

2. GARUGA Roxburgh, Pl. Coromandel 3: 5. 1811.

白头树属 bai tou shu shu

Trees or shrubs deciduous. Branchlet pith without vascular strands, pubescent. Leaves odd-pinnate, alternate, usually stipulate, crowded toward ends of branches; leaflets opposite, subsessile or with petiolule, serrate; stipels usually present. Flowers bisexual, in much-branched panicles, present before leaves, usually crowded toward end of branches, 5-merous; receptacle concave, globose or cupular. Sepals nearly free, deltoid, valvate. Petals inserted at edge of disk, valvate, apex incurved in bud, later recurved. Disk 10-grooved. Stamens 10, inserted in grooves at margin of disk; filaments subulate, base hairy; anthers oblong. Ovary subsessile or sessile, 4- or 5-celled; ovules 2 in each cell; style short; stigma capitate, shallowly 4- or 5-lobed. Drupe subglobose; pyrenes 1–5, small, bony, grooved. Seeds with membranous testa; cotyledons folded.

About four species: tropical Asia, N Oceania, and some Pacific islands; four species (one endemic) in China.

- 1a. Flowers 3–6 mm; drupe 5–10 × 5–12 mm.
 - 2a. Inflorescences densely tomentose; flowers ca. 3 mm; drupe ovoid, ± deltoid in cross section, base with persistent calyx 1. *G. forrestii*
 - 2b. Inflorescences pubescent or glabrescent; flowers 4–6 mm; drupe subglobose, base without persistent calyx 2. *G. floribunda*
- 1b. Flowers 6–10 mm; drupe 10–23 × (9–)11–18 mm.
 - 3a. Rachis and leaflets sparsely pubescent with short hairs; flowers ca. 6 mm; ovary glabrous 3. *G. pierrei*
 - 3b. Rachis and leaflets pubescent with long hairs, especially when young; flowers 7–10 mm; ovary sparsely pubescent 4. *G. pinnata*

1. *Garuga forrestii* W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 13: 162. 1921.

白头树 bai tou shu

Garuga yunnanensis Hu.

Trees, 10–15(–20) m tall. Branchlets densely pubescent when young, glabrescent, purple-brown, longitudinally striped and conspicuously lenticellate. Leaflets 11–19, nearly without petiolules; blades lanceolate or elliptic-oblong, densely pubescent when young, glabrescent, base rounded or broadly cuneate, margin shallowly serrate, apex acuminate, lowest pairs small, ca. 1 cm, often early deciduous, middle pairs 7–12 × 2–4 cm, with lateral veins 10–16 pairs, terminal leaflet 5–7 cm, with petiolule ca. 15 mm. Panicles 14–25(–35) cm, axillary or lateral, usually crowded toward ends of branchlets, multibranched; rachis and branches slender, densely tomentose. Flowers white, ca. 3 mm; receptacle cup-shaped, abaxially tomentose. Sepals nearly subulate, ca. 2 mm, hairy on both surfaces. Petals ovate, ca. 3 mm, abaxially tomentose. Stamens nearly equal. Ovary sessile, globose; style sparsely pubescent; stigma shallowly 5-lobed. Inflorescence with many linear pedicels without fruits. Drupe nearly ovoid, one side dilated, 7–10 × 6–8 mm, ± obtusely deltoid in cross section, attenuate at both ends, apex with a point, base with persistent shallowly cupular calyx. Fl. Apr, fr. May–Nov.

• Sparse forests in dry hot valleys; 700–2400 m. SW Sichuan, Yunnan.

2. *Garuga floribunda* Decaisne var. *gamblei* (King ex Smith) Kalkman, Blumea 7: 466. 1953.

多花白头树 duo hua bai tou shu

Garuga gamblei King ex Smith, Rec. Bot. Surv. India 4:

262. 1911.

Trees, 8–26 m tall. Branchlets glabrous except young parts, conspicuously lenticellate. Leaflets 9–19, without stipels, rachis and midrib sparsely pubescent; blades elliptic or oblong-lanceolate, membranous or papery, base rounded, oblique, margin serrate, lowest pair stipulelike, 5–8 mm, middle pair 9–11 × 3–5 cm, terminal leaflet with petiolule 6–25 mm. Panicles lateral or axillary, 25–35 cm, fascicled toward ends of branches, pubescent or glabrescent. Flowers yellow, 4–6 mm; receptacle cupular, abaxially pubescent. Sepals deltoid, abaxially pubescent. Petals oblong-lanceolate, ca. 3 mm, both surfaces villous. Stamens pubescent at base; disk lobes deltoid or quadrangular. Ovary globose, with short stipe, tomentose; style tomentose or pubescent; stigma shallowly 5-lobed. Fruit nearly globose, 5–9 × 5–12 mm, base without persistent calyx. Fl. May, fr. Aug–Nov.

Thick forests; 200–900 m. Guangdong, Guangxi, Hainan, S Yunnan [Bangladesh, Bhutan, India].

Garuga floribunda var. *floribunda* is distributed in tropical SE Asia to NE Oceania and the Pacific islands; it is not known to occur in China.

3. *Garuga pierrei* Guillaumin, Rev. Gén. Bot. 19: 164. 1907.

光叶白头树 guang ye bai tou shu

Trees, 8–15 m tall; bark greenish brown. Leaves with 11–17 leaflets; rachis and leaflet blades shortly pubescent; petiolules absent to 3 mm, terminal petiolule 2–25 mm; lowest leaflet blades stipulelike, oblong-elliptic, ca. 3 mm, early deciduous, middle blades ovate-elliptic or oblong-elliptic, 4–10 × 2–4 cm, base rounded or broadly cuneate, margin crenate-serrate, apex acute; lateral veins 10–15 pairs. Panicles axillary or lateral, fascicled toward ends of branches, 10–18 cm, pubescent with pale yellow hairs. Flowers yellowish white, ca. 6 mm;

pedicel 1–4 mm. Sepals deltoid, pubescent on both surfaces. Petals oblong-lanceolate, 4–5 mm, abaxially pubescent. Stamens nearly equal; filaments tomentose at base; disk lobes deltoid-trapeziform. Ovary globose, ± shallowly 5-lobed, glabrous, with short stipe; style ± sparsely pubescent; stigma shallowly 5-lobed. Fruit globose, 10–23 × 12–16 mm. Fl. Apr–May, fr. Sep–Oct.

Sparse forests in valleys or at roadsides; 700–1000 m. S Yunnan (Xishuangbanna) [Cambodia, Thailand, Vietnam].

4. *Garuga pinnata* Roxburgh, Pl. Coromandel 3: 5. 1819.

羽叶白头树 yu ye bai tou shu

Trees 4–10 m tall; bark gray-brown, rough. Branchlets glabrous except very young parts, with conspicuous lenticels and

leaf scars. Leaves with 9–23 leaflets; rachis and leaflets pubescent with long hairs, especially when young and on veins; petiolules absent to 4 mm, terminal petiolule 5–10 mm; lowest leaflet blades stipulelike, spoon-shaped or linear, 5–10 mm, early deciduous, middle blades elliptic, oblong, or lanceolate, 5–11 × 2–3 cm, base rounded, sometimes obliquely cuneate, margin sparsely serrate, apex usually narrowly acuminate; lateral veins 10–15 pairs. Panicles lateral or axillary, 7.5–19(–22) cm, densely pubescent with long hairs when young; peduncle 2–6 cm. Flowers white, yellowish white, or greenish yellow, 7–10 mm; pedicel 1–3 mm, long pubescent. Sepals deltoid, 2.5–3.5(–4) mm, pubescent on both surfaces. Petals oblong, 5–5.5 × 1.5–2 mm, pubescent with short somewhat curved hairs. Stamens slightly unequal; filaments with long hairs at base; disk lobes trapeziform or deltoid. Ovary oblong, with short stipe, sparsely pilose, especially when young; style pilose; stigma shallowly 5-lobed. Fruit globose, yellow when ripe, 11–15(–18) × (9–)11–18 mm, sometimes pubescent. Fl. Mar–Apr, fr. Apr–Oct.

Mixed forests, sparse mountain forests, valley scrub; 400–1400 m. SW Guangxi (Longzhou), Sichuan (Leibo), S and SE Yunnan (Funing, Xishuangbanna) [Bangladesh, Cambodia, India, Laos, Myanmar, Thailand, Vietnam].

Fl. China 11: 107–108. 2008.