

5. FLUEGGEA Willdenow, Sp. Pl. 4: 637, 757. 1805.

白饭树属 bai fan shu shu

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Geblera Fischer & C. A. Meyer.

Erect shrubs or small trees, dioecious, rarely monoecious; branchlets sometimes spine-tipped, indumentum of simple hairs, often absent. Leaves alternate, often distichous; petiole short; leaf blade simple, margin entire or serrulate, venation pinnate. Inflorescences axillary, 1-flowered, fascicled, or cymose; bracts obscure. Male flowers: pedicels long and slender; sepals 4–7, imbricate, margins entire or serrulate; petals absent; disk of 4–7 segments, these sometimes connivent or fused; stamens 4–7, inserted at base of disk, longer than sepals; filaments free; anthers 2-locular, erect, extrorse, longitudinally dehiscent; pistillode small, 2- or 3-lobed. Female flowers: pedicels terete or angular; sepals as in male; disk saucer-shaped or patelliform, sometimes thickened, entire or lobed; ovary (2 or)3(or 4)-locular; ovules 2 per locule; styles free, spreading, apex bifid or entire. Fruit a capsule, globose or trigonous, dehiscent into 3 cocci or indehiscent and ± berrylike; columella and sepals persistent; locules usually 2-seeded. Seeds usually 3-angled; testa thin, crustaceous, smooth to reticulate or verruculose, sometimes adaxially invaginated at hilum; endosperm copious; embryo straight to distinctly curved, lacking chlorophyll; cotyledons broader and much longer than radical.

About 13 species: widespread in tropical to warm temperate regions; four species (one endemic) in China.

1a. Plants without spine-tipped branchlets.

2a. Leaf blade margins entire or sometimes irregularly serrate or undulate-toothed, abaxially greenish; fruit a

3-angled reddish brown capsule 1. *F. suffruticosa*

2b. Leaf blade margins entire, abaxially whitish green; fruit a subglobose white berry 2. *F. virosa*

1b. Plants with spine-tipped branchlets.

3a. Branches angular; young stems, branchlets, leaves, pedicels, ovary, and capsules pubescent or puberulent; leaf

blade 3–7 × 2–5 mm; flowers solitary or clustered; male sepals, stamens, and disk glands 6 3. *F. acicularis*

3b. Branches terete; plant glabrous throughout; leaf blade 13–25 × 10–15 mm; flowers in cymes; male sepals,

stamens, and disk glands 5 4. *F. leucopyrus*

1. *Flueggea suffruticosa* (Pallas) Baillon, Étude Euphorb. 502. 1858.

一叶萩 yi ye qiu

Pharnaceum suffruticosum Pallas, Reise Russ. Reich. 3(2): 716. 1776; *Acidoton fluggeoides* (Müller Argoviensis) Kuntze; *A. ramiflorus* (Persoon) Kuntze; *Flueggea fluggeoides* (Müller Argoviensis) Webster; *F. ussuriensis* Pojarkova; *Geblera chinensis* Ruprecht; *G. suffruticosa* (Pallas) Fischer & C. A. Meyer; *G. sungariensis* Ruprecht; *Phyllanthus argyi* H. Léveillé; *P. fluggeoides* Müller Argoviensis; *P. ramiflorus* (Aiton) Persoon; *Securinea fluggeoides* (Müller Argoviensis) Müller Argoviensis; *S. japonica* Miquel; *S. microcarpa* B. C. Ding & Y. Wang; *S. ramiflora* (Aiton) Müller Argoviensis; *S. suffruticosa* (Pallas) Rehder; *S. suffruticosa* f. *japonica* Hurusawa; *S. suffruticosa* var. *japonica* (Miquel) Hurusawa; *S. suffruticosa* var. *umamiensis* Hurusawa; *Xylophylla ramiflora* Aiton.

Shrubs 1–3 m tall, densely branched, glabrous; branchlets ± distinctly angular when young, greenish, smooth, later subterete, yellow-brownish, not conspicuously lenticellate; ultimate branchlets not spine-tipped. Stipules ovate-lanceolate, ca. 1 mm, persistent; petiole 2–8 mm; leaf blade elliptic or oblong-elliptic, rarely obovate, 1.5–8 × 1–3 cm, papery, base obtuse to cuneate, margin entire or sometimes irregularly serrate or undulate-toothed, apex acute to obtuse, greenish abaxially; lateral veins 5–8 pairs, raised on both surfaces, reticulate veins slightly prominent. Plants dioecious. Inflorescences axillary,

cymose. Male flowers 3–18-clustered; pedicels 2.5–5.5 mm; sepals usually 5, elliptic, ovate, or rotund, 1–1.5 × 0.5–1.5 mm, margins entire or obscurely serrulate; disk glands 5; stamens 5; filaments 1–2.2 mm; anthers ovate, 0.5–1 mm; rudimentary ovary terete, 0.6–4 mm high, apex 2- or 3-lobed. Female flowers: pedicels 2–15 mm; sepals 5, elliptic to ovate, 1–1.5 mm, subentire, 1-veined and carinate on back; disk patelliform, entire or subentire; ovary ovoid, (2 or)3-locular; styles 1–1.8 mm, free or connate at base, erect or recurved. Fruiting pedicels 2–15 mm; sepals persistent; capsule triquetrous-oblate, 2–5 mm in diam., reddish brown when ripe, prominently reticulate veined, 3-lobed. Seeds plano-convex, ca. 3 mm, minutely granular-verruculose. Fl. Mar–Aug, fr. Jun–Nov.

Scrubby slopes, forest margins; 500–2500 m. Throughout China except Gansu, Qinghai, Xinjiang, Xizang [Japan, Korea, Mongolia, Russia].

The leaves and flowers of *Flueggea suffruticosa* are used as medicine for the treatment of infantile paralysis, neurasthenia, and facial paralysis.

2. *Flueggea virosa* (Roxburgh ex Willdenow) Voigt, Hort. Suburb. Calcutt. 152. 1845.

白饭树 bai fan shu

Phyllanthus virosus Roxburgh ex Willdenow, Sp. Pl. 4: 578. 1805; *Acidoton obovatus* (Willdenow) Kuntze; *A. virosus* (Roxburgh ex Willdenow) Kuntze; *Cicca obovata* (Willdenow) Kurz; *Flueggea microcarpa* Blume; *F. monticola* Webster; *F.*

obovata (Willdenow) Baillon; *F. sinensis* Baillon; *Securinega multiflora* S. B. Liang; *S. obovata* (Willdenow) Müller Argoviensis; *S. virosa* (Roxburgh ex Willdenow) Baillon; *Xylophylla obovata* Willdenow.

Shrubs 1–6 m tall, glabrous; branchlets sharply angular when young, reddish brown, smooth, later darker and lenticellate; ultimate branchlets not spine-tipped. Stipules lanceolate, 1.5–3 mm, entire or margins minutely lacerate; petiole 2–9 mm; leaf blade elliptic, oblong, obovate, or rotund, 2–5 × 1–3 cm, papery, base obtuse to cuneate, margin entire, slightly revolute when dry, apex rounded to acute, mucronulate, white-green abaxially; lateral veins 5–8 pairs. Plants dioecious. Inflorescences axillary, fascicled; bracts scarious, mostly less than 1 mm. Male flowers: pedicels slender, 3–6 mm; sepals 5, ovate, 0.8–1.5 × 0.6–1.2 mm, yellowish, margins entire or obscurely serrulate; disk segments 5, angular, free; stamens 5; filaments 1–3 mm; anthers ellipsoid, 0.4–0.7 mm, exerted from sepals; rudimentary ovary 0.8–1.4 mm high, usually 3-partite, recurved at apex. Female flowers: inflorescence (1–)3–10-flowered; pedicels 1.5–12 mm; sepals 5, as in male; disk annular, entire; ovary ovoid, 3-locular; styles 0.7–1.1 mm, connate at base, bifid at apex, lobes spreading or reflexed. Berry subglobose to oblate, 3–5 mm in diam., whitish when ripe, indehiscent. Seeds chestnut brown, often shiny, faintly reticulate or verruculose; testa thickened; hilum rounded, with a pronounced adaxial invagination. Fl. Mar–Aug, fr. Jun–Nov.

Scrub on slopes; 100–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hunan, Shandong, Taiwan, Yunnan [widespread in Africa, E and SE Asia, and Oceania].

All parts of *Flueggea virosa* are used as medicine for eczema, rheumatoid arthritis, etc.

3. *Flueggea acicularis* (Croizat) Webster, *Allertonia* 3: 304. 1984.

毛白饭树 mao bai fan shu

Securinega acicularis Croizat, *J. Arnold Arbor.* 21: 491. 1940.

Shrubs 1–4 m tall, erect; bark brownish, at first pubescent; branches angular, prominently lenticellate; ultimate branchlets spine-tipped, hirtellous, recurved. Stipules lanceolate, 0.7–2 mm; petiole 1–3 mm, hirtellous; leaf blade obovate, obdeltoid at tip with a minute apiculum in notch, 3–7 × 2–5 mm, papery, puberulent; lateral veins 4 or 5 pairs. Plants dioecious. Inflorescences axillary or clustered on short shoots, fascicled. Male flowers: pedicels slender, 4.5–7 mm; sepals 6, oblong or elliptic, 1.2–1.6 × 0.7–1.3 mm, margins irregularly denticulate; disk segments 6, angled, coherent; stamens 6; filaments 1.5–2 mm; anthers 0.6–1 mm; rudimentary ovary 2–3 mm high, 3-lobed to middle or beyond, lobes recurved. Female flowers: pedicels ca. 3 mm; sepals 5, obovate or elliptic, ca. 1 mm; ovary ovoid. Berry globose, 6–7 mm in diam., 3-locular. Fl. Mar–May, fr. Jun–Oct.

• Scrub on slopes; 300–400 m. Hubei, Sichuan, Yunnan.

4. *Flueggea leucopyrus* Willdenow, *Sp. Pl.* 4: 757. 1805.

聚花白饭树 ju hua bai fan shu

Acidoton leucopyrus (Willdenow) Kuntze; *Cicca leucopyrus* (Willdenow) Kurz; *Flueggea wallichiana* Baillon; *F. xerocarpa* A. Jussieu; *Phyllanthus leucopyrus* (Willdenow) J. Koenig ex Roxburgh; *Securinega leucopyrus* (Willdenow) Müller Argoviensis.

Shrubs 1.5–4 m tall, erect; branches terete or obtusely angular when young, gray, prominently lenticellate; ultimate branchlets spine-tipped, terete, rigid. Stipules triangular, 0.5–1 mm; petiole 2–8 mm, grooved adaxially; leaf blade elliptic,

Fl. China 11: 177–179. 2008.

obovate, or rotund, 13–25 × 10–15 mm, papery to thinly leathery, base cuneate to obtuse, margin entire, apex rounded; lateral veins 5–7 pairs. Inflorescences axillary, appearing with expanding leaves or at leafless nodes, cymose. Male flowers: pedicels 2–5 mm; sepals 5, ovate or rotund, 0.6–1.2 × 0.6–1.2 mm, margins entire or denticulate; disk segments 5, angular; stamens 5; filaments 0.8–1.8 mm; anthers 0.3–0.5 mm; rudimentary ovary 0.6–1.2 mm high, 2- or 3-lobed, lobes erect or recurved. Female flowers: pedicels 1.2–2.8 mm; sepals 5, elliptic or ovate, 0.6–0.8 mm; disk annular, subentire at apex; ovary ovoid, 2- or 3-locular; styles 0.6–0.9 mm, connate at base, bifid at apex. Berry subglobose, ca. 4 mm in diam., whitish when ripe. Seeds brownish, 1.9–2.5 mm, smooth; hilum invaginated. Fl. Apr–Jul, fr. Jul–Oct.

Scrub on slopes; 1000–1400 m. Sichuan (Dêrong), Yunnan (Dêqên, Mojiang, Zhongdian) [India, Sri Lanka; Africa, Arabia].

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