

CABOMBACEAE

莼菜科 chun cai ke

Fu Dezhi (傅德志)¹; John H. Wiersema²

Herbs perennial, aquatic. Stems slender, branched, rhizomatous, repent; internodes at first elongate and apically floating, later erect, foliate, and shortened. Leaves dimorphic. Submersed leaves (*Cabomba* only), opposite or sometimes whorled, palmately dissected. Floating leaves alternate, peltate, entire. Flowers solitary, axillary from distal nodes, short to long pedunculate, bisexual, hypogynous, actinomorphic, borne at or above water surface; perianth persistent. Sepals 3, separate or nearly so. Petals 3, distinct, alternating with sepals. Stamens 3–36(–51), anthers dehiscent by longitudinal slits. Pistils 3–18, simple, obclavate or ventricose. Ovary 1-loculed; ovules 1–3, pendulous. Styles short. Stigmas capitate or linear-decurrent. Fruit achenelike or folliclelike, coriaceous, indehiscent. Seed endosperm little, perisperm abundant; embryo minute; cotyledons 2, fleshy.

Two genera and six species: tropical and temperate regions; two genera and two species in China.

Kuan Ke-chien. 1979. Nymphaeaceae subfam. Cabomboideae. Fl. Reipubl. Popularis Sin. 27: 5–6.

- 1a. Leaves opposite, dissected and submersed, but when flowering also alternate, tiny, peltate, and floating; stamens 3–6; submersed parts without evident mucilage coating 1. *Cabomba*
1b. Leaves alternate, entire, peltate, floating; stamens 12–36(–51); submersed parts heavily coated with mucilage 2. *Brasenia*

1. CABOMBA Aublet, Hist. Pl. Guiane 1:321. 1775.

水盾草属 shui dun cao shu

Plants with young vegetative parts often rust-colored pubescent, barely mucilaginous. Leaves submersed and floating, short to long petiolate. Submersed leaves conspicuous, basal to apical on stem throughout vegetative period; leaf blade cordate in outline, palmately dissected into dichotomously (trichotomously) branched segments. Floating leaves inconspicuous, alternate, apical on stem only during flowering; leaf blade linear-elliptic or rarely hastate, peltate, base entire or notched. Flowers entomophilous, short pedunculate; perianth showy. Sepals petaloid, obovate. Petals oval, base auriculate. Stamens 3–6, opposite petals. Pistils (1 or)2–4; ovules (1–)3(–5); stigmas capitate. Fruit long pyriform, apically tapered. Seeds ovoid (to subglobose), tuberculate.

Five species: Central, North, and South America; one species in China.

¹ Herbarium, Institute of Botany, Chinese Academy of Sciences, 20 Nanxincun, Xiangshan, Beijing 100093, People's Republic of China.

² United States Department of Agriculture/Agricultural Research Service, Systematic Botany & Mycology Laboratory, Bldg. 011A, Beltsville Agricultural Research Center (BARC-West), Beltsville, Maryland 20705-2350, U.S.A.

1. *Cabomba caroliniana* A. Gray, Ann. Lyceum Nat. Hist. New York 4: 47. 1837.

竹节水松 zhu jie shui song

Stems to 1–2 m, basally rhizomatous and glabrescent, apically rust colored pubescent. Submersed leaves petiole 0.3–1.5 cm; blade palmately dissected, 2–5 × 2.5–7 cm in overall diam., ultimate segments linear to slightly spatulate, to 1.8 mm wide. Floating leaves petiole 1.5–2 cm; blade 1.4–2 × ca. 0.3 cm. Flowers 0.6–1.5 cm in diam. Sepals white, with margin tinged

purple, or yellow, rarely purplish, 5–12 × 2–7 mm, apex obtuse. Petals colored as sepals, 4–12 × 2–5 mm, base clawed, apex broadly obtuse or emarginate; basal nectiferous auricles yellow. Stamens (3–)6, ca. 3.5 mm. Pistils (2–)3, 3.5–4 mm, short pubescent. Fruit 4–7 mm. Seeds 1–3, 1.5–3 × 1–1.5 mm. Fl. and fr. summer–autumn. $2n = 26, 78, 104$.

In rivers. Jiangsu [native to SE North America and S South America].

2. *BRASENIA* Schreber, Gen. Pl. 1: 372. 1789.

莼菜属 chun cai shu

Plants with young vegetative parts heavily mucilaginous. Leaves all floating, long petiolate; leaf blade broadly elliptic, venation radiate, margin entire. Flowers anemophilous, usually long pedunculate; perianth not showy. Sepals linear-oblong to narrowly ovate. Petals narrowly oblong, lacking basal auricles. Stamens 12–36(–51), opposite both sepals and petals. Pistils 6–18; ovules (1–)2; stigmas linear-decurrent. Fruit slightly to strongly fusiform; seeds ovoid, lacking tubercles.

One species: temperate and montane tropics, mainly in the N hemisphere, but absent from W Asia and Europe.

1. *Brasenia schreberi* J. F. Gmelin, Syst. Veg. 1: 853. 1791.

菹菜 chun cai

Brasenia purpurea Caspary.

Stems to 1–2 m, glabrous, base rhizomatous. Petiole 25–40 cm; leaf blade 5–10 × 3.5–6 cm, glabrous.

Flowers 1–2 cm in diam.; peduncle 6–10 cm. Perianth dull purple; segments 10–15(–20) × 2–7 mm; petals

slightly longer and narrower than sepals, apex obtuse.

Stamens 1/2 as long as petals, anthers linear, ca. 4 mm.

Fruit 6–10 mm. Seeds 1–2, 2.5–4 × 2–3 mm. Fl. Jun., fr.

Oct. $2n = 72, 80$.

In ponds, lakes, or swamps. Anhui, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [India, Japan, Korea, Russia (Far East); Africa, Australia, North America, South America].

