

9. ALSTONIA R. Brown, Mem. Wern. Nat. Hist. Soc. 1: 75. 1811, nom. cons.

鸡骨常山属 *ji gu chang shan shu*

*Blaberopus* A. de Candolle; *Winchia* A. de Candolle.

Trees or shrubs, latex present. Branches whorled, mostly 4 or 5 together. Leaves whorled, rarely opposite; lateral veins numerous, ending in a marginal vein. Cymes terminal, usually 1–5 in thyrses or compound umbels, terminal. Flowers white, yellow, or pink. Calyx without glands inside, lobes connate at base. Corolla salverform, tube cylindric, dilated in distal half, pubescent inside, lobes overlapping to right or left. Stamens included, inserted near or above middle of corolla tube; anthers ovate, free from pistil head, not caudate; disc absent or of scales. Ovaries 2, distinct or connate, ovules numerous. Follicles 2, free or connate. Seeds oblong or linear, long bearded at both ends; endosperm thin; cotyledons up to twice as long as radicle.

About 60 species: tropical Asia, Africa, C America, N Australia, Pacific Islands; eight species in China.

1a. Trees; disc absent or small annular.

2a. Lateral leaf veins widely spaced, (3–)5–12 mm apart, ascending; corolla lobes in bud overlapping to right; seeds acuminate at 1 end ..... 2. *A. macrophylla*

2b. Lateral leaf veins close together, 1–6 mm apart, horizontal or almost so; corolla lobes in bud overlapping to left; seeds obtuse or rounded at both ends.

3a. Leaf apex long acuminate; ovary syncarpous; follicles solitary ..... 1. *A. rostrata*

3b. Leaf apex rounded to short acuminate; ovary of 2 separate carpels; follicles paired ..... 3. *A. scholaris*

1b. Shrubs; disc of 2 scales alternating with ovaries.

4a. Leaves sessile, blade thick, papery to ± leathery, lateral veins at almost 90° to midvein.

5a. Leaves pubescent abaxially; corolla to 3 cm ..... 5. *A. neriifolia*

5b. Leaves glabrous abaxially; corolla ca. 1.1 cm ..... 6. *A. rupestris*

4b. Leaves petiolate, blade thin, membranous, lateral veins at 45° to midvein.

6a. Leaves pubescent on both surfaces; corolla pink to red ..... 4. *A. yunnanensis*

6b. Leaves glabrous; corolla white or yellow.

7a. Colleters few and inconspicuous; corolla white, to 3 cm, tube 1–2 cm; disc lower than ovary ..... 7. *A. mairei*

7b. Colleters numerous, becoming ± indurated at base and persisting; corolla yellow, ca. 1 cm; tube ca. 0.8 cm; disc as long as ovary ..... 8. *A. henryi*

1. *Alstonia rostrata* C. E. C. Fischer, Bull. Misc. Inform. 4: 87. 1837.  
Kew 1929: 315. 1929.

盆架树 *pen jia shu*

*Alstonia glaucescens* (Wallich ex G. Don) Monachino; *Alstonia pachycarpa* Merrill & Chun; *Alyxia glaucescens* Wallich ex G. Don, not Wallich; *Winchia calophylla* A. de Candolle, not *Alstonia calophylla* Miquel; *W. glaucescens* (Wallich ex G. Don) K. Schumann.

Trees evergreen, glabrous, to 30 m tall. Branches greenish, angled when young. Leaves in whorls of 3 or 4, rarely opposite; petiole 1–2 cm; leaf blade narrowly elliptic, 7–20 × 2.5–4.5 cm, thick papery, lustrous adaxially, paler abaxially, apex caudate or acuminate; lateral veins 20–50 pairs, at 80–90° to midvein. Cymes glabrous, ca. 4 cm; peduncle 1.5–3 cm. Pedicel to 3 mm. Corolla white, pubescent, tube 5–6 mm; lobes broadly ovate, 3–4 mm, overlapping to left. Disc absent. Ovaries connate. Follicles connate, 18–35 × 1–1.2 cm. Seeds narrowly elliptic; cilia brown-yellow, to 2 cm. Fl. Apr–Jul, fr. Aug–Dec.

Monsoon or montane rain forests; 300–1100 m. Hainan, S Yunnan [India, Indonesia, Malaysia, Myanmar, Thailand].

The wood is used for making furniture and stationery, and the leaves and bark are used to treat acute bronchitis.

2. *Alstonia macrophylla* Wallich ex G. Don, Gen. Hist.

大叶糖胶树 *da ye tang jiao shu*

Trees to 20 m tall. Bark smooth; branches nearly 4-angled. Leaves in whorls of 3 or 4; petiole 1–4 cm; leaf blade narrowly obovate or narrowly elliptic, 10–53 × 4–19 cm, leathery, pubescent abaxially, apex usually acuminate; lateral veins 16–33 pairs, at 60–70° to midvein. Cymes terminal, 3-branched, 5–9 together, pubescent; peduncle 4–6 cm. Pedicel 4–5 mm. Corolla tube slightly longer than lobes, 4.5–6 mm; lobes overlapping to right, ciliate; disc absent. Ovaries distinct, glabrous. Follicles linear, to 61 cm × 2–5 mm. Seeds pubescent, ends with deltoid wings, with long stiff hairs all around. Fl. Oct–Nov.  $2n = 22$ .

S Guangdong, S Yunnan [Indonesia, Malaysia, Philippines, Thailand, Vietnam].

Cultivated for medicine.

3. *Alstonia scholaris* (Linnaeus) R. Brown, Mem. Wern. Nat. Hist. Soc. 1: 76. 1811.

糖胶树 *tang jiao shu*

*Echites scholaris* Linnaeus, Mant. Pl. 1: 53. 1767; *Pala scholaris* (Linnaeus) Roberty.

Trees to 40 m tall, glabrous. Bark gray; branchlets copiously lenticellate. Leaves in whorls of 3–10; petiole 1–3 cm; leaf blade narrowly obovate to very narrowly spatulate, 7–28 × 2–11 cm, leathery, base cuneate, apex usually rounded; lateral veins 25–50 pairs, at 80–90° to midvein. Cymes dense, pubescent; peduncle 4–7 cm. Pedicel usually as long as or shorter than calyx. Corolla white, tube 6–10 mm; lobes broadly ovate or broadly obovate, 2–4.5 mm, overlapping to left. Ovaries distinct, pubescent. Follicles distinct, linear, to 57 cm × 2–5 mm. Seeds oblong, margin ciliate, ends with tufts of hairs 1.5–2 cm. Fl. Jun–Nov, fr. Oct–Dec.  $2n = 22, 44^*$ .

Mixed forests, village groves; 200–1000 m. SW Guangxi, S Yunnan; cultivated in Fujian, Guangdong, Hainan, Hunan, Taiwan [Cambodia, India, Malaysia, Myanmar, Nepal, New Guinea, Philippines, Sri Lanka, Thailand, Vietnam; Australia].

The bark and leaves are used to treat headache, influenza, bronchitis, and pneumonia. The wood is used for making coffins.

**4. *Alstonia yunnanensis*** Diels, Notes Roy. Bot. Gard. Edinburgh. 5: 165. 1912.

鸡骨常山 ji gu chang shan

*Alstonia esquirolii* H. Léveillé; *Acronychia esquirolii* H. Léveillé.

Shrubs erect, to 3 m tall. Branches conspicuously lenticellate, puberulent when young. Leaves in whorls of 3–5, petiolate; blade very narrowly obovate or oblong, 6–19 × 1.3–5 cm, thin papery, pubescent on both surfaces, apex acuminate; lateral veins 15–35 pairs, at 45° to midvein. Cymes puberulent; peduncle 0.5–2 cm. Pedicel to 8 mm. Corolla pink to red, tube 1–1.3 cm; lobes oblong, 2–6 mm, overlapping to left. Disc lobes 2, ligulate, as long as or longer than ovaries. Follicles distinct, linear, 3–5 cm × ca. 4 mm. Seeds oblong, ends with very short cilia. Fl. Mar–Jun, fr. Jun–Nov.  $2n = 44^*$ .

• Montane brush fields, 800–2400 m. Guangxi, Guizhou, Yunnan.

The roots are used to cure hypertension and the leaves to treat hemostasis and fracture. The seeds yield up to 18% industrial oil.

**5. *Alstonia neriifolia*** D. Don, Prodr. Fl. Nepal. 131. 1825.

竹叶羊角棉 zhu ye yang jiao mian

*Alstonia guangxiensis* D. Fang & X. X. Chen.

Shrubs erect, to 2 m tall, glabrous except for leaves. Branches gray-brown, lenticellate. Leaves in whorls of 3 or 4, sessile; blade very narrowly elliptic or sublinear, 6–22 × 1–2.5 cm, thick papery, abaxially pubescent, apex acuminate; lateral veins 100–170 pairs, nearly at a right angle to midvein. Cymes to 10 cm. Calyx lobes ciliate. Corolla white, tube ca. 2 cm; lobes ca. 1 cm, overlapping to left. Stamens inserted at apex of corolla tube; disc shorter than ovaries. Follicles 6–

13 × 2–4 cm. Seeds ciliate at ends, 5–10 mm.

Montane brush fields. SW Guangxi [India, Indonesia, Malaysia, Sri Lanka].

The leaves and roots are used to cure abscesses.

**6. *Alstonia rupestris*** Kerr, Bull. Misc. Inform. Kew. 1937: 43. 1937.

岩生羊角棉 yan sheng yang jiao mian

*Blaberopus rupestre* (Kerr) Pichon

Shrubs erect, to 4 m tall, glabrous. Bark gray-brown; branches lenticellate. Leaves in whorls of 3–5, sessile; blade very narrowly elliptic or sublinear, 4.5–10 × 0.5–1.5 cm, thick papery, glabrous, apex acuminate; lateral veins 45–80 pairs, nearly at a right angle to midvein. Cymes crowded. Pedicel ca. 3 mm. Corolla white, tube 7–8 mm; lobes oblong, 2.5–3 mm, overlapping to left. Disc lobes as long as ovary. Ovaries distinct. Follicles red-brown, linear, 7–10 cm. Seeds with brown cilia. Fl. May–Oct.

Limestone rocks in brushwoods or forests; 500–1800 m. W Guangxi [Thailand].

**7. *Alstonia mairei*** H. Léveillé, Cat. Pl. Yun-Nan 9. 1915.

羊角棉 yang jiao mian

*Alstonia paupera* Handel-Mazzetti; *Wikstroemia hemslyana* H. Léveillé.

Shrubs erect, to 2 m tall, glabrous. Branchlets lenticellate. Leaves in whorls of 3–5; petiole 0.5–1.5 cm; leaf blade very narrowly obovate or elliptic, 4–14 × 0.8–3 cm, thin papery, glabrous, apex acuminate or caudate; lateral veins 27–70 pairs, at 45–60° to midvein. Cymes longer than leaves; peduncle 1.5–3.5 cm. Pedicel to 2–15 mm. Corolla white, tube 1–2 cm; lobes oblong, 6–10 mm. Disc lobes shorter than ovary. Ovaries distinct, ca. 1.5 mm. Follicles distinct, linear, 5–10 cm × 3–5 mm. Seeds oblong, ca. 7 mm; cilia at seed apex cream, to 5 mm. Fl. May–Oct.

• Rocky places in open evergreen forests; 700–1500 m. Guizhou, Sichuan, Yunnan.

The roots and leaves are used to stop external bleeding.

**8. *Alstonia henryi*** Tsiang, Sunyatsenia 6: 112. 1941.

黄花羊角棉 huang hua yang jiao mian

*Alstonia sebusii* (Van Heurck & Mueller-Argoviensis) Monachino var. *szemaoensis* Monachino.

Shrubs erect, to 3 m tall, glabrous except for flowers. Branchlets lenticellate. Leaves in whorls of 3 or 4; petiole to 1.2 cm; leaf blade very narrowly elliptic, 5–11 × 1–2.5 cm, papery, apex acuminate; lateral veins to 70 pairs, at 45–60° to midvein. Cymes 3-branched; peduncle 2–3 cm. Pedicel 0.8–1.2 cm. Calyx lobes ciliate. Corolla yellow; tube ca. 8 mm, dilated above middle, densely villous inside; lobes broadly ovate, ca. 2 mm. Disc lobes as long as ovary. Ovaries distinct. Fl. Jun.

• Montane forests, 1500 m. S Yunnan (Simao).

