

RAFFLESIACEAE

大花草科 da hua cao ke

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Herbs, fleshy, parasitic on roots, stems, or branches of various hosts. Vegetative body thalloid or reduced to myceliumlike tissue within host. Normal leaves absent. Inflorescences terminal, usually 1-flowered, rarely a spike; bracts scale-like, several at base of inflorescence. Flowers usually unisexual (plants dioecious or monoecious), bisexual in *Mitrastemon*, actinomorphic, minute to extremely large [*Rafflesia arnoldii* R. Brown of Indonesia (Sumatra) produces a flower to 7.5 kg and to 1 m in diam.], 4–10-merous. Perianth lobes well-developed or absent, basally connate, rarely free. Stamens 5 to very numerous, in 1–3 series, fused with the rudimentary pistil into a gynostemium or in bisexual flowers connate into a cylinder; free filaments absent; anthers 2-loculed, dehiscent longitudinally or by apical pores. Ovary superior, semisuperior, or inferior, absent in male flowers, 1-loculed with many parietal placentas; ovules numerous, anatropous, integuments 1 or 2. Style 1 or none; stigma discoid, capitate, or with many lobes. Fruit a berry. Seeds minute, very numerous; testa hard; endosperm present.

Eight genera and 27 species: mostly in tropical and subtropical regions; two genera and two species in China.

Wu Te-lin. 1988. Rafflesiaceae. In: Kiu Hua-shing & Ling Yeou-ruenn, eds., Fl. Reipubl. Popularis Sin. 24: 246–249.

The family is poorly represented in herbaria.

- 1a. Inflorescence bracts decussate, in 4-series; flowers bisexual, less than 2 cm in diam.; perianth truncate; stamens connate into a tube covering ovary; ovary superior 1. *Mitrastemon*
- 1b. Inflorescence bracts imbricate, in a spiral; flowers unisexual, more than 8 cm in diam.; perianth lobes 10; stamens connate into a cupular synandrium; ovary inferior 2. *Sapria*

1. MITRASTEMON Makino, Bot. Mag. (Tokyo) 23: 326. 1909 [“*Mitrastemma*”].

帽蕊草属 mao rui cao shu

Herbs, parasitic on roots. Vegetative parts partly thalloid. Flowering shoot at first enclosed by a cupular volva, short, erect, unbranched. Inflorescence bracts scale-like, decussate in 4 ranks, concave, apicalmost largest and partly enclosing flower. Flowers bisexual, pale. Perianth cupular, truncate, persistent. Stamens very numerous, completely connate into a closed tube; connectives forming a depressed-conic cover over stigma, with a minute terminal opening, tube longitudinally dehiscent and entire structure caducous after flowering; anthers in a dense subterminal band, locules minute, connivent, extrorse, dehiscent by apical pores, initially covered by a thin irregularly ruptured membrane. Ovary superior; placentas 8–10(–15); integument 1. Style short and thick; stigma flat- to depressed-conic, obscurely 2-lobed.

Two species: one in Central America and one in tropical and subtropical Asia.

The distribution of this genus, with one species in Asia and the other in Central America, is unusual. Some authors place it within a separate family, Mitrastemonaceae, because of the bisexual flowers, but there are striking similarities in the floral structure such that there can be little doubt as to the close relationship to the rest of the Rafflesiaceae.

The generic name was spelled “*Mitrastemma*” in the protologue, but Makino later corrected the orthography to *Mitrastemon* (Bot. Mag. (Tokyo) 25: 253. 1911) and published the family name Mitrastemonaceae (loc. cit.: 252).

1. *Mitrastemon yamamotoi* Makino, Bot. Mag. (Tokyo) 23: 326. 1909 [“*Mitrastemma*”].

帽蕊草 mao rui cao

Visible body ± cylindric, 3–8 cm tall, all parts off-white, dark brown when dry. Volva 2–2.5 × ca. 2 cm, densely tuberculate, mouth shallowly 4- or 5-lobed. Inflorescence bracts in 4 series of 3–6, scale-like; blade ovate, ovate-oblong, or lanceolate, 0.8–2.7 × 0.8–2 cm, terminal 2 basally thick, with a nectary. Perianth, white, cupular, 0.5–0.6 × 1–1.7 cm, mouth entire or undulate. Stamen tube ca. 7 mm; anther ring ca. 6 mm deep; connective ca. 2 mm. Ovary globose to ellipsoid, ca. 12 × 9 mm. Stigma 6–7 mm, emarginate. Fl. Feb–Apr, fr. Oct.

Parasitic on roots of *Castanopsis*, *Lithocarpus*, and *Quercus*; ca.

1200 m. Fujian, Guangdong, Guangxi, Taiwan, Yunnan [Cambodia, ?Indonesia (Sumatra), Japan, Malaysia, Thailand].

- 1a. Inflorescence bracts 3 or 4 in each series, 2–2.7 × 1.5–2 cm 1a. var. *yamamotoi*
- 1b. Inflorescence bracts 6 in each series, 0.8–1.6 × 0.8–1.2 cm 1b. var. *kanehirae*

1a. *Mitrastemon yamamotoi* var. *yamamotoi*

帽蕊草(原变种) mao rui cao (yuan bian zhong)

Mitrastemon cochinchinensis Nakai; *M. kawa-sasakii* Hayata; ?*M. sumatranus* Nakai; *M. yamamotoi* f. *kawa-sasakii* (Hayata) Makino; *M. yamamotoi* var. *kawa-sasakii* (Hayata) Makino.

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Herbs, cylindrical, 3–8 cm tall. Inflorescence bracts 3 or 4 in each series, ovate to ovate-oblong, 2–2.7 × 1.5–2 cm, not keeled. Fl. Feb–Apr, fr. Oct.

Parasitic on roots of *Castanopsis* and *Quercus*; ca. 1200 m. Fujian, Guangdong, Guangxi, Taiwan, Yunnan [Cambodia, ?Indonesia (Sumatra), Japan, Malaysia, Thailand].

1b. *Mitrastemon yamamotoi* var. *kanehirae* (Yamamoto) Makino, J. Jap. Bot. 5: 18. 1928.

多鳞帽蕊草 duo lin mao rui cao

Mitrastemon kanehirae Yamamoto, Bot. Mag. (Tokyo) 39: 142. 1925.

Herbs, tetragonous-obconic, (3–)6–7 cm tall. Inflorescence bracts 6 in each series, ovate to lanceolate, 0.8–1.6 × 0.8–1.2 cm, dorsally keeled. Fl. Feb–Apr, fr. Oct.

• Parasitic on roots of *Castanopsis* and *Lithocarpus*. Taiwan.

2. *SAPRIA* Griffith, Proc. Linn. Soc. London 1: 216. 1844.

寄生花属 ji sheng hua shu

Richthofenia Hosseus.

Herbs, parasitic on roots, dioecious. Vegetative parts reduced to myceliumlike tissue within host. Flowering shoot short, erect, unbranched. Inflorescence bracts spirally arranged, overlapped at base of flower. Flowers unisexual, brightly colored, odor putrid. Perianth lobes overlapping; orifice with membranous corona. Male flowers: perianth tube basally solid; stamens 20, connectives completely united to form a stalked cup; anthers inserted on outside at base of cup, surrounding column base; gynostemium rudimentary. Female flowers: perianth tube base adnate to ovary; staminode-body cupular, inconspicuously radiately 6-ribbed; anthers sterile; ovary inferior; placentas 10–12, irregular; integument 1; gynostegium robust. Fruit globose, with persistent perianth.

Two species: Cambodia, China, India, Myanmar, Thailand, Vietnam; one species in China.

Sapria is a close relative of *Rafflesia* and is very poorly represented in herbaria.

1. *Sapria himalayana* Griffith, Proc. Linn. Soc. London 1: 217. 1844.

寄生花 ji sheng hua

Richthofenia siamensis Hosseus.

Visible body globose. Inflorescence bracts 10, scale-like, fleshy, imbricate, broadly triangular to ± rounded, basalmost ones minute, apical ones larger and ovate. Perianth campanulate; tube outside white, inside purple, semiglobose, 6–8 cm, inner surface longitudinally 20-ribbed and pubescent; lobes 10,

2-seriate, broadly triangular, 6–8 × 4–6 cm, imbricate, with rose-yellowish warts, exterior surface with many linear warts. Male flowers: anthers 2-loculed, broadly ellipsoid, dehiscent by apical pores; apical cupular body base convex; gynostegium blood red. Female flowers: cupular body base concave, with sterile stamens; gynostegium stouter than stamens. Fl. Aug–Sep.

Parasitic on roots of *Vitis* and *Tetrastigma*; 800–1200 m. SE Xizang, S Yunnan [NE India, Myanmar, Thailand, Vietnam].

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