

## 14. ERIOLAENA Candolle, Mém. Mus. Hist. Nat. 10: 102. 1823.

火绳树属 huó shèng shù shù

*Wallichia* Candolle (1823), not Roxburgh (1820), nor Reinwardt (1823).

Trees or shrubs, sometimes [?always] deciduous. Stipule linear, caducous; leaf blade mostly ± cordate, rarely obscurely palmately lobed, or oblong and entire, stellate hairy, abaxially mostly densely so, sometimes nearly glabrous, margin ± dentate. Inflorescence racemose, axillary or terminal, often 1–2-flowered, less often many-flowered. Epicalyx lobes 3–5, dentate or divided, rarely entire, falling at anthesis. Sepals 4 or 5, valvate, linear, apex acute, abaxially stellate hairy, adaxially villous. Petals 4 or 5, yellow or white, base tapering into flat villous claw, claw sharply recurved into S-bend with limb radially spreading. Stamens many, connate into monadelphous tube; filaments partly free; anthers linear-oblong, 2-celled, cells parallel; staminodes absent. Ovary sessile, 4–10-celled, tomentose; ovules many in each locule; style linear; stigma 4–10-lobed. Capsule woody or nearly woody, ovoid or narrowly ovoid, dehiscence loculicidal, valves 4–10, adaxial margin densely woolly. Seeds winged, wing membranous, as long as seeds; endosperm thin, cotyledons plicate.

About 17 species: tropical and subtropical Asia; six species (one endemic) in China.

*Eriolaena* is poorly represented in herbaria, and more gatherings, particularly of correlated flowering and fruiting material, are needed to clarify the taxa.

- 1a. Leaf blade abaxially sparsely hairy to glabrescent, epidermis visible between hairs; leaves always present during flowering and fruiting.
  - 2a. Leaf blade glabrous or nearly so, veins of young leaves usually slightly pink; inflorescence a terminal, ± flat-topped, many-flowered panicle ..... 1. *E. glabrescens*
  - 2b. Leaf blade abaxially yellow-brown stellate pubescent; inflorescence an axillary, few-flowered cyme ..... 6. *E. kwangsiensis*
- 1b. Leaf blade stellate hairy, denser abaxially, often tomentose; leaves sometimes absent at flowering or fruiting.
  - 3a. Material in flower, epicalyx lobes available.
    - 4a. Epicalyx lobes 4–6(–10) mm, margins entire or nearly so.
      - 5a. Pedicel nearly as long as flower; epicalyx lobes linear-lanceolate, ca. 4 mm; flowers mostly 4-merous, rarely 5-merous ..... 2. *E. spectabilis*
      - 5b. Pedicel shorter than flower; epicalyx lobes ovate or elliptic-ovate; flowers 5-merous ..... 3. *E. quinquelocularis*
    - 4b. Epicalyx lobes 10–15(–20) mm, margins obviously dentate, fimbriate, or pinnatipartite.
      - 6a. Epicalyx lobe margin densely fimbriate, densely woolly stellate pilose ..... 4. *E. wallichii*
      - 6b. Epicalyx lobe margin dentate or pinnatipartite, shortly tomentose ..... 5. *E. candollei*
  - 3b. Material in fruit, epicalyx lobes lost.
    - 7a. Capsule distinctly angular.
      - 8a. Capsule 4-locular, angles scarcely verrucose, flat between ridges and nearly square in cross section ..... 2. *E. spectabilis*
      - 8b. Capsule 5-locular, angles strongly verrucose, grooved between ridges ..... 4. *E. wallichii*
    - 7b. Capsule rounded, smooth or longitudinally striate, not grooved between valves.
      - 9a. Fruiting without leaves ..... 3. *E. quinquelocularis*
      - 9b. Fruiting with leaves ..... 5. *E. candollei*

**1. *Eriolaena glabrescens*** Aug. Candolle, Bull. Herb. Boissier, sér. 2, 3: 370. 1903.

光叶火绳 guāng yè huó shèng

*Eriolaena glabrescens* Hu (1924), not Aug. Candolle (1903).

Trees, up to 10 m tall, old leaves present at anthesis. Branchlets slightly stellate hairy or nearly glabrous. Petiole 2–3 cm, nearly glabrous; leaf blade orbicular or ovate-orbicular, 7–10 × 6–10 cm, both surfaces sparsely stellate hairy when young, nearly glabrous or abaxially with scales or stellate hairs on veins and midrib when mature, basal veins 7, slightly pink abaxially, base shallowly cordate, apex acute or shortly acuminate. Inflorescence flat-topped, many-flowered; peduncle

pink (reddish) stellate tomentose. Pedicel robust, ca. 1 cm; epicalyx lobes linear, ca. 14 mm, pinnately divided, apex acute, indumentum red. Sepals 5, linear-lanceolate, ca. 2.5 × 0.5 cm, abaxially red stellate, adaxially tomentose, apex acuminate. Petals 5, yellow, oblong-spatulate, 2.5–3 × ca. 0.8 cm, base tapering into stipe, tomentulose, apex obtuse. Stamens many, connate into ca. 1.5 cm tube, free part very short. Ovary globose, 8-locular; style puberulent; stigma 8-lobed. Capsule ovoid or ovoid-ellipsoid, 3.5–4.5 cm, 8-valved, densely yellowish stellate tomentulose, apex acute or longer beaked. Seeds many, winged. Fl. Aug–Sep, fr. Nov–Dec.

Mountain slopes, valleys; 800–1300 m. S Yunnan [Thailand, S Vietnam].

*Eriolaena glabrescens* Hu is based on a different type (from

Yunnan) than that of *E. glabrescens* Aug. Candolle (from Vietnam). The choice of the same epithet is a clear indication of the distinctive sparse indumentum.

**2. *Eriolaena spectabilis*** (Candolle) Planchon ex Masters in J. D. Hooker, Fl. Brit. India 1: 371. 1874.

火绳树 huo sheng shu

*Wallichia spectabilis* Candolle, Mém. Mus. Hist. Nat. 10: 104. 1823; *Eriolaena malvacea* (H. Léveillé) Handel-Mazzetti; *E. sterculiacea* H. Léveillé; *E. szemaensis* Hu; *Microchlaena spectabilis* (Candolle) Endlicher ex Walpers; *Sterculia malvacea* H. Léveillé.

Deciduous shrubs or small trees, 3–8 m tall. Branchlets stellate puberulent. Stipule pointed linear, ca. 5 mm; petiole 2–5 cm, velutinous; leaf blade ovate or broadly ovate, 8–14 × 6–13 cm, abaxially densely gray-white or brownish stellate velutinous, adaxially sparsely slightly stellate hairy, basal veins 5–7, base cordate, margin irregularly minutely dentate, apex shortly acute. Inflorescence cymose, axillary, several-flowered, densely velutinous. Pedicels as long as flowers or slightly shorter; epicalyx lobes linear-lanceolate, entire, or rarely lobed, ca. 4 mm. Sepals 4(or 5), linear-lanceolate, 1.8–2.5 cm, densely stellate tomentulose. Petals 4(or 5), white or yellowish white, obovate-spatulate, as long as sepals, stipe thick, villous. Stamens many. Ovary ovoid, 8-celled, velutinous; style basally villous; stigma many-lobed. Capsule woody, ovoid or ovoid-ellipsoid, ca. 5 × 2.5 cm, verrucose and angular, deeply grooved between valves, apex obtuse or beaked. Fl. Apr–Jul.

Open forests, bushlands; 500–1300 m. NW Guangxi (Longlin), S Guizhou, S and SE Yunnan [Bhutan, India, Nepal].

**3. *Eriolaena quinquelocularis*** (Wight & Arnott) Wight, Icon. Pl. Ind. Orient. t. 882. 1840.

五室火绳 wu shi huo sheng

*Microchlaena quinquelocularis* Wight & Arnott, Prodr. Fl. Ind. Orient. 1: 71. 1834; *Wallichia quinquelocularis* (Wight & Arnott) Steudel.

Trees, to 10 m tall; bark gray-white. Branchlets sparsely stellate hairy when young. Petiole 1.5–3 cm; leaf blade round or broadly ovate, 5–8 cm in diam., thickly papery, abaxially densely white stellate puberulent, adaxially sparsely stellate puberulent, base cordate, margin obtusely dentate, apex obtuse or acute. Inflorescence cymose, terminal or axillary, up to 9 cm; peduncle robust, often 3-flowered. Pedicels shorter than flowers; epicalyx lobes entire, ovate or elliptic-ovate. Sepals 5, linear-lanceolate, ca. 2 cm, abaxially densely yellowish brown stellate tomentulose, hairs shorter adaxially, glandular at base. Petals 5, yellow, as long as sepals, apex obtuse, with broad stipe. Stamens as long as petals; stigmas 6–8, curved outward. Capsule long ellipsoid, 3–4.5 × ca. 2.5 cm, abaxially densely yellow-brown puberulent and mealy, 5–10-valved, not verrucose, valve loculicidal, lower 1/2 densely white villous, apex acute. Seeds 8 in each valve, arranged in 2 lines, ca. 2.5 cm including wing, wing membranous, oblong, apex obtuse, 1.3–1.8 cm. Fl. May.

Open forests, savannas; 800–1700 m. S Yunnan [India].

**4. *Eriolaena wallichii*** Candolle, Mém. Mus. Hist. Nat. 10: 104. 1823.

泡火绳 pao huo sheng

Trees, to 6 m tall. Branchlets stellate tomentose when young, hairs soon sparse. Stipules very quickly lost; petiole ca. 4.5 cm, stellate velutinous; leaf blade orbicular-ovate, sometimes obscurely 3-lobed, to ca. 16 × 14 cm, thickly papery, abaxially stellate tomentose, adaxially stellate puberulent, basal veins 7, base cordate, margin very shallowly obtusely dentate, apex acuminate to acute. Inflorescence terminal, to 6 cm, few-fruited; peduncle robust, glabrescent. Fruiting pedicel ca. 15 mm; epicalyx lobes ovate, ca. 1/2 as long as sepals, densely woolly stellate pilose, margins deeply fimbriate. Sepals 5, linear-lanceolate, ca. 3 cm. Petals 5, obcordate, ca. 2/3 as long as sepals, apex emarginate. Staminal tube as long as petals. Ovary 5-locular; style puberulent, stigma lobes very short. Capsule cylindrical, ca. 3 × 2.5 cm, each valve with prominent verrucose keel, grooved between valves, apex shortly beaked, valves 8–10, adaxial margin conspicuously woolly pilose. Seeds ca. 10 per locule, arranged in 2 lines, ca. 1.5 cm including wing.

1300–1400 m. Yunnan [India, Nepal].

*Eriolaena wallichii* is known in the Flora area from just the one fruiting gathering, A. Henry 12506A, and flowering material is needed to confirm the identification. Flowering material has extremely distinctive very woolly fimbriate epicalyx lobes.

**5. *Eriolaena candollei*** Wallich, Pl. Asiat. Rar. 1: 51. 1830.

南火绳 nan huo sheng

Trees, 6–12 m tall; bark gray. Branchlets stellate puberulent. Petiole 1.5–3 cm; leaf blade orbicular or ovate-orbicular, usually slightly 3–5-lobed, 6–10 × 5.5–11 cm, thickly papery, abaxially densely gray-white stellate tomentose, adaxially sparsely stellate hairy, basal veins 5–7, base cordate or shallowly cordate, margin obtusely dentate, apex shortly pointed or shortly acuminate. Inflorescence cymose, terminal or axillary, up to 7 cm, many-flowered. Epicalyx lobes pinnately partite, linear, 1–1.5 cm. Sepals 5, linear-lanceolate, slightly longer than epicalyx lobes, densely yellowish brown tomentulose. Petals 5, yellow, oblong, apex emarginate, base narrowed into thick claw, base of claw villous. Ovary ovoid-globose; style glabrous; stigmas 8–10, twisted. Capsule ovoid-globose, ca. 5 × 2.5 cm, apex pointed and beaked, valves 5 or 6(–10), apex shortly pointed, abaxial surface keeled or not, adaxial margin sericeous. Seeds many, winged. Fl. Mar–Apr.

Open forests on slopes; 800–1400 m. Guangxi, SW Sichuan, S Yunnan [Bhutan, India, Laos, Myanmar, Thailand, Vietnam].

**6. *Eriolaena kwangsiensis*** Handel-Mazzetti, Sinensia 3(8): 193. 1933.

桂火绳 gui huo sheng

*Eriolaena ceratocarpa* Hu.

Trees or shrubs, up to 11 m tall; bark gray. Branchlets yellowish brown stellate puberulent. Petiole 2–5 cm, hairy; leaf blade orbicular or broadly cordate, 9–15 × 7–13 cm, leathery or thinly leathery, abaxially densely stellate puberulent, adaxially sparsely stellate hairy, basal veins 5–7, base cordate, margin ob-

tusely dentate, apex shortly pointed or caudate, shortly acuminate. Inflorescence cymelike racemose, axillary, with several flowers, rarely up to 10. Pedicels 5–15 mm; epicalyx lobes spatulate tongue-shaped, 1–1.5 cm, obviously dentate, teeth acuminate. Sepals (4 or)5, linear-lanceolate, 2–2.5 cm abaxially, densely yellow-brown velutinous, adaxially gray villous. Petals (4 or)5, obovate-spatulate, apex shortly pointed, ca.  $2.5 \times 0.8$  cm, villous only on thick claw. Staminal tube ca. 12 mm. Ovary ovoid, yellowish stellate velutinous; stigma lobes reflexed. Capsule elliptic-lanceolate in outline,  $3.5\text{--}5 \times 1.5\text{--}2$  cm,  $\pm$  smooth, apex long beaked. Seeds winged, 1.5–2 cm including wing. Fl. Jun–Aug.

• Dense valley forests or scrub; 800–1200 m. Guangxi, S Yunnan.

Flora of China 12: 323–325. 2007.