous in throat, lower lip 3-lobed; upper lip rounded to emarginate, outside densely glandular. Stamens slightly exerted; filaments glabrous. Ovary glabrous, apically glandular. Style shorter than stamens. Fruit purple-black, obovate. Fl. and fr. May-Sep.

• 700–1800 m. Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, S Shanxi, Sichuan, Yunnan.

The two Chinese varieties are rather poorly differentiated; however, there does appear to be a good correlation within the material available between flower color and flower size. Plants with white corollas have tubes less than 3 mm, whereas those with yellow corollas or yellow marked with brown have tubes 2.4–4 mm. This distinction merits further investigation.

- 1a. Branchlets pilose when young, glabrescent;
petioles glabrous 2a. var. *puberula*
1b. Branchlets densely pubescent; petioles densely
pubescent 2b. var. *bodinieri*

2a. *Premna puberula* var. *puberula*

狐臭柴 hu xiu chai

Premna martinii H. Léveillé; *P. subcordata* Nakai.

Branchlets pilose when young, glabrescent. Petiole glabrous; leaf blade subglabrous to pubescent on both surfaces. Fl. and fr. May-Aug.

• Mixed forests; 700–1800 m. Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, S Shanxi, Sichuan, Yunnan.

Medicinal.

2b. *Premna puberula* var. *bodinieri* (H. Léveillé) C. Y. Wu & S. Y. Pao, Fl. Yunnan. 1: 422. 1977.

毛狐臭柴 mao hu xiu chai

Premna bodinieri H. Léveillé, Repert. Spec. Nov. Regni Veg. 10: 440. 1912.

Young branchlets, both leaf surfaces, petioles, and inflorescences densely pubescent. Fl. and fr. May-Sep.

• Thickets on mountain slopes in calcareous soil; 700–1800 m. W Guangxi, Guizhou, SE Yunnan.

3. *Premna microphylla* Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 36(3): 217. 1863.

豆腐柴 dou fu chai

Premna formosana Maximowicz; *P. japonica* Miquel; *P. microphylla* var. *glabra* Nakai.

Shrubs, erect. Branchlets pubescent when young, glabrescent. Leaves sessile or short petiolate with a winged petiole; leaf blade ovate-lanceolate, elliptic, ovate, or obovate, 3–13 × 1.5–6 cm, subglabrous to pubescent, base narrowly cuneate, margin entire or lobed to sometimes serrulate, apex long acuminate to acute. Inflorescences conical panicles. Calyx green and slightly purplish, cup-shaped, subequally 5-dentate, densely pubescent to subglabrous. Corolla yellowish, (6.5–)7(–9) mm, outside puberulent and glandular, inside pilose especially at throat. Fruit purple, globose to obovate. Fl. and fr. May-Oct.

Mixed forests on mountain slopes; 200–1000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan].

The species is extremely variable in leaf characters.

4. *Premna ligustroides* Hemsley, J. Linn. Soc., Bot. 26: 256. 1890.

臭黄荆 xiu huang jing

Shrubs 1–3 m tall. Branches many, slender, pubescent when young. Leaves subsessile to short petiolate; leaf blade lanceolate to ovate-lanceolate, 1.5–8 × 1–3 cm, pilose, abaxially purple-red glandular, base cuneate, margin entire or coarsely 3–5-dentate, apex acuminate to acute. Panicles 2–7.5 × 1–4.5 cm, pilose. Calyx cup-shaped, ca. 2 mm, nearly 2-lipped, 5-dentate, outside puberulent and glandular, inside sparsely glandular. Corolla yellow, 3–5 mm, nearly 2-lipped, 4-lobed; lower lip with 3 slightly unequal lobes and narrower than upper lip, both surfaces velvety and yellow glandular. Ovary glabrous, glandular. Style ca. 4 mm. Fruit globose, 2.5–5 × 2.5–4 mm, apically glandular. Fl. and fr. May-Jul.

• Mixed forests; 500–1000 m. Guizhou, Hubei, Jiangxi, Sichuan.

Medicinal.

5. *Premna sunyiensis* P'ei, Mem. Sci. Soc. China 1(3): 84. 1932.

塘虱角 tang shi jiao

Shrubs 1–2 m tall, erect to climbing; branches, petioles, and inflorescences brownish and dark gray velvety. Petiole 0.6–2 cm; leaf blade ovate-lanceolate to ovate, 3–7.5 × 1–4.5 cm, papery, both surfaces subglabrous, abaxially brownish red glandular, base cuneate to subrounded, margin entire, apex

acuminate; veins 3–5 pairs, abaxially prominent. Panicles 5–12 × 2.5–4 cm; bracts linear to linear-lanceolate, 2–6 mm, velvety. Calyx ca. 1.5 mm, slightly 5-dentate, outside brown glandular and pubescent when young but glabrescent, inside glabrous. Corolla yellow, tube ca. 7 mm; lower lip 3-lobed, middle lobe 1.5–2 mm, longer than lateral lobes; upper lip emarginate, white villous in throat. Anthers brown. Ovary glabrous, apically brown glandular. Fruit dark red, obovate, ca. 4 mm in diam., brown glandular. Fl. and fr. May–Oct.

• Mixed thickets on mountain slopes; 300–700 m. Guangdong (Ruyuan Xian).

Medicinal.

6. *Premna cavaleriei* H. Léveillé, Repert. Spec. Nov. Regni Veg. 10: 439. 1912.

黄药 *huang yao*

Clerodendrum elachistanthum Merrill ex H. L. Li.

Trees 4–9 m tall; bark pale gray. Branches red-brown, terete, with small elliptic lenticels, densely tomentellous when young, glabrescent. Petiole 2–5 cm, sparsely velvety to subglabrous; leaf blade ovate to ovate-elliptic, 9–15 × (3.5–) 5–9 cm, thinly papery, both surfaces sparsely pubescent to subglabrous, abaxially obscurely glandular, base broadly cuneate, rounded, truncate, or subcordate, margin entire, apex acuminate to obtuse. Inflorescences paniculate cymes, 11–32 × 8–15 cm; branches trichotomous. Calyx campanulate, 1–2.5 mm, slightly 2-lipped, outside pubescent and obscurely glandular; teeth 5, obtuse, triangular. Corolla yellowish, slightly 2-lipped, 4-lobed, outside pubescent and glandular; tube 2–3 mm, villous in throat. Ovary glabrous, apically densely yellow glandular. Fruit ovate-globose, ca. 2 mm in diam. Fl. and fr. May–Jul.

• Mixed forests on mountain slopes; 800 m. Guangdong, Guangxi, Guizhou, E Hunan, W Jiangxi.

7. *Premna chevalieri* Dop, Bull. Soc. Bot. France 70: 445. 1923.

尖叶豆腐柴 *jian ye dou fu chai*

Premna acuminatissima Merrill.

Shrubs or trees, 2–5 m tall. Branchlets brown, terete, puberulent when young, glabrescent. Petiole slender, (1–) 2.5–3 mm, pubescent; leaf blade elliptic-ovate to ovate, 5–9 × 3–4(–5) cm, papery to subleathery, shiny, glabrous or abaxially puberulent, base cuneate to rounded and usually oblique, margin entire or obscurely serrulate near base, apex acuminate to caudate; veins 4 or 5 pairs, elevated on both surfaces. Inflorescences lax panicles, 25 × 10 cm, puberulent. Calyx ca. 1 mm, slightly 2-lipped, glandular; teeth 5, minute, nearly triangular. Corolla ca. 5 mm, outside puberulent and glandular, villous in throat, slightly 2-lipped; lower lip 3-lobed, lobes subrounded; upper lip subrounded, entire, Stamens nearly as long as corolla; anthers subglobose. Ovary glabrous, glandular. Style ca. 5 mm, sparsely glandular. Fruit black, (4.5–)5 mm in diam.

Mixed forests on mountain slopes; 800–1100 m. Hainan, SE Yunnan [Laos, Vietnam].

8. *Premna confinis* P'ei & S. L. Chen ex C. Y. Wu, Fl. Yunnan. 1: 437. 1977.

滇桂豆腐柴 *dian gui dou fu chai*

Shrubs or small trees, 1.5–6 m tall, evergreen. Branchlets brown, terete, with dotted or linear lenticels, glabrous, densely scurfy glandular. Petiole 2–4 cm, densely glandular; leaf blade oblong, lanceolate, or rarely elliptic, 9–16 × 3.5–8 cm, leathery, adaxially glabrous and dark brown when dry, both surfaces dark yellow glandular, base cuneate to decurrent, margin entire or repand, apex acute to acuminate; veins 6 or 7 pairs, abaxially elevated. Panicles large and lax, ca. 20 cm, branches trichotomous; peduncle 1–3.5 cm; bracts 3–6(–12) mm. Calyx 4–5 mm, papery, nearly 2-lipped, lower lip 3-dentate, upper lip 2-dentate, both surfaces glabrous and glandular. Corolla yellow or white, ca. 8 mm, outside glabrous and densely glandular, densely villous in throat, 2-lipped; lower lip 3-lobed, ciliate; upper lip entire or emarginate. Filaments glabrous, slightly exerted; anthers dark brown. Ovary obovate, glabrous, apically glandular. Fruit purple-red, ca. 3 mm in diam., slightly tubercular, glandular.

• Mixed forests; 600 m. W Guangxi, SE Yunnan.

9. *Premna fordii* Dunn, Bull. Misc. Inform. Kew, Add. Ser. 10: 203. 1912.

长序臭黄荆 *chang xu xiu huang jing*

Shrubs, erect to climbing. Petiole 0.5–2 mm; leaf blade ovate-oblong to ovate, 4–11 × 3–4.5 cm, papery, abaxially dark yellow glandular, base truncate to subcordate, margin entire or sparsely serrate above middle, apex long acuminate. Panicles 2.5–17 × 2–5 cm. Calyx cup-shaped, 1–2 mm, slightly 2-lipped, 5-dentate, upper teeth obtuse, outside pubescent or glabrous and small yellow glandular. Corolla yellow or white, (3–)8 mm, tube slender, outside minutely tomentose or glabrous and glandular, inside glabrous except white villous at throat. Filaments glabrous. Ovary glabrous, apically yellow glandular. Style ca. 5.5 mm. Fruit subglobose, ca. 4 mm in diam. Fl. and fr. May–Jul.

• 1000–1200 m. Guangdong, Guangxi, Hainan.

1a. Calyx pubescent; corolla minutely tomentose

..... 9a. var. *fordii*

1b. Calyx and corolla glabrous 9b. var. *glabra*

9a. *Premna fordii* var. *fordii*

长序臭黄荆 *chang xu xiu huang jing*

Premna stenantha Merrill.

Leaf blade 4–8.5 cm. Panicles 2.5–10 cm. Calyx outside pubescent. Corolla outside minutely tomentose.

• Forests or along streams; 1000–1200 m. Guangdong, Guangxi, Hainan.

9b. *Premna fordii* var. *glabra* S. L. Chen, Fl. Reipubl. Popularis Sin. 65(1): 211. 1982.

无毛臭黄荆 *wu mao xiu huang jing*

Leaf blade to 11 cm. Panicles to 17 cm. Calyx and corolla outside glabrous.

• Dense forests; 1000–1200 m. Guangxi (Dongxing Xian).

10. *Premna subscandens* Merrill, Philipp. J. Sci. 1 (Suppl.): 230. 1906.

攀援臭黄荆 *pan yuan xiu huang jing*

Shrubs, climbing, 3–5 m tall; petioles and inflorescences sparsely yellow-brown pubescent when young, becoming gray and glabrous. Branchlets grayish green. Petiole 1–4 cm; leaf blade dark brown when dry, elliptic to broadly ovate, 6–13.4 × 4–7 cm, papery, subglabrous to pilose on veins, base broadly truncate-rounded to subcordate, margin entire or irregularly serrulate, apex acuminate to acute; veins 3–6 pairs, ± 3-veined near base. Inflorescences 2–6 × 5–8 cm, branches dichotomous or trichotomous; bracts awl-shaped, 3–6 mm, both surfaces pubescent. Calyx campanulate, 2–3 mm, slightly 2-lipped, 5-dentate, outside pubescent. Corolla white, ca. 4 mm, slightly 2-lipped, 4-lobed, outside densely pubescent especially apically, villous in throat with hairs usually slightly exerted, lower lip 3-lobed, upper lip entire or emarginate. Stamens exerted. Ovary glabrous, glandular. Fruit globose, ca. 4 mm in diam. Fl. and fr. Apr-Jul.

Mountain slopes; 400–800 m. Hainan [Philippines].

11. *Premna puerensis* Y. Y. Qian, Guihaia 11: 123. 1991.

普洱豆腐柴 pu er dou fu chai

Shrubs, climbing, ca. 2 m tall; petioles and inflorescences pubescent when young, glabrescent. Branchlets subterete, grooved. Petiole 0.8–2 cm; leaf blade oblong, ovate, or rarely obovate, 3–8 × 2–4 cm, papery, abaxially dark green but becoming brownish when dry, adaxially dark green and glabrescent but pubescent along midvein, base broadly cuneate to rounded, margin entire or irregularly serrate, apex acuminate to acute, veins 4–6 pairs. Inflorescences corymbose cymes, 2–4 × 3–4 cm, dichotomous or trichotomous; bracts lanceolate, 5–6 mm, both surfaces pubescent. Calyx campanulate, 1.5–2 mm, slightly 2-lipped; lobes 5, pubescent. Corolla greenish, 3.8–4 mm, slightly 2-lipped; lower lip 3-lobed, middle lobe longest; upper lip emarginate. Stamens inserted at corolla throat; filaments basally villous. Style slightly longer than stamens. Fl. Jun.

• Thickets on mountain slopes; 1400 m. Yunnan (Puer Xian).

Allied to *Premna subscandens* and *P. puberula* but differs from the former in having leaf blades oblong, ovate, or rarely obovate and bracts lanceolate, and from the latter in having corymbose cymes, calyces campanulate, and calyx lobes obtuse.

12. *Premna maclurei* Merrill, Lingnan Sci. J. 6: 330. 1928.

弯毛臭黄荆 wan mao xiu huang jing

Shrubs, erect to climbing. Branchlets yellow-brown, with small lenticels, densely yellow-brown pilose when young, becoming brown and subglabrous. Petiole 1–1.5 cm, densely yellow-brown pilose; leaf blade oblong, elliptic, or obovate-oblong, 6–15 × 3–7 cm, leathery, rust colored, pubescent only along veins or abaxially densely pubescent, base rounded, margin entire, apex acuminate; veins 5–7 pairs, curve apically along margins and anastomose, reticulate veins elevated on both surfaces. Inflorescences 4–7 × 5–8 cm, densely yellow-brown pilose; branches 4 or 5 pairs; bracts awl-shaped, 2–3 mm. Calyx cup-shaped, ca. 2 mm, slightly 2-lipped, 5-dentate, pubescent. Corolla purplish in bud, becoming greenish white to greenish, ca. 4 mm, slightly 2-lipped, 4-lobed; outside pubescent, white villous in throat; lower lip 3-lobed, lobes oblong, subequal; upper lip subrounded. Stamens exerted. Ovary pubescent, apically yellowish glandular. Style ca. 6 mm. Fruit red, globose, 4–7 × 4–5 mm. Fl. and fr. Mar-Jun.

• Mixed forests on mountain slopes; 400–900 m. Hainan.

Allied to *Premna subscandens* but differs in having yellow-brown branches with distinctly yellowish rust colored lenticels, leaf blades usually oblong with both surfaces rust colored pubescent, and ovaries sparsely tomentose.

13. *Premna octonervia* Merrill & Metcalf, J. Arnold Arbor. 20: 354. 1939.

八脉臭黄荆 ba mai xiu huang jing

Shrubs or trees, erect; bark gray. Branchlets terete, with small rounded to elliptic lenticels, sparsely puberulent when young, glabrescent. Petiole 1–2.5 cm; leaf blade black and shiny when dry, ovate-oblong to ovate, 8–12 × 4–6 cm, papery, subglabrous to pubescent along veins, base broadly cuneate to subrounded, margin entire, apex acuminate to acute; veins 4 or 5 pairs, curve apically along margins and anastomose. Inflorescences 3–7 × 5–13 cm, sparsely puberulent; branches 3–5 pairs; bracts linear, ca. 6 mm. Calyx cup-shaped, ca. 1.5 mm, slightly 2-lipped, 5-dentate, pubescent and subglandular when young, glabrescent. Corolla ca. 4 mm, slightly 2-lipped, 4-lobed; lower lip 3-lobed, lobes subequal or middle lobe slightly longer; upper lip entire or emarginate, outside subglabrous, long villous in throat with hairs usually exerted. Ovary glabrous, without glands. Style longer than stamens. Fruit obovate to globose, 3–5 × 3–4 mm, tuberculate. Fl. and fr. Aug-Nov.

• Mixed forests on mountain slopes or in open places; 200–800 m. Hainan.

14. *Premna latifolia* Roxburgh, Fl. Ind. ed. 1832, 3: 76. 1832.

大叶豆腐柴 da ye dou fu chai

Shrubs or small trees. Branchlets dark brown, striate, pubescent when young, subglabrescent. Petiole 1–2 cm, yellow pilose; leaf blade ovate-oblong, ovate, subrounded, or cordate, 5–20 × 4–10 cm, papery, abaxially densely yellow pilose, base cuneate, rounded, or cordate, apex acuminate to obtuse; veins 5–8 pairs, reticulate veins obscure. Inflorescences 3–6 × 4–8 cm, densely pubescent; bracts linear, 1–3 mm, deciduous. Calyx ca. 2 mm, slightly 2-lipped, 5-dentate, outside minutely hirsute, inside glabrous. Corolla dusty yellow, slightly 2-lipped, 5-lobed, outside puberulent, villous in throat. Stamens equal or longer than style, exerted; anthers black. Fruit black, tuberculate, glabrous. Fl. late spring to summer.

500–800 m. S Yunnan [Cambodia, India, Indonesia, Laos, Myanmar, Philippines, Vietnam].

- 1a. Leaf blade base rounded to cordate ... 14a. var. *latifolia*
1b. Leaf blade base cuneate 14b. var. *cuneata*

14a. *Premna latifolia* var. *latifolia*

大叶豆腐柴 da ye dou fu chai

Leaf blade 5–14 × 4–10 cm, base rounded to cordate, adaxially brown-black when dry.

Mixed evergreen forests; 600–700 m. S Yunnan [India, Indonesia, Laos, Myanmar, Philippines].

Timber.

14b. *Premna latifolia* var. *cuneata* C. B. Clarke in J. D. Hooker, Fl. Brit. Ind. 4: 578. 1885.

楔叶豆腐柴 xie ye dou fu chai

Premna latifolia var. *viburnoides* (Wallich ex Schauer) C. B. Clarke; *P. viburnoides* Wallich ex Schauer.

Leaf blade 13–20 × 10 cm, base cuneate, adaxially blue-black when dry.

Near farm houses; 500–800 m. S Yunnan [Cambodia, India, Indonesia, Myanmar, Philippines, Vietnam].

15. *Premna flavescens* Buchanan–Hamilton ex C. B. Clarke in J. D. Hooker, Fl. Brit. Ind. 4: 578. 1885.

淡黄豆腐柴 dan huang dou fu chai

Shrubs. Branchlets with white linear lenticels, pilose when young. Petiole 2–3 cm; leaf blade ovate-lanceolate to ovate, ca. 15 × 6.5 cm, papery, abaxially pilose, adaxially minutely hirsute, base obtuse to subcordate, apex acuminate to acute. Inflorescences 6–17 cm across, usually rust colored pilose; bracts linear, ca. 6 mm. Calyx ca. 2.5 mm, 5-dentate, pilose. Corolla greenish white, 4–5 mm, 4-lobed, both surfaces puberulent, densely villous in throat. Stamens and style exerted. Fruit black when dry, 3–5 mm in diam. Fl. and fr. summer.

Open forests on mountain slopes in calcareous soil; 100–1300 m. S Guangdong, W Guangxi, S Yunnan [India, Indonesia, Malaysia, Vietnam].

16. *Premna fulva* Craib, Bull. Misc. Inform. Kew 1911: 442. 1911.

黄毛豆腐柴 huang mao dou fu chai

Premna fortunati Dop; *P. longipila* P'ei.

Shrubs or trees, sometimes climbing. Branchlets yellow villous when young, subglabrescent. Petiole 1.5–5.5 cm; leaf blade ovate-lanceolate, elliptic, oblong-ovate, ovate, or subrounded, 4–15 × 3–10 cm, papery, abaxially densely tomentose, adaxially yellow villous especially on veins, base cuneate and oblique, subrounded, or subcordate, margin entire, repand, or serrate, apex acuminate, acute, or rarely subrounded to emarginate; veins 5–7 pairs, abaxially elevated. Inflorescences 2.5–6(–10) × 4–9(–17) cm; branches 5 or 6 pairs, spreading; bracts linear to rarely linear-lanceolate, densely pubescent. Calyx 2–2.5 mm, slightly 2-lipped, 5-dentate, outside pubescent. Corolla greenish white, 4–5 mm, tube ca. 2 mm, slightly 2-lipped, lower lip 3-lobed, upper lip rounded to emarginate, throat pilose, outside puberulent to subglabrous. Stamens as long as style; anthers brown. Ovary apically sparsely pubescent. Fruit black, ovate to globose, 3–5(–6) mm in diam., tuberculate.

Mixed evergreen forests; 500–1200 m. SW Guangxi, S Guizhou, S Yunnan [Laos, Thailand, Vietnam].

Allied to *Premna crassa* and *P. flavescens* but differs in having young branchlets, petioles, and leaves yellow villous with long usually spreading hairs.

17. *Premna straminicaulis* C. Y. Wu, Fl. Yunnan. 1: 426. 1977.

草黄枝豆腐柴 cao huang zhi dou fu chai

Shrubs ca. 2 m tall. Branchlets shiny, striate, pilose and glandular when young, glabrescent. Petiole 3–6 cm, glabrous; leaf blade green, broadly elliptic to ovate, 6–12 × 6–8 cm, membranous, adaxially glabrous or puberulent only along veins, white glandular, base rounded and slightly oblique,

margin serrate, apex acuminate to rarely caudate; veins 5 or 6 pairs, abaxially elevated. Inflorescences 2.5–3 × 3–3.5 cm, sparsely pubescent, densely white glandular; peduncle 1–1.5 cm; bracts linear, ca. 2 mm. Calyx 5-dentate, densely white glandular, sparsely puberulent to subglabrous. Corolla greenish white, outside pubescent, inside glabrous except for a ring of hairs at throat; lobes 4, rounded. Anthers purple-brown, subrounded. Fruit oblong, glabrous. Fl. May.

• Moist places; 1000 m. Yunnan (Ruili Xian).

18. *Premna tapintzeana* Dop, Bull. Soc. Bot. France 70: 836. 1923.

大坪子豆腐柴 da ping zi dou fu chai

Shrubs 1–4 m tall. Branches spreading, shiny, yellow-brown, puberulent when young, glabrescent. Petiole 1–5 cm; leaf blade ovate, subrounded, or cordate, 7–15 × 4–10 cm, papery, base rounded to cordate, margin subentire to slightly dentate to subentire, apex acuminate to obtuse; veins 6 or 7 pairs, abaxially elevated, 3-veined near base. Inflorescences 3–4(–7) × 6–8 cm, puberulent; bracts lanceolate, ca. 3 mm. Calyx ca. 3 mm, puberulent; teeth 5, obtuse. Corolla greenish white, villous in throat. Stamens not exerted. Ovary flattened globose, glabrous. Style shorter than corolla. Fruit dark purple to black, obovate, tuberculate.

• Mixed forests; 1700–2400 m. NW Yunnan.

Allied to *Premna crassa* but differs in having calyces equally 5-dentate and corolla tubes slender and shorter than calyx.

19. *Premna crassa* Handel-Mazzetti, Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz. 58: 230. 1921.

石山豆腐柴 shi shan dou fu chai

Shrubs 1–5 m tall, nearly climbing. Branches brown; branchlets with small yellow lenticels. Leaves unequal in pairs, easily deciduous; petiole robust, 0.5–6 cm; leaf blade elliptic to ovate, (3–)5–11 × (2–)4–8 cm, papery, abaxially tomentose, adaxially pubescent, base rounded to subcordate and oblique, margin entire or dentate below middle, apex acuminate to obtuse; veins (4 or) 5–7 pairs, abaxially elevated, 3-veined near base. Inflorescences 1.5–5(–6) cm across; peduncle 0.5–1.8 cm; bracts linear-lanceolate, 4–8 mm. Calyx campanulate, 2–3 mm, slightly 2-lipped, 5-dentate, outside minutely hirsute and glandular. Corolla white or yellowish green, tube longer than calyx, slightly 2-lipped, lower lip deeply 3-lobed, upper lip slightly 2-lobed, villous in throat. Anthers brown. Ovary glabrous. Style as long as stamens. Fruiting calyx ca. 5 mm in diam. Fruit dark black when mature, obovate to globose, 2–4 mm in diam., tuberculate.

500–1800 m. W Guangxi, SW Guizhou, Yunnan [Vietnam].

1a. Corolla white 19a. var. *crassa*
1b. Corolla yellowish green 19b. var. *yui*

19a. *Premna crassa* var. *crassa*

石山豆腐柴 shi shan dou fu chai

Branchlets, leaves, and inflorescences yellow-brown pubescent, glabrescent. Corolla white. Fl. May, fr. Oct.

Mixed forests on mountain slopes in calcareous soil; 500–1600 m. W Guangxi, SW Guizhou, SE Yunnan [Vietnam].

Medicinal.

19b. *Premna crassa* var. *yui* Moldenke, *Phytologia* 18: 421. 1967.

凤庆豆腐柴 feng qing dou fu chai

Branchlets, leaves, and inflorescences subglabrous. Corolla yellowish green. Fl. Jun.

• Open forests; 1500–1800 m. Yunnan (Fengqing Xian and Longling Xian).

20. *Premna glandulosa* Handel-Mazzetti, *Akad. Wiss. Wien, Math.-Naturwiss. Kl., Anz.* 58: 232. 1921.

腺叶豆腐柴 xian ye dou fu chai

Shrubs 1–1.5 m tall; branchlets, petioles, and inflorescences densely circinate pubescent when young, glabrescent. Branches slender, erect to horizontal; branchlet brown with sparse small round lenticels. Leaves easily deciduous; petiole slender, 0.5–1.5 mm; leaf blade ovate, 2.5–4.5(–5) × 1.5–3(–4) cm, submembranous, minutely hirsute on veins and purple-red glandular, base broadly rounded to subcordate and usually oblique, margin serrulate, apex acuminate, obtuse, or emarginate; veins 3 or 4 pairs, abaxially with densely pitted reticulate veins. Inflorescences 1.5–2.5 cm across; peduncle 0.6–1.7 cm; bracts linear to lanceolate, 4–5 mm. Calyx campanulate, 1.5–2 mm, scaly pubescent, glandular; teeth 5, narrowly triangular to ovate. Corolla violet to pinkish, 4.5–5 mm, 2-lipped, lower lip ca. 1/2 as long as upper lip, outside white puberulent, inside glabrous but white villous in throat. Stamens as long as style, shorter than corolla. Ovary globose, apically glandular. Fl. Jul.

• Roadsides; 1500–1900 m. Yunnan (Dayao Xian and Chuxiong Xian).

21. *Premna henryana* (Handel-Mazzetti) C. Y. Wu, *Fl. Yunnan*. 1: 433. 1977.

蒙自豆腐柴 meng zi dou fu chai

Premna steppicola Handel-Mazzetti var. *henryana* Handel-Mazzetti, *Symb. Sin.* 7: 902. 1936.

Shrubs. Branchlets dark brown, robust, short, striate, with white lenticels, dusty yellow puberulent when young, glabrescent. Petiole 1–1.5 cm, pilose; leaf blade ovate to broadly ovate, 4–7 × 2–4.5 cm, papery, abaxially gray puberulent and deep red glandular, adaxially puberulent and orange glandular, base rounded to subcordate, margin crenate to basally subentire, apex acute to acuminate; veins 3 or 4 pairs, adaxially slightly elevated. Inflorescences ca. 1.5 cm across, pilose. Calyx 5-dentate, teeth triangular-lanceolate, pilose, deep red glandular. Corolla ca. 6 mm, 2-lipped, outside puberulent, deep red glandular, white villous in throat. Ovary basally pilose, glandular.

• Mixed forests; 1300–1500 m. SW Sichuan, NW Yunnan.

Medicinal.

22. *Premna punicea* C. Y. Wu, *Fl. Yunnan*. 1: 433. 1977.

玫红豆腐柴 mei hong dou fu chai

Shrubs; branchlets, petioles, and peduncles pilose when young, glabrescent. Branchlets dark gray, slender, short, with tuberculate lenticels. Petiole ca. 5 mm, circinate pilose; leaf blade oblong, 2–3.5 × 1–1.5 cm, papery, minutely hirsute and orange glandular, base rounded, margin subentire or only serrate at middle, apex slightly acuminate to acute or rarely

obtuse to slightly emarginate; veins 2 or 3 pairs, abaxially slightly elevated. Inflorescences ca. 1 cm across; peduncle ca. 5 mm. Calyx campanulate, ca. 8 mm, deeply 5-dentate below middle, minutely hirsute and orange glandular; teeth linear-lanceolate, ca. 6 mm. Corolla pinkish, 6–8 mm, slightly 2-lipped; tube glabrous outside, white villous in throat, lobes 4, outside white pilose and orange glandular. Ovary obovate, pilose, apically white glandular. Style robust, ca. 4 mm, slightly puberulent. Fl. Jul-Aug.

• Mixed forests; 1600 m. Yunnan (Heqing Xian).

23. *Premna rubroglandulosa* C. Y. Wu, *Fl. Yunnan*. 1: 431. 1977.

红腺豆腐柴 hong xian dou fu chai

Shrubs ca. 1 m tall; branchlets, petioles, and peduncles yellowish brown glandular when young, glabrescent. Branchlets slender, with sparse gray elliptic lenticels. Petiole 1–1.5 cm; leaf blade ovate, 3–6.5 × 2–4 cm, papery, adaxially sparsely pubescent when young, densely orange glandular puberulent on veins, base rounded to subcordate, margin dentate, apex acuminate to acute, veins 3 or 4 pairs, 3-veined at base. Inflorescences 1.5–2.5 cm; peduncle ca. 1 cm. Calyx 6–7 mm, outside densely puberulent, inside sparsely puberulent, both surfaces orange glandular; teeth 5, narrowly triangular, ca. 2 × as long as tube. Fruit black, obovate, ca. 4 × 3 mm, 4-veined when dry, glabrous, without glands.

• Mountain slopes along roadsides; 1100 m. SW Yunnan.

24. *Premna urticifolia* Rehder in Sargent, *Pl. Wilson*. 3: 458. 1917.

麻叶豆腐柴 ma ye dou fu chai

Shrubs 1–3 m tall. Branchlets with small elliptic and round lenticels, pilose when young, glabrescent. Petiole 1–4 cm, circinate pubescent; leaf blade ovate, 3–9 × 2–6 cm, submembranous, sparsely pubescent, glandular, usually pitted by deciduous glands, base rounded to cordate, apex acuminate. Inflorescences subglobose, 1.5–2.5 × 2–3.5 cm; peduncle 1–2.6 cm; bracts linear, ca. 6 mm, densely pubescent. Pedicel densely pilose, glandular. Calyx cup-shaped, ca. 2 mm, slightly 2-lipped, both surfaces pilose and glandular; teeth 5, obtusely triangular, 0.5–0.8 mm. Corolla pinkish, ca. 6 mm, slightly 2-lipped, 4-lobed, outside pilose and glandular, villous in throat; upper lip entire, covering other 3 lobes in bud. Ovary glabrous, apically yellow and purple-red glandular. Fruit black, ovate, 3–5 × 2–4 mm, longer than calyx. Fl. and fr. Jul-Sep.

• Mixed forests on mountain slopes; 1600 m. S Yunnan.

Medicinal.

Allied to *Premna glandulosa* and *P. rubroglandulosa* but differs in having yellow glandular leaf blades pitted by deciduous glands.

25. *Premna parvilimba* P'ei, *Mem. Sci. Soc. China* 1(3): 62. 1932.

小叶豆腐柴 xiao ye dou fu chai

Celastrus yunnanensis H. Léveillé (1916), not *P. yunnanensis* W. Smith (1916), not *P. yunnanensis* Dop (1923).

Shrubs. Branchlets and petioles densely pubescent. Branchlets slender. Petiole terete, 2–6 mm; leaf blade lanceolate to ovate-lanceolate, 0.5–3.8 × 0.3–1.1 cm, papery,

sparsely pubescent, base rounded, margin apically sparsely serrate, apex obtuse; veins 3 or 4 pairs, abaxially elevated. Inflorescences to 2.5 cm across, few to 25-flowered, densely pubescent, glandular; peduncle ca. 5 mm; bracts lanceolate, ca. 4 mm. Pedicel ca. 2 mm. Calyx tube ca. 2 mm, teeth 5, pubescent and glandular but more densely so outside. Corolla pinkish, ca. 6 mm, villous in throat, 2-lipped, lower lip concave, outside pubescent and glandular. Stamens slightly exerted. Style glabrous. Ovary with few hairs, glandular.

- Valleys; 400 m. Yunnan (Jinsha Jiang valley).

Allied to *Premna steppicola* but differs in having leaf blades lanceolate to ovate-lanceolate, bracts lanceolate, and stamens exerted.

26. *Premna steppicola* Handel-Mazzetti, Symb. Sin. 7: 902. 1936.

草坡豆腐柴 cao po dou fu chai

Shrubs. Branchlets, petioles, and inflorescences densely puberulent when young, glabrescent. Branchlets slender. Petiole 4–5 mm; leaf blade broadly ovate, 1.5–3.5 × 1.2–2 cm, abaxially densely puberulent along veins, adaxially minutely hirsute, base subrounded, margin slightly dentate near base, apex acuminate, veins 3 or 4 pairs. Inflorescences ca. 1.5–2 cm across; bracts linear, densely white pilose. Calyx campanulate, 3–4 mm; teeth 5, lanceolate, ca. 2/3 calyx length, sparsely minutely hirsute, densely glandular. Corolla ca. 6 mm, sparsely minutely hirsute, densely glandular, villous in throat, slightly 2-lipped, lower lip 3-lobed, upper lip emarginate. Stamens nearly included. Ovary apically glandular. Fruit black, ca. 2.5 mm in diam. Fr. Oct.

- Valleys or waste places; 1400–1500 m. SW Sichuan, NW Yunnan.

Medicinal.

27. *Premna oligantha* C. Y. Wu, Fl. Yunnan. 1: 434. 1977.

少花豆腐柴 shao hua dou fu chai

Shrubs 30–100 cm tall, much branched. Branchlets grayish when young, becoming dark gray, dark striate. Petiole slender, 1–2 mm, puberulent; leaf blade ovate-lanceolate, ovate, or subrounded, (2.5–)5–6 × (0.3–)1–1.5 cm, abaxially puberulent on veins, adaxially dark green and minutely hirsute, yellow glandular, base cuneate to subrounded, margin entire or serrate, apex obtuse; veins 2 or 3 pairs, abaxially elevated. Inflorescences 2–4(–6)-flowered; peduncle 1–2 mm; bracts linear. Calyx ca. 5 mm, 5-dentate to middle, puberulent, glandular. Corolla purplish, ca. 6 mm, 2-lipped, tube outside glabrous and glandular; lower lip with 3 rounded lobes; upper lip rounded, lobes densely puberulent, glandular. Ovary black-brown, obovate, ca. 1.5 mm, glabrous, apically glandular. Style capillary, puberulent. Fruit black. Fl. and fr. Jun–Oct.

- Dry mountain slopes; 2100–3200 m. Sichuan, SE Xizang, NW Yunnan.

28. *Premna acutata* W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 119. 1916.

尖齿豆腐柴 jian chi dou fu chai

Shrubs 1–4 m tall. Branchlets sparsely lenticellate, dusty yellow tomentose when young, becoming yellow-brown and glabrous. Leaves pairs unequal; petiole 4–12 mm, pubescent, glandular; leaf blade ovate-lanceolate to ovate, 4–8 × 2–4 cm,

glandular, abaxially yellow-green and subglabrous, adaxially dark green and minutely hirsute especially on veins, base cuneate to subrounded, margin deeply and sharply serrate, apex acuminate to caudate-acuminate; veins 3 or 4 pairs, 3-veined at base. Inflorescences subsessile, 1.5–2.5 cm across. Calyx 5–8 mm, tube ca. 1.5 mm, deeply 5-dentate, minutely hirsute and yellow glandular. Corolla rose red, slightly longer than calyx, 2-lipped, outside puberulent and glandular, inside villous. Stamens nearly as long as corolla. Ovary with a few hairs, glandular. Fruit black, ovate-globose, ca. 4 mm in diam. Fl. and fr. summer-autumn.

- Thicket edges; 2700–3000 m. SW Sichuan, NW Yunnan.

Species 28–33 in this account are very similar, and their status requires further investigation. Key characters such as flower color and corolla indumentum show more variation than has traditionally been accepted.

29. *Premna mekongensis* W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 120. 1916.

澜沧豆腐柴 lan cang dou fu chai

Shrubs ca. 1 m tall, erect. Branchlets yellow-brown, becoming dark brown, with striate lenticels, grayish circinate tomentellous when young. Petiole ca. 1 cm, grayish puberulent; leaf blade ovate-lanceolate to ovate, 0.8–5.5 × 0.4–3 cm, papery, abaxially densely tomentellous, adaxially grayish puberulent, base rounded, margin subentire, repand, or serrulate, apex acuminate to obtuse. Inflorescences few to 12-flowered, 1–2.5 cm across; peduncle subsessile or very short, grayish pilose; bracts linear, densely pilose. Pedicel very short, grayish pilose. Calyx cup-shaped, 6–7 mm, 5-dentate basally to middle, densely grayish pilose, sparsely yellow glandular; teeth linear-lanceolate, subequal. Corolla yellow or white, ca. 8 mm, slightly longer than calyx, white villous in throat, 2-lipped, tube outside glabrous; lower lip 3-lobed; upper lip rounded, emarginate; lobes puberulent, sparsely glandular. Stamens included; filaments glabrous. Ovary ovate, glabrous. Fruiting calyx ca. 1 cm. Fruit black, globose, ca. 4 mm in diam., glabrous, apically glandular. Fl. and fr. Jun–Sep.

- 1800–2700 m. NW and W Yunnan.

The corolla exterior of the holotype of *Premna mekongensis* is distinctly hairy.

- 1a. Leaf blade 2.5–5.5 × 2–3 cm 29a. var. *mekongensis*
- 1b. Leaf blade 0.8–2 × 0.4–0.7 cm 29b. var. *meiophylla*

29a. *Premna mekongensis* var. *mekongensis*

澜沧豆腐柴 lan cang dou fu chai

Leaf blade 2.5–5.5 × 2–3 cm. Inflorescences 6–12-flowered; peduncle short.

- Mixed forests on mountain slopes; 1800–2700 m. NW and W Yunnan.

29b. *Premna mekongensis* var. *meiophylla* W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 120. 1916.

小叶澜沧豆腐柴 xiao ye lan cang dou fu chai

Branchlets more slender than in var. *mekongensis*. Leaf blade 0.8–2 × 0.4–0.7 cm. Inflorescences subsessile, few flowered.

- Grasslands; 2100–2400 m. Yunnan (Lijiang Xian).

30. *Premna yunnanensis* W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 120. 1916.

云南豆腐柴 yun nan dou fu chai

Shrubs 0.8–2 m tall. Branchlets grayish minutely tomentose when young, glabrescent. Petiole terete, 5–10 mm; leaf blade ovate-lanceolate to ovate, 2–6 × 1.5–3 cm, papery, golden glandular, abaxially densely gray circinate pilose, adaxially dark green and pilose, base subrounded and slightly oblique, margin subentire to serrate, apex acuminate to acute. Calyx ca. 4 mm, deeply 5-dentate below middle, teeth narrowly triangular, both surfaces pubescent and golden glandular. Corolla pinkish to purple, ca. 6 mm, tube subglabrous but densely villous in throat, 2-lipped; lower lip 3-lobed; upper lip ca. 4 mm, subrounded; lobes puberulent, outside glandular. Stamens slightly exerted; filaments glandular but villous at base. Ovary obovate, glabrous, apically glandular. Fruit black, 3–5 × 2–3 mm. Fl. and fr. May-Sep.

- Grasslands; 1800–2200 m. SW Sichuan, W Yunnan.

Allied to *Premna mekongensis* but differs in corollas pinkish to purple, fruit as long as fruiting calyces, and calyx teeth narrowly triangular. Some of the *P. yunnanensis* paratype collections of G. Forrest are described as having yellowish flowers but are otherwise indistinguishable from the holotype.

31. *Premna velutina* C. Y. Wu, Fl. Yunnan. 1: 428. 1977.

黄绒豆腐柴 huang rong dou fu chai

Shrubs ca. 50 cm tall. Branches, petioles, and axis of inflorescences densely dusty villous. Branches terete, striate. Petiole robust, (1–)2–3 cm; leaf blade cordate, (2.5–)6–9 × (1–)3.5–6 cm, abaxially densely dusty tomentose and glandular, adaxially dark green, densely dusty yellow villous, orange glandular, margin serrate, apex acuminate to acute; veins 5 or 6 pairs, curve apically along margins and anastomose. Inflorescences capitate to nearly conical; peduncle ca. 5 mm; bracts linear lanceolate, densely pilose. Calyx ca. 4 mm, slightly 2-lipped, lower lip 2-dentate with lanceolate teeth, upper lip 3-dentate with triangular teeth, outside minutely hirsute and orange. Corolla yellow, ca. 5 mm; tube glabrous outside, dark villous in throat; lower lip 3-lobed; upper lip rounded, lobes outside glandular and puberulent. Ovary ca. 1 mm, obovate, glabrous, glandular. Style glabrous. Fruit brownish, oblong, 3–4 mm. Fl. and fr. Jun-Sep.

- Mixed forests; 1500 m. SW Yunnan.

32. *Premna tenii* P'ei, Mem. Sci. Soc. China 1(3): 66. 1932.

圆叶豆腐柴 yuan ye dou fu chai

Shrubs. Branches, branchlets, leaves, and inflorescences densely pubescent. Petiole ca. 3 mm, densely circinate pilose; leaf blade broadly ovate to subrounded, 2–8 × 0.9–5.7 cm, membranous, densely pubescent, sparsely glandular, base cuneate to rounded, margin subentire, undulate, or crenate, apex obtuse to rounded, veins 3–6 pairs. Inflorescences subsessile. Calyx deeply 5-dentate, teeth ca. 6 mm, both surfaces villous and sparsely glandular. Corolla ca. 7 mm, outside villous, throat villous and sparsely glandular. Stamens slightly exerted; filaments and style glabrous. Ovary with few hairs, glandular.

- Mixed forests; 1300–1600 m. Yunnan (Dayao Xian).

Allied to *Premna acutata* but differs in leaf blade shape and margins.

33. *Premna subcapitata* Rehder in Sargent, Pl. Wilson. 3: 458. 1917.

近头状豆腐柴 jin tou zhuang dou fu chai

Premna pilosa P'ei.

Shrubs 1–2 m tall. Branches brown to brownish, with elliptic to rounded yellowish lenticels, yellowish pilose when young, subglabrescent. Petiole 4–10 mm; leaf blade ovate-oblong to ovate, 2.5–8.5 × 1.5–4.8 cm, abaxially tomentose and glandular, adaxially dark yellow-green pilose and yellow glandular, base rounded to truncate, margin serrate except for apex and base, apex acuminate to acute. Inflorescences 0.6–2.5 × 1–3.5 cm; peduncle 0.5–2 cm; bracts linear to sub-lanceolate, 5–10 mm. Calyx cup-shaped, ca. 4 mm, deeply 5-dentate, both surfaces pubescent and yellowish glandular; teeth lanceolate to narrowly triangular, ca. 2 × 1 mm. Corolla yellow-green to greenish, ca. 6 mm, outside puberulent and glandular, throat villous, 2-lipped, tube ca. 3 mm, lower lip 3-lobed with lobes rounded, upper lip entire. Stamens slightly exerted. Ovary sparsely puberulent, densely glandular. Style ca. 6 mm. Fruit dark black, ovate, 3–4 × 2–3 mm, sparsely pubescent, yellowish glandular. Fl. and fr. May-Aug.

- Mixed forests on mountain slopes; 2600 m. SW Sichuan, NE Yunnan.

34. *Premna fohaiensis* P'ei & S. L. Chen ex C. Y. Wu, Fl. Yunnan. 1: 436. 1977.

勐海豆腐柴 meng hai dou fu chai

Shrubs or trees. Branchlets, petioles, and inflorescences yellow-brown circinate tomentose. Branchlets with small lenticels, becoming grayish yellow and glabrous. Petiole 3–4.5 cm; leaf blade elliptic-lanceolate, elliptic, or broadly ovate, 14–18 × 7–9.5 cm, papery, abaxially tea brown when dry and tomentose when young, adaxially dark brown when dry and densely minutely hirsute, base rounded to truncate, margin entire, apex acuminate; veins 7–9 pairs, curve apically along margins and slightly anastomose. Inflorescences 5–8 × 8–13 cm. Calyx cup-shaped, ca. 1 cm, slightly 2-lipped, pilose, 4-toothed; teeth ovate, with small yellow glands. Corolla yellow-green, ca. 2 mm; tube ca. 1.5 mm, glabrous except for a ring of hairs inside above throat; lobes 4, oblong, spreading. Stamens and style exerted. Ovary glabrous, apically glandular. Fruit black, ovate, sparsely yellowish glandular. Fl. and fr. May-Jul.

- Forests; 1500–1800 m. S Yunnan.

35. *Premna szemaensis* P'ei, Mem. Sci. Soc. China 1(3): 76. 1932.

思茅豆腐柴 si mao dou fu chai

Trees (4–)7–12 m tall. Branchlets, petioles, and inflorescences brown tomentose. Branchlets lenticellate, nodes usually with a rounded or half rounded leaf scar, with gland-tipped hairs when young, glabrescent. Petiole terete, 0.5–6 cm; leaf blade broadly ovate to ovate-lanceolate, 8–18 × 6–14 cm, papery, abaxially densely brown tomentose, adaxially sparsely pubescent, base broadly cuneate to subrounded, margin entire or irregularly serrate, apex acuminate to acute; veins 6–8 pairs, abaxially elevated. Inflorescences 5–12 × 7–23 cm; peduncle 1.5–3 cm; bracts linear, 4–15 mm. Calyx campanulate, ca. 1.5 mm, subtruncate to slightly 2-lipped; lips usually slightly 2-dentate, pubescent,

yellow glandular. Corolla greenish to yellowish, 3.5–4 mm, outside puberulent, inside glabrous except villous at throat. Stamens and style exerted; filaments puberulent at base. Ovary glabrous, apically yellow glandular. Fruit black, obovate to rounded, 5–7 × 4–5 mm. Fl. and fr. Jun-Sep.

- Open forests; 500–1500 m. S Yunnan.

Medicinal.

Allied to *Premna fohainensis* but differs in having subtruncate to slightly 2-lipped calyces, lips usually slightly 2-dentate, and branchlet nodes with a rounded or half rounded leaf scar.

36. *Premna paisehensis* P'ei & S. L. Chen in S. L. Chen, Fl. Reipubl. Popularis Sin. 65(1): 211. 1982.

百色豆腐柴 bai se dou fu chai

Trees ca. 13 m tall; bark gray. Branchlets green pubescent when young, becoming brown, glabrous, and striate. Leaf blade narrowly elliptic to elliptic, 9–15 × 3–6.5 cm, submembranous, abaxially yellowish green, adaxially minutely hispid, densely brown tomentose, and yellowish glandular, base obtuse to broadly cuneate, margin entire or slightly irregularly undulate, apex acute to subacuminate; veins 5 or 6 pairs, abaxially elevated. Inflorescences lax, spreading, dichotomous, 12–15 × 10–20 cm; peduncle 4–6 cm, densely yellow-brown pubescent; bracts linear, 2–9 mm. Fruiting calyx subtruncate, outside sparsely pubescent and glandular. Fruit purple, globose to ovate, 5–6 × 4–5 mm, pubescent, glandular. Fr. Jul-Aug.

- Mixed forests on mountain slopes; 1000 m. Guangxi (Bose Xian).

Allied to *Premna szemaensis* but differs in having narrower submembranous leaf blades.

37. *Premna scoriarum* W. Smith, Notes Roy. Bot. Gard. Edinburgh 12: 219. 1920.

腾冲豆腐柴 teng chong dou fu chai

Trees 20 m tall. Branchlets black when young, becoming gray-brown, terete, with sparse linear lenticels. Petiole 1.5–3.5 cm; leaf blade narrowly elliptic, ovate-lanceolate, or ovate, 10–15(–21) × 5–9(–10) cm, thickly papery, both surfaces glabrous and with elevated veins, abaxially green, adaxially shiny and dark green but black when dry, veins 6 or 7 pairs. Inflorescences lax corymbs, 8–10 × 14 cm, 3–5 × dichotomously branched; peduncle ca. 3 cm, sparsely puberulent; bracts linear-lanceolate, ca. 5 mm, sparsely puberulent. Calyx campanulate, ca. 1 mm, 4-dentate to middle, outside puberulent; teeth oblong, subequal, apex obtuse. Fruit dark green, oblong-obovate, 2.5–3(–4) mm.

Dense forests; 1300–1700 m. W Yunnan [Myanmar].

38. *Premna scandens* Roxburgh, Fl. Ind. ed. 1832, 3: 82. 1832.

藤豆腐柴 teng dou fu chai

Plants climbing. Branchlets and inflorescences sparsely puberulent when young, glabrescent. Branchlets terete, brown, lenticellate. Petiole black, 1–3.5 cm, glabrous; leaf blade lanceolate, elliptic, ovate, or rarely obovate, 10–16 × (4–)5–8 cm, abaxially brown when dry, midvein elevated, reticulate veins slightly evident, adaxially black and shiny, base rounded to cordate and oblique, apex abruptly acuminate to acute. Inflorescences spreading, 7–10 × (9–)20–30 cm;

branches 5 or 6 pairs, puberulent; bracts lanceolate, 3–6 mm. Flowers subsessile, 4–5 mm. Calyx cup-shaped, ca. 1.5 mm, truncate to slightly 2-lipped; lips slightly 2-dentate, puberulent. Corolla grayish yellow, ca. 3 mm; tube ca. 2 mm, villous in throat, outside glabrous; lobes 4, subequal, apex obtuse to rounded. Stamens as long as style, slightly exerted. Ovary glabrous. Fruit blue-black, obovate, 7–8 × 4–6 mm, tuberculate. Fl. and fr. May-Jul.

Mixed forests; 500 m. Yunnan (Mengla Xian) [Bangladesh, Bhutan, India, Myanmar, Vietnam].

39. *Premna odorata* Blanco, Fl. Filip. 488. 1837.

毛鱼臭目 mao yu xiu mu

Premna vestita Schauer.

Trees, small. Branchlets pubescent. Petioles 3–7 cm; leaf blade oblong to ovate, 10–12(–20) × 6–7 cm, base rounded to somewhat cordate, abaxially uniformly densely softly pubescent, margin entire or crenulate, apex acute, veins 6 pairs. Inflorescences 8–20 cm wide. Calyx 2-lipped, 5-lobed. Corolla greenish white to nearly white, 4–5 mm. Fruit dark purple, globose, ca. 4 mm in diam.

Thickets and forests near seashore. N and S Taiwan [Philippines].

Specimens of this species have not been seen by the authors. Typical material from Philippines reportedly has leaf blades ovate to broadly ovate and to 20 cm long.

40. *Premna serratifolia* Linnaeus, Mant. Pl. 253. 1771.

伞序臭黄荆 san xu xiu huang jing

Cornutia corymbosa N. L. Burman; *Premna corymbosa* Rottler & Willdenow; *P. corymbosa* (N. L. Burman) Merrill (1917), not Rottler & Willdenow (1803); *P. integrifolia* Linnaeus; *P. integrifolia* var. *obtusifolia* (R. Brown) P'ei; *P. obtusifolia* R. Brown.

Shrubs or trees, 1–8 m tall, erect or rarely climbing. Branchlets with elliptic yellowish lenticels, densely pubescent when young, subglabrescent. Petiole 0.3–5 cm, puberulent; leaf blade oblong to broadly ovate, 3–15 × 2.5–9.5 cm, papery, subglabrous or pubescent only along veins, base broadly cuneate, rounded, or truncate, margin entire, slightly undulate, or crenate, apex acute to rarely acuminate or obtuse. Inflorescences 1.5–15 × 2.5–24 cm; peduncle 0.8–3 cm; bracts linear to lanceolate, to 6 mm, puberulent. Calyx cup-shaped, 1.5–3 mm, 2-lipped, lower lip subentire to shortly 3-dentate, upper lip longer than lower lip and 2-dentate, outside puberulent and yellow glandular. Corolla yellowish green, outside glandular, villous in throat, slightly 2-lipped; lower lip 3-lobed, lobes subequal or middle lobe slightly longer and broader; upper lip entire or emarginate. Ovary glabrous, apically glandular. Style 3.5–4 mm. Fruit globose, 2–4 mm in diam. Fl. and fr. Apr-Oct.

Mixed and open forests on mountain slopes and along streams; 100–300 m. Guangdong, Guangxi, Taiwan [S and SE Asia, Australia, Pacific Islands].

41. *Premna hainanensis* Chun & How, Acta Phytotax. Sin. 7: 77. 1958.

海南臭黄荆 hai nan xiu huang jing

Shrubs 1–3 m tall, erect to climbing. Branchlets and inflorescences mealy when young, subglabrescent. Branchlets brown striate, conspicuously lenticellate. Petiole 0.8–1.2 cm; leaf blade dark green when dry, elliptic to ovate-elliptic, 4–9 × 2–4.5 cm, papery to subleathery, shiny, glabrous or pubescent along veins, midvein abaxially raised and adaxially impressed, base broadly cuneate to subrounded, margin entire, apex acuminate to obtuse; veins 5 or 6 pairs, curve apically along margins and anastomose. Inflorescences 2–5 cm across; peduncle 0.5–1.5 mm; bracts awl-shaped, ca. 1.5 mm. Calyx 1.8–2 mm, puberulent to subglabrous. Corolla yellow or white, outside puberulent, white villous in throat, slightly 2-lipped, tube 3–4 mm, lower lip 3-lobed with middle lobe longer than laterals, upper lip emarginate. Stamens exerted. Ovary subrounded, glabrous. Style ca. 3 mm. Fruiting calyx 2-lipped to subtruncate, lower lip subentire to slightly 2-dentate, upper lip 2-dentate. Fruit green when young, becoming brown, obovate, 2–3 mm in diam. Fl. and fr. Sep–Nov.

- Thickets on mountain slopes; 200–400 m. Hainan.

Allied to *Premna serratifolia* but differs in having papery to subleathery leaf blades, lateral veins adaxially obscure, and calyces with lower lip subentire to slightly 2-dentate.

42. *Premna laevigata* C. Y. Wu, Fl. Yunnan. 1: 440. 1977.

平滑豆腐柴 ping hua dou fu chai

Shrubs 2–3 m tall. Branchlets purple-brown when young but becoming brown, terete, striate, glabrous, with sparse small yellow lenticels, mealy. Petiole 2.7–3 cm, glabrous; leaf blade ovate-oblong to elliptic, 7–14 × 3–7 cm, leathery, glabrous, abaxially yellow-green, adaxially brownish green to tea green, base cordate to subrounded, margin serrate above middle, apex acuminate to caudate-acuminate; veins 6 or 7 pairs, midvein abaxially raised and adaxially slightly compressed, reticulate veins obscure. Inflorescences 3–8 × 2–3.5 cm; peduncle 1–1.5 cm; bracts linear-lanceolate, ca. 3 mm, easily deciduous. Calyx 3–3.5 mm, 2-lipped, lips entire or lower lip emarginate and upper lip with 3 minute emergences. Corolla 3–6 mm, 2-lipped, lower lip 3-lobed, upper lip entire and larger than lower lip, villous in throat. Stamens shorter than corolla; filaments glabrous. Ovary globose, glabrous. Style ca. 4 mm, glabrous. Fruiting calyx tuberculate. Fruit dark brown, 6 × 4–4.5 mm. Fr. Sep–Nov.

- Mixed forests; 500–600 m. Yunnan (Mengla).

43. *Premna racemosa* Wallich ex Schauer in A. de Candolle, Prodr. 11: 633. 1847.

总序豆腐柴 zong xu dou fu chai

Shrubs (3–)5–6 m tall, erect to climbing. Branchlets, petioles, inflorescence rachises, and leaf veins rust colored hirsute. Branchlets terete, becoming yellowish brown to red-brown and subglabrous, nodes with an elevated leaf scar. Petiole 8–10 mm; leaf blade rhomboid-elliptic to ovate, 6–10 × 3.7–6 cm, subleathery, minutely hirsute especially on veins, base broadly cuneate to subrounded, margin entire or rarely obscurely serrulate, apex acuminate, acute, or rarely obtuse; veins 6 or 7 pairs, slightly elevated on both surfaces. Inflorescences racemelike thyrses; bracts lanceolate to ovate, sparsely minutely hispid. Calyx with a tube ca. 2 mm, 2-lipped; lips entire, sparsely minutely hirsute, glandular. Corolla white, 4-lobed, exerted from calyx, tube ca. 4 mm, outside sparsely glandular, inside puberulent, yellowish

villous in throat. Stamens conspicuously exerted. Ovary glabrous. Styles shorter than stamens; stigmas 2. Fruit narrowly obovate, ca. 4 mm, apically glabrous. Fl. and fr. May–Jul.

Mixed forests; 1400–2900 m. Xizang, SE Yunnan [Bangladesh, India, Myanmar, Nepal].

44. *Premna interrupta* Wallich ex Schauer in A. de Candolle, Prodr. 11: 633. 1847.

间序豆腐柴 jian xu dou fu chai

Shrubs, erect to slightly climbing. Branchlets brownish, pubescent when young, glabrescent. Petiole 3–4 mm or leaves subsessile; leaf blade ovate-oblong to obovate, 8.5–13 × 4–8 cm, papery, pubescent especially on veins or abaxially subglabrous and yellow glandular, base acuminate to rarely cuneate or rounded, margin entire or obscurely serrulate above middle, apex acuminate. Inflorescences spikelike thyrses, ca. 7 × 1.5 cm; peduncle ca. 1.8 cm, densely velvety; bracts lanceolate, ca. 1 cm, pilose. Calyx campanulate, ca. 2 mm, 2-lipped; lips entire or upper lip emarginate and ciliate, subglabrous to sparsely puberulent, yellow glandular. Corolla white or yellowish green, 4-lobed, subglabrous, outside glandular, villous in throat. Stamens exerted. Ovary glabrous or sparsely pubescent, glandular. Fruit black, obovate, apically yellow glandular. Fl. and fr. May–Aug.

Mixed forests; 1500–2600 m. Guangxi, Sichuan, SE Xizang, Yunnan [Bhutan, India, Myanmar, Nepal].

45. *Premna bracteata* Wallich ex C. B. Clarke in J. D. Hooker, Fl. Brit. Ind. 4: 572. 1885.

苞序豆腐柴 bao xu dou fu chai

Trees ca. 13 m tall. Branchlets and inflorescences densely dusty yellow to gray velvety. Branchlets purple-brown, with sparse oblong to linear lenticels, subglabrescent, nodes with a prominent leaf scar. Petiole 1.5–2 cm; leaf blade elliptic to broadly ovate, 6.5–17 × 5.5–10 cm, subleathery, abaxially pubescent, adaxially shiny, base subrounded, apex abruptly acuminate; veins 6–8 pairs, midvein abaxially very prominent. Inflorescences spikelike thyrses with sessile cymes laxly arranged on axis; bracts ovate, ca. 5 × 2 mm, minutely tomentose. Calyx ca. 2 mm, 2-lipped; lips entire, yellowish velvety. Corolla exerted from calyx, 4-lobed, tube ca. 2 mm, pilose in throat. Stamens and style exerted; filaments glabrous. Ovary apically pubescent. Fruit globose, 1.5–2 mm in diam. Fl. May.

Mixed forests; 600–1300 m. SE Xizang, S Yunnan [Bangladesh, Bhutan, India].

46. *Premna herbacea* Roxburgh, Fl. Ind. ed. 1832, 3: 80. 1832.

千解草 qian jie cao

Premna humilis Merrill; *P. nana* Collett & Hemsley; *P. obovata* Merrill; *Pygmaepremna herbacea* (Roxburgh) Moldenke.

Subshrubs ca. 9 cm tall. Rhizomes woody. Branches sparsely yellow-brown pilose or glabrous. Leaves rosulate; leaf blade obovate-oblong to spatulate, 3–14 × 2–6(–9) cm, sparsely pubescent and yellow glandular, base cuneate, margin sparsely serrate to sparsely crenulate above middle or rarely entire, apex rounded. Inflorescences paniculate

capitate corymbs, 1–2.3 × 1–2.4 cm, ca. 10-flowered; peduncle 5–13 mm, densely puberulent; bracts linear to lanceolate, 3–8 mm. Calyx cup-shaped, ca. 2.5 mm, outside pubescent and yellow glandular. Corolla purple in bud, white

in bloom, slightly 2-lipped, 4-lobed, outside puberulent. Ovary 2-locular. Fruit ca. 5 × 4 mm. Fr. Jun.

Dry places; 200–1700 m. Hainan, W Yunnan [Bhutan, Cambodia, India, Laos, Myanmar, Nepal, New Guinea, Philippines, Thailand, Vietnam; Australia].

10. TSOONGIA Merrill, Philipp. J. Sci. 23: 264. 1923.

假紫珠属 *jia zi zhu shu*

Shrubs or small trees, erect; branchlets, petioles, and peduncles rust colored tomentose when young. Leaves opposite, simple, lobed, or palmately 3-foliolate; petiole long. Cymes axillary, lax, few flowered; peduncle shorter than petioles. Calyx small, campanulate, 2-lipped, lower lip 2-lobed, upper lip entire, outside glandular. Corolla weakly 2-lipped, with elongated tube, throat not bearded but with a ring of minute hairs near base; lobes 4 or 5, subequal, much shorter than tube. Stamens 4, didynamous, inserted at middle of corolla tube, slightly exerted. Ovary 2-locular; ovules 1 or 2 per locule. Style elongate; stigma slightly 2-cleft.

Monotypic: China, Myanmar, and Vietnam.

1. *Tsoongia axillariflora* Merrill, Philipp. J. Sci. 23: 264. 1923.

假紫珠 *jia zi zhu*

Tsoongia axillariflora var. *trifoliolata* H. L. Li.

Shrubs or small trees, 1–7 m tall. Branchlets purple-red, terete. Petiole 2–5.5 cm, pubescent, glandular; leaf blade elliptic to ovate-elliptic, 6–15 × 3–6.5 cm, submembranous, sparsely pubescent and glandular especially abaxially, base broadly cuneate, margin entire, apex acuminate to acute; veins 4–7 pairs, abaxially prominent. Bracts and bractlets persistent. Calyx 2–3 mm. Corolla yellow, tube ca. 9 mm, outside glandular. Ovary apically densely yellow glandular. Fruit black-brown when mature, nearly ovoid, ca. 4 mm in diam., shiny, sparsely glandular. Fl. and fr. May-Sep.

Dense forests in mountain valleys; 900–1000 m. Guangdong, Guangxi, Hainan, SE Yunnan [Myanmar, Vietnam].

