

3. **AIDIA** Loureiro, Fl. Cochinch. 1: 143. 1790.

茜树属 qian shu shu

Chen Tao (陈涛); Charlotte M. Taylor

Shrubs or trees [or rarely vines], unarmed. Raphides absent. Leaves opposite, isophyllous or at nodes with inflorescences often markedly anisophyllous with smaller leaf reduced to a scale and/or deciduous to give an appearance of alternate leaf arrangement, usually with domatia; stipules persistent or usually caducous, interpetiolar or shortly united around stem, triangular. Inflorescences pseudoaxillary, usually produced at nodes with markedly anisophyllous leaves thus appearing “leaf-opposed,” fasciculate to usually cymose, few to many flowered, sessile to pedunculate, bracteate. Flowers sessile or pedicellate, bisexual, monomorphic. Calyx limb cupular or campanulate, 4- or 5-lobed or -denticulate. Corolla white, yellow, or green sometimes flushed with pink or red, salverform, pilosulous to villosulous in throat; lobes 4 or 5, convolute in bud, usually strongly reflexed at anthesis. Stamens 4 or 5, inserted in corolla throat, exerted; filaments very short; anthers dorsifixed, exerted. Ovary 2(or 3)-celled, ovules several to many in each cell on axile placentas; stigma clavate, fusiform, or 2-lobed with lobes sometimes coherent or free. Fruit red to orange, baccate, fleshy, globose and smooth or ridged, with calyx limb deciduous; seeds several to numerous, medium-sized, angled to compressed, embedded in pulp.

About 50 species: tropical Africa, S and SE Asia, Oceania; eight species (one endemic) in China.

The Asian and Malasian portion of this genus was reviewed in detail by Ridsdale (Blumea 41: 135–179. 1996), who recognized five sections; all of our species fall in his *Aidia* sect. *Aidia*. An additional species, *A. shweliensis*, was included in *Aidia* by W. C. Chen (in FRPS 71(1): 350. 1999) but is here treated as *Fosbergia shweliensis*. The morphology of *Aidia* was studied in some detail by Tirvengadam and Sastre (Bull. Mus. Natl. Hist. Nat., B, Adansonia 8: 257–296. 1986), who also provided an overview of the taxonomy. Ridsdale (Reinwardtia 12: 289. 2008) treated *A. canthioides* in the genus *Benkara*, but it seems anomalous in that genus and is here retained in *Aidia*. The species circumscriptions of Ridsdale differ from those of W. C. Chen (loc. cit.: 348–356); neither author is completely followed here. Following Ridsdale, here plants with 4-merous flowers are distinguished from those with 5-merous flowers, which results in the separation of *A. racemosa* and *A. cochinchinensis*, both 5-merous representatives of primarily Malasian and Vietnamese species, from the 4-merous, primarily Chinese species *A. henryi*. Following W. C. Chen, *A. henryi* and *A. merrillii* are here considered conspecific. Following Ridsdale, *A. densiflora* (Wallich) Masamune is not treated here as a species found in China, and the names Merrill (Lingnan Sci. J. 14: 61. 1935) considered synonyms of that species (*Randia densiflora* (Wallich) Benth., *R. oppositifolia* Koorders, and *Webera oppositifolia* Roxburgh) are here considered misapplied names that do not correspond to any species in the Chinese flora.

- 1a. Young branches, leaf blade abaxially, and inflorescences densely hirtellous, pilosulous, or tomentulose, with trichomes spreading 5. *A. pycnantha*
- 1b. Young branches, leaf blade abaxially, and inflorescences glabrous, puberulent, or strigillose, with trichomes mostly appressed or leaves sometimes pilose below on principal veins in *A. salicifolia*.
 - 2a. Inflorescences fasciculate, or subsessile and congested-cymose with axes short and often monochasial, with bracts nearly as long as internodes of axes, and with pedicels much longer than axes (i.e., at first glance appearing fasciculate or fungoid).
 - 3a. Pedicels 5–17 mm; calyx limb 3–5 mm; corolla with tube 8–9 mm, lobes 4–7 mm and shorter than tube 1. *A. canthioides*
 - 3b. Pedicels 1–4 mm; calyx limb 1–2.5 mm (unknown in *A. salicifolia*); corolla with tube ca. 3 mm, lobes 4–5 mm and longer than tube (corolla unknown in *A. salicifolia*).
 - 4a. Leaf blade narrowly lanceolate to narrowly elliptic, 8.5–23 × 0.5–3 cm, with secondary veins 9–12 pairs; Guangxi 7. *A. salicifolia*
 - 4b. Leaf blade elliptic-lanceolate or oblong-lanceolate, 6.2–17.5 × 2.7–6.5 cm, with secondary veins 7–10 pairs; Yunnan 8. *A. yunnanensis*
 - 2b. Inflorescences cymose, subsessile to pedunculate, branched to several orders with axes sometimes dichasial or monochasial, with internodes of axes exceeding bracts, with pedicels absent or shorter than peduncle plus branched portion of inflorescence.
 - 5a. Calyx limb 5–5.5 mm (including lobes); corolla lobes 9–10 mm 4. *A. oxyodonta*
 - 5b. Calyx limb 1–2.5 mm; corolla lobes 5–8 mm.
 - 6a. Calyx lobes 4; corolla lobes 4; stipules 6–10 mm; widespread in China 3. *A. henryi*
 - 6b. Calyx lobes 5; corolla lobes 5; stipules 3–5 mm; Hainan (*A. cochinchinensis* also in Yunnan).
 - 7a. Inflorescence axes dichasial 2. *A. cochinchinensis*
 - 7b. Inflorescence axes with branching dichasial at basal nodes but markedly monochasial at distal nodes 6. *A. racemosa*

1. **Aidia canthioides** (Champion ex Benth.) Masamune, 香楠 xiang nan
Trans. Nat. Hist. Soc. Formosa 28: 118. 1938.

Randia canthioides Champion ex Benth., Hooker’s J.

Bot. Kew Gard. Misc. 4: 194. 1852; *Aidia canthioides* var. *lanceolata* Masamune; *Benkara canthioides* (Champion ex Benth) Ridsdale; *Fagerlindia canthioides* (Champion ex Benth) Ridsdale.

Shrubs or trees, 1–12 m tall; branches flattened to subterete, glabrous. Petiole 5–18 mm, glabrous; leaf blade drying papery or thinly leathery, oblong-elliptic, oblong-lanceolate, or lanceolate, 4.5–18.5 × 2–8 cm, both surfaces glabrous, base cuneate to obtuse or shortly rounded, sometimes inequilateral, apex acute to acuminate; secondary veins 3–7 pairs, in abaxial axils usually with foveolate and/or pilosulous domatia; stipules deciduous or sometimes persistent on distalmost nodes, broadly triangular, 3–8 mm, glabrous, apex acute or acuminate. Inflorescences fasciculate or shortly congested-monochasial and subsessile, 2–3 × 3–5 cm, several flowered, glabrescent; bracts ovate, often fused in pairs, 0.5–1 mm, acute to obtuse; pedicels 5–17 mm. Calyx densely to sparsely strigillose; ovary portion obconic, 1–1.5 mm; limb with basal tubular portion 3–5 mm; lobes 5, triangular to deltoid, 0.5–2 mm, acute. Corolla white or yellowish white, glabrous outside; tube 8–9 mm; lobes 5, narrowly spatulate-oblong, 4–7 mm, acute. Berry 5–8 mm in diam., sparsely strigillose or glabrous; seeds 6 or 7, flattened, angled, 2–3 mm. Fl. Apr–Jun, fr. May–Feb.

Thickets or forests on hills, on mountain slopes, or at streamsides in valleys; below 100–1500 m. Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan [Japan, Vietnam].

This species was excluded from *Aidia* and treated as *Fagerlindia canthioides* by Ridsdale (Blumea 41: 176. 1996), then as *Benkara canthioides* by Ridsdale (Reinwardtia 12: 289. 2008). This species is here included in *Aidia* because of its apparent lack of lateral short shoots or spines, inflorescences not terminal on developed stems, and apparently bisexual flowers.

2. *Aidia cochinchinensis* Loureiro, Fl. Cochinch. 1: 143. 1790.

茜树 qian shu

Randia cochinchinensis (Loureiro) Merrill.

Shrubs or trees, 2–15 m tall; branches somewhat flattened to terete, glabrous. Petiole 5–10 mm, glabrous; leaf blade drying leathery or papery, elliptic to lanceolate, 9–15 × 3–5 cm, both surfaces glabrous, base acute to obtuse, apex acute to acuminate; secondary veins 5–7 pairs, in abaxial axils usually with pilosulous and/or foveolate domatia; stipules deciduous after distalmost 2 or 3 nodes, lanceolate to narrowly triangular, 3–5 mm, glabrous, apex acuminate. Inflorescences cymose, 2–6 cm, with axes usually regularly dichasial, glabrous to strigillose; peduncle ca. 0.5 cm; bracts lanceolate, 1–2 mm; pedicels 1–2 mm. Calyx glabrous; ovary portion obconic, ca. 2 mm; limb ca. 2 mm, shallowly toothed; lobes 5. Corolla white, glabrous outside; tube 3–4 mm; lobes 5, narrowly spatulate-oblong, 5–6 mm, obtuse. Berry 4–6 mm in diam. Fl. Apr.

Open mountain slopes; 500–1300 m. Hainan, Yunnan [Vietnam].

3. *Aidia henryi* (E. Pritzl) T. Yamazaki, J. Jap. Bot. 45: 338. 1970.

亨氏香楠 heng shi xiang nan

Randia henryi E. Pritzl, Bot. Jahrb. Syst. 29: 581. 1901; *Aidia merrillii* (Chun) Tirvengadam; *R. acutidens* Hemsley &

E. H. Wilson; *R. caudatifolia* Merrill (1923), not Pitard (1923); *R. merrillii* Chun.

Shrubs or trees, 2–15 m tall; branches somewhat flattened to subterete, glabrous. Petiole 5–18 mm, glabrous; leaf blade drying leathery or papery, elliptic-oblong, oblong-lanceolate, or narrowly elliptic, 9–21.5 × 1.5–8 cm, both surfaces glabrous, base cuneate to obtuse, apex acute to acuminate; secondary veins 5–10 pairs, in abaxial axils usually with foveolate and/or pilosulous domatia; stipules caducous or sometimes persisting on distalmost nodes, lanceolate to narrowly triangular, 6–10 mm, glabrous, apex long acuminate. Inflorescences cymose, 1–7 × 1–10 cm, puberulent, strigillose, or glabrous, with axes dichasial or sometimes congested; peduncle 2–10 mm; bracts lanceolate to triangular or ovate, 0.5–2 mm, obtuse to acute; pedicels 0.5–7 mm. Calyx glabrous to strigillose; ovary portion obconic to cylindrical or narrowly ellipsoid, 1–1.5 mm; limb with tubular portion 1–2.5 mm; lobes 4, triangular to narrowly triangular or lanceolate, 0.5–1.5 mm. Corolla yellow, white, or sometimes red, glabrous outside; tube 3–4 mm; lobes 4, narrowly spatulate-oblong, 5–8 mm, acute to obtuse or rounded. Berry 5–6 mm in diam.; seeds ca. 2 mm. Fl. Mar–Jun, fr. May–Feb.

Thickets or forests at streamsides, on hills, or on mountain slopes; below 100–2400 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Thailand, Vietnam].

As noted above, this species is here circumscribed to generally comprise the plants treated by W. C. Chen (in FRPS 71(1): 354. 1999) as *Aidia cochinchinensis*. The reports of *A. cochinchinensis* (as *Randia cochinchinensis*) from Zhejiang by Qiu and Zhong (Fl. Zhejiang 6: 103. 1986) and from Fujian (Fl. Fujian. 5: 165. 1993) are here treated as reports of *A. henryi*.

4. *Aidia oxyodonta* (Drake) T. Yamazaki, J. Jap. Bot. 45: 339. 1970.

尖萼茜树 jian e qian shu

Randia oxyodonta Drake, J. Bot. (Morot) 9: 218. 1895.

Shrubs or trees, 2–12 m tall; branches somewhat flattened to subterete, puberulent to glabrous. Petiole 8–13 mm, glabrous; leaf blade drying leathery and often pale yellow adaxially and reddish brown abaxially, elliptic-oblong, lanceolate, or elliptic, 8–19 × 2.3–7.5 cm, glabrous on both surfaces, base obtuse to acute, apex acuminate or acute; secondary veins 7–10 pairs, in abaxial axils often with foveolate and/or pilosulous domatia; stipules generally persistent, ovate to narrowly triangular, 5–15 mm, glabrous, apex long acuminate to aristate. Inflorescences cymose with axes dichasial or often becoming monochasial distally, 4–5 cm, glabrous; peduncle 0.8–1 cm; bracts ovate to subulate, 2–3 mm, acute to acuminate; pedicels 2–5 mm. Calyx glabrous; ovary portion obconic, ca. 1.5 mm; limb with tubular portion campanulate, 5–5.5 mm; lobes 5, subulate or linear-lanceolate, 2–4.5 mm, ciliate to glabrous. Corolla yellowish white, outside glabrous; tube 4–5 mm; lobes oblong-spatulate, 9–10 × 3–5 mm, acuminate. Berry 7–13 mm in diam., glabrous; seeds flattened, ca. 2.5 mm. Fl. Apr–Nov, fr. May–Oct.

Thickets or forests on hills or mountains; 100–1000 m. SW

Guangdong, SE Guangxi, Hainan [Vietnam].

The Vietnam checklist (Checkl. Pl. Spec. Vietnam 3: 85. 2005) recognized *Aidia oxyodonta* var. *microdonta* (Pitard) P. H. Hô (Ill. Fl. Vietnam 3: 189. 1993), which is based on *Randia oxyodonta* var. *microdonta* Pitard; presumably if this variety is recognized the Chinese plants fall under *A. oxyodonta* var. *oxyodonta*, but so far Chinese literature has not mentioned these varieties.

5. *Aidia pycnantha* (Drake) Tirvengadam, Nordic J. Bot. 3: 455. 1983.

多毛茜草树 duo mao qian cao shu

Randia pycnantha Drake, J. Bot. (Morot) 9: 218. 1895; *Aidia acuminatissima* (Merrill) Masamune; *R. acuminatissima* Merrill.

Shrubs or trees, 2–12 m tall; branches terete to flattened, densely tomentulose, pilosulous, or hirtellous with pubescence drying ferruginous, sometimes becoming glabrescent with age. Petiole 5–15 mm, densely hirtellous or pilosulous; leaf blade drying thinly leathery or papery, often reddish brown, elliptic-oblong, oblong-lanceolate, or oblong-oblancheolate, 8–27.5 × 2–10 cm, adaxially glabrous and slightly shiny, abaxially hirtellous or pilosulous with pubescence usually denser on principal veins, base cuneate to obtuse and sometimes slightly inequilateral, apex acuminate to caudate-acuminate with tip to 2.5 cm and sometimes falcate curved; secondary veins 10–14 pairs, in abaxial axils sometimes with weakly developed pilosulous domatia; stipules deciduous or sometimes persisting on apical 2 or 3 nodes, interpetiolar, lanceolate to narrowly triangular, 8–12 mm, densely strigillose to hirtellous or tomentulose, apex acute to acuminate. Inflorescences cymose with axes markedly dichasial, many flowered, 4–6 × 5–12 cm, branched to several orders, densely hirtellous to pilosulous or tomentulose; peduncle 0.5–1.5 cm; bracts linear-lanceolate, 2–4 mm, acute; pedicels 1–4 mm. Calyx densely hirtellous to strigillose; ovary portion 1–1.5 mm; limb with tubular portion 2–3 mm; lobes 5, narrowly triangular, 1–2 mm, acute to acuminate. Corolla white or pale yellow, outside glabrous; tube ca. 4 mm, densely villous in throat; lobes 5, oblong-oblancheolate or spatulate, 6–9 × 2–2.5 mm, obtuse to rounded. Berry 6–8 mm in diam., sparsely strigillose to hirtellous or subglabrous; seeds ca. 2 mm. Fl. Mar–Sep, fr. Apr–Dec.

Thickets or forests at streamsides, in fields or valleys, or on hills or mountain slopes; near sea level to 1000 m. Fujian, Guangdong, Guangxi, Hainan, Yunnan [Vietnam].

6. *Aidia racemosa* (Cavanilles) Tirvengadam, Nordic J. Bot. 3: 455. 1983.

总状茜草树 zong zhuang qian cao shu

Stylocoryna racemosa Cavanilles, Icon. 4: 46. 1798; *Randia racemosa* (Cavanilles) Fernández-Villar (1880), not Roxburgh (1824); *R. suishaensis* Hayata.

Trees to 25 m tall; branches somewhat flattened becoming subterete, glabrous. Petiole 5–6 mm, glabrous; leaf blade drying thinly leathery, lanceolate to elliptic-oblong, 7–12 × 2–4 cm, glabrous on both surfaces, base acute to cuneate, apex acute; secondary veins 4 or 5 pairs, in abaxial axils usually with

foveolate and/or pilosulous domatia; stipules caducous, shortly united around stem, narrowly triangular, 3–5 mm, glabrous, apex acuminate. Inflorescences cymose, ca. 3 × 4–6 cm, glabrescent, with axes becoming monochasial distally; peduncle ca. 0.5 cm; bracts triangular, 1–1.5 mm, acute; pedicels 1–3 mm. Calyx glabrous; ovary portion ellipsoid, ca. 1 mm; limb ca. 1.5 mm, shortly dentate to denticulate; teeth 5. Corolla white, outside glabrous; tube ca. 4 mm; lobes 5, narrowly spatulate-oblong, 5–5.5 mm, adaxially strigillose, obtuse to rounded. Berry 4–8 mm in diam., glabrous.

Forests; elevation in China not noted on specimens [ca. 200 m to probably higher]. Hainan [Indonesia, Malaysia, New Guinea, Philippines, Thailand; Australia, Pacific islands].

7. *Aidia salicifolia* (H. L. Li) T. Yamazaki, J. Jap. Bot. 45: 339. 1970.

柳叶香楠 liu ye xiang nan

Randia salicifolia H. L. Li, J. Arnold Arbor. 24: 456. 1943.

Shrubs, ca. 1 m tall; branches slender, terete, glabrous. Petiole 2–8 mm, glabrous; leaf blade drying papery, dark olive-green adaxially, paler abaxially, narrowly lanceolate to narrowly elliptic, 8–23 × 0.5–3 cm, both surfaces glabrous or sometimes pilose abaxially along principal veins, base cuneate or acute, apex long acuminate; secondary veins 9–12 pairs, in abaxial axils with foveolate domatia; stipules caducous, lanceolate to triangular, 3–10 mm, glabrous, apex long acute to acicular. Inflorescences not seen. Infructescences congested-cymose, subsessile, 0.5–1.5 cm; bracts not described; pedicels in fruit ca. 4 mm. Berry 6–8 mm in diam. Fr. Nov.

• Forests on mountains; 600–1000 m. Guangxi.

Ridsdale (Blumea 41: 135–179. 1996) noted that this species is only reliably known from the type collection, though the additional, more broad-leaved collections *Steward et al. 544* and *Steward et al. 806* (no herbarium given by him) from “Kweichow” might be conspecific.

8. *Aidia yunnanensis* (Hutchinson) T. Yamazaki, J. Jap. Bot. 45: 339. 1970.

滇茜树 dian qian shu

Randia yunnanensis Hutchinson in Sargent, Pl. Wilson. 3: 400. 1916.

Shrubs or trees, 2–7 m tall; branches somewhat flattened to subterete, glabrous. Leaves subsessile to petiolate; petiole to 6 mm, strigillose to glabrous; blade drying papery or thinly leathery and sometimes reddish brown, elliptic-lanceolate or oblong-lanceolate, 6.2–17.5 × 2.7–6.5 cm, adaxially glabrous, abaxially glabrous or sometimes strigose or strigillose along principal veins, base cuneate to shortly rounded, sometimes slightly inequilateral, apex acuminate to caudate-acuminate; secondary veins 7–10 pairs, in abaxial axils sometimes with small foveolate and/or pilosulous domatia; stipules caducous, interpetiolar or shortly united around stem, lanceolate to narrowly triangular, 4–7 mm, strigillose to glabrous, smooth to keeled, apex acute to acuminate. Inflorescences fasciculate, several flowered, strigillose to hirtellous or strigose sometimes becoming glabrescent with age; bracts triangular, 0.5–1 mm, acute; pedicels 2–4 mm. Calyx strigillose; ovary portion ob-

Fl. China 19: 70–73. 2011.

conic to ellipsoid, ca. 1 mm; limb 1–2.5 mm including lobes, shallowly lobed; lobes 4, triangular to broadly triangular, 0.5–0.7 mm, acute. Corolla white, outside glabrous; tube ca. 3 mm, villous in throat; lobes 4, narrowly oblong-spatulate, 4–5 × ca. 2 mm, obtuse to rounded. Berry red, 5–8 mm in diam., strigillose or glabrous. Fl. Mar–May, fr. May–Jan.

Thickets or forests on hills or mountains; 500–1700 m. S Yunnan [Thailand (*Maxwell 97-144*, MO!)].

Fl. China 19: 70–73. 2011.