

61. BALIOSPERMUM Blume, Bijdr. 603. 1826.

斑籽木属 ban zi mu shu

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Shrubs or subshrubs, dioecious or monoecious; indumentum of simple hairs. Leaves alternate; petiole usually long, apex or base of leaf blade 2-glandular; leaf blade simple, penninerved. Flowers in axillary panicles; male inflorescences many flowered, female ones few flowered, rarely female flowers inserted at base of male inflorescences (*B. solanifolium*); inflorescences branching. Male flowers: sepals (4 or)5 or 6, membranous, round, imbricate; petals absent; disk annular, lobed or 5-glandular; stamens 10–20, or more; filaments free; anthers 2-locular, longitudinally dehiscent; pistillode absent. Female flowers: sepals 5 or 6, sometimes accrescent; petals absent; disk annular; ovary 3- or 4-locular; ovules 1 per locule; styles 3, bifid; stigmas bifid. Capsules 3-valved.

About eight species: China, India, Indonesia, Malaysia, Myanmar, Thailand, Vietnam; five species (two endemic) in China.

Recent studies of *Baliospermum* (e.g., Phattarahirankanok & Chayamarit in Chayamarit & Welzen, Fl. Thailand 8, 1: 120. 2005) indicate that there are rather fewer species than had been supposed. Three of the Chinese species are rather poorly known.

- 1a. Plants monoecious; inflorescences usually leafy, female flowers axillary or inserted at base of male inflorescences; male disk glands connate into an urceolate structure 1. *B. solanifolium*
- 1b. Plants dioecious; female inflorescences prominently pedunculate, male a narrow panicle; male disk glands free.
 - 2a. Young branches ferruginous-tawny tomentose, glabrescent.
 - 3a. Leaves ovate, oblong, elliptic, or elliptic-lanceolate, 3–11 cm wide; stamens 16–20 2. *B. bilobatum*
 - 3b. Leaves narrowly lanceolate or narrowly elliptic, 2.5–3.5 cm wide; stamens 10–15 3. *B. angustifolium*
 - 2b. Young branches glabrous or puberulent, glabrescent.
 - 4a. Leaves ovate-cordate to broadly ovate, 15–25 × 10–16 cm, base cordate, rarely broadly cuneate to rotund; young stem glabrous 4. *B. yui*
 - 4b. Leaves elliptic, narrowly elliptic, or oblong to lanceolate, 9–16 × 3–8 cm, base cuneate to broadly cuneate; young stem puberulent 5. *B. calycinum*

1. *Baliospermum solanifolium* (Burman) Suresh, Regnum Veg. 119 [Interpret. Van Rheede's Hort. Malab.]: 106. 1988.

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Croton solanifolius Burman, Fl. Malab. 6. 1769; *Baliospermum angulare* Decaisne ex Baillon; *B. axillare* Blume; *B. indicum* Decaisne; *B. montanum* (Willdenow) Müller Argoviensis; *B. moritzianum* Baillon; *B. pendulinum* Pax; *B. polyandrum* (Roxburgh) Wight; *B. razianum* Keshava Murthy & Yoganarasimhan; *C. polyandrus* Roxburgh; *C. roxburghii* Wallich; *Jatropha montana* Willdenow; *Ricinus montanus* (Willdenow) Wallich.

Shrubs 1–3 m tall, monoecious (rarely dioecious); young branches green, appressed pubescent, glabrous at maturity. Petiole 1–8[–13] cm, pubescent to glabrous, apex usually 2-glandular; leaf blade elliptic, oblong, or oblanceolate to broadly ovate, sometimes shallowly 3–5-lobed, 5–20 × 1–9 cm, papery, both surfaces appressed pubescent to glabrous, base rounded to broadly cuneate, rarely subcordate, margin subentire or sparsely serrulate to undulate-crenulate, apex obtuse or acute, rarely acuminate; lateral veins 4 or 5. Panicles axillary, male ones 2–7(–16) cm, narrow, pubescent. Male flowers: pedicel 2–12 mm; sepals 5, ovate; disk urceolate; stamens ca. [10–]17. Female flowers 1–3, axillary or inserted at base of male inflorescences; pedicel 2–10 mm; sepals 5, ovate or triangular, 1–2 × 0.8–1 mm, pubescent outside; disk annular; ovary densely pubescent; styles 3, 1.5–3 mm, apex bifid. Fruiting calyx accrescent to (3–)5 × 2(–3) cm; capsule pendulous, subglobose, 8–10[–13] mm in diam., puberulent. Seeds elliptic-ovoid, ca. 3.5 × 3 mm, gray-brown, with stripes of yellowish spots. Fl. Mar–

May, fr. Jun–Sep.

Mixed woodlands; below 700 m. SW Yunnan [Bangladesh, Bhutan, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

2. *Baliospermum bilobatum* T. L. Chin, Acta Phytotax. Sin. 18: 252. 1980.

西藏斑籽木 xi zang ban zi mu

Dioecious shrubs to treelets, 1–6 m tall; young branches densely tawny-tomentose, glabrous at maturity. Petiole 1–10 cm, villous, apex usually 2-glandular; leaf blade ovate or oblong elliptic to elliptic-lanceolate, 8–18 × 3–11 cm, thickly papery to thinly leathery, both surfaces densely brown-yellow pubescent when young, sparsely puberulent with age, hairs denser abaxially along veins, base cuneate, broadly cuneate, or rotund, rarely cordate, margin irregularly rough glandular serrate, apex acuminate, sometimes caudate-acuminate, or slightly falcate-inflected; lateral veins 7 or 8. Male flowers: inflorescences densely pubescent, paniculate, 7–21 × 1–2 cm; bracts small, triangular, ca. 1 mm; sepals 5 or 6, round, 1–2 mm, margins ciliate; stamens 16–20. Female flowers: inflorescences racemelike or paniculate, 3–5 cm; bracts 2–5 mm; sepals 5–7, imbricate, pubescent, 5 equal or 7 unequal, 1–2 mm, margins serrulate; ovary densely pubescent; styles 3; stigmas bifid. Persistent sepals accrescent; capsules subglobose, longitudinally 3-grooved, densely pubescent. Seeds ovoid, 3–4 mm in diam., with stripes of gray-brown spots. Fl. Aug–Sep, fr. Sep–Nov.

• Broad-leaved forests; 800–1300 m. SE Xizang (Mêdog).

3. *Baliospermum angustifolium* Y. T. Chang, Acta Phytotax. Sin. 27: 148. 1989.

狭叶斑籽木 xia ye ban zi mu

Shrubs 3–4 m tall; young branches ferruginous-brown tomentose, glabrescent. Leaves clustered at apex of branches; petiole 2–4.5 cm, puberulent to glabrescent, apex 2-glandular; leaf blade narrowly lanceolate or narrowly elliptic, 12–18 × 2.5–3.5 cm, papery, both surfaces appressed pubescent when dry, glabrescent, base attenuate, minutely obtuse, margins irregularly rough glandular-serrate, apex acuminate or caudate-acuminate, acumen slightly falcate-inflected; lateral veins 6 or 7, ascending to tips of serrations. Male flowers: inflorescences subapical, narrowly thyrsoid, 10–12 cm; pedicels delicate, 1–3 mm; sepals 5, rotund, ca. 1 mm; stamens 10–15. Female flowers and fruits not seen. Fl. Aug.

• Scrub; ca. 1100 m. SE Xizang (Médog).

4. *Baliospermum yui* Y. T. Chang, Acta Bot. Yunnan. 11: 413. 1989.

心叶斑籽木 xin ye ban zi mu

Shrubs 1–2 m tall, dioecious; branches glabrous, densely longitudinally verruculose. Stipules narrowly oblong, ca. 4 mm, glabrous; petiole 3–12 cm, glabrous, apex 2-glandular; leaf blade ovate-cordate to broadly ovate, 15–25 × 10–16 cm, papery, both surfaces sparsely puberulent when young, denser along veins, glabrescent, base cordate, rarely broadly cuneate to rounded, margins sparsely glandular-serrulate, apex acuminate to caudate-acuminate; basal veins 3–5, lateral veins 9–12. Male inflorescences not seen. Female flowers: inflorescences axillary, paniculate, to 12 cm; peduncle 6–10 cm, branches short, dense; bracts and bracteoles narrowly lanceolate, 5–15 × 1–2 mm, glabrous; pedicels sparsely puberulent; sepals 5, lanceolate or ovate-lanceolate, 4–6 × 1–2 mm, glabrous, not accrescent; ovary glabrous; styles 3, bifid. Capsule slightly depressed globose, ca. 8 × 11 mm, glabrous, longitudinally 3-grooved, verruculose. Seed ellipsoidal, ca. 5 mm, with stripes of brown spots. Fl. May–Jul, fr. Jul–Oct.

Dense forests; ca. 800 m. SW Yunnan [Myanmar].

5. *Baliospermum calycinum* Müller Argoviensis, Flora 47: 470. 1864.

云南斑籽木 yun nan ban zi mu

Baliospermum calycinum var. *corymbiferum* (J. D. Hooker) Chakrabarty & N. P. Balakrishnan; *B. calycinum* var. *densiflorum* (D. G. Long) Chakrabarty & N. P. Balakrishnan; *B. calycinum* var. *effusum* (Pax & K. Hoffmann) Chakrabarty & N. P. Balakrishnan; *B. calycinum* var. *micranthum* (Müller Argoviensis) Chakrabarty & N. P. Balakrishnan; *B. calycinum* var. *siamense* (Craib) Chakrabarty & N. P. Balakrishnan; *B. corymbiferum* J. D. Hooker; *B. densiflorum* D. G. Long; *B. effusum* Pax & K. Hoffmann; *B. meeboldii* Pax & K. Hoffmann; *B. micranthum* Müller Argoviensis; *B. siamense* Craib; *B. suffruticosum* Pax & K. Hoffmann.

Shrubs 0.5–2.5(–3) m tall, dioecious; young branches puberulent, glabrescent. Petiole 2–10 cm, subglabrous, 2-glandular at apex; leaf blade narrowly elliptic or lanceolate to oblong, 9–16[–20] × 3–8 cm, membranous or papery, both surfaces puberulent to glabrescent, sometimes veins persistently hairy, densely granulose when dry, base cuneate or broadly cuneate, margin sparsely serrulate to slightly crenate, rarely subtire, apex acute to caudate-acuminate; basal veins 1 or 3, midrib prominent on both surfaces, lateral veins 6–14. Inflorescences axillary, glabrous to pubescent; peduncles elongated. Male flowers: inflorescences narrowly paniculate, to 18 cm, many flowered; pedicels 1–4 mm; sepals 5, orbicular to ovate, 1–2.5 × 0.8–2 mm, white, glabrous; disk glands free; stamens 10–16[–21]; filaments (0.2–)1–2 mm; anthers oblong, (0.3–)0.6 × ca. 0.2 mm. Female flowers larger; inflorescences 2–3 cm, paniculate, sometimes only several flowered; pedicels 1–2 mm, stouter; sepals elliptic or oblong (or slightly ovate), 3–5(–8) × 1–2(–4) mm, chartaceous, pubescent or almost glabrous, not or slightly accrescent; disk annular; ovary glabrous or puberulent; styles 3, bifid at apex. Capsules erect, ± depressed globose, ca. 6 × 8–10 mm, glabrous, with 3 longitudinal grooves. Seeds ellipsoid, ca. 4 × 3 mm, brown to dark brown, with stripes of brown spots. Fl. Jun–Oct, fr. Sep–Dec.

Dense forests; 500–2500 m. S Yunnan [Bangladesh, Bhutan, India, Myanmar, Nepal, Thailand].

Fl. China 11: 277–278. 2008.