
帽蕊木属 mao rui mu shu

Chen Tao (陈涛); Charlotte M. Taylor

Paradina Pierre ex Pitard; Stephgeyne Korthals.

Trees, unarmed; buds flattened, with stipules erect and pressed together. Raphides absent. Leaves opposite, sometimes with domatia; stipules caducous, interpretiolar, generally ovate to obovate, sometimes keeled, entire, often well developed. Inflorescences terminal on main stems and axillary branches and often accompanied by reduced, petaloid, and/or bracteate leaves, capitate with globose heads in fascicles, cymes, umbels, or thyrses, sessile to shortly pedunculate, bracteate; bracteoles spathulate to obpyramidal. Flowers sessile, bisexual, monomorphic. Calyx limb truncate to 5-lobed. Corolla cream to yellow-green, funnelform or narrowly salverform, inside glabrous to variously pubescent; lobes 5, valvate in bud. Stamens 5, inserted near corolla throat, exerted or included; filaments short; anthers basifixed, partially to fully exerted. Ovary 2-celled, ovules numerous in each cell on fleshy, pendulous, axile placents attached in upper third of septum; stigma clavate to mitriform (i.e., upside-down cupular), exerted. Fruit capsular, obvoid to ellipsoid, septicidally then loculicidally dehiscent, cartilaginous to woody, with calyx limb persistent or deciduous; seeds numerous, small, somewhat flattened, fusiform to lanceolate, shortly winged at both ends with basal wing sometimes bifid or notched.

About seven species: one species in Africa, six species in Asia and Malesia; three species in China.

Ridsdale reviewed this genus in detail (Blumea 24: 46–68. 1978) and excluded the African species. H. H. Hsue and H. Wu (in FRPS 71(1): 245. 1999) reported only Mitragyna rotundifolia from China; Ridsdale (loc. cit.: 65) reported only M. diversifolia from China; and Wu (Acta Phytotax. Sin. 6: 293. 1957) reported a third species, M. hirsuta, in a report that has been overlooked. Several other species of Mitragyna are found widely in Thailand and Myanmar, as well as cultivated for lumber, and should be expected in China (in particular, see comments under M. diversifolia). The leaves of M. speciosa (Korthals) Haviland are the source of kratom and used for tea, chewing, smoking, and as medicine in Thailand and Malaysia; the main active ingredient here is the alkaloid mitragynine, known only from this species and said to be stimulating at low doses but narcotic at high doses.

1a. Calyx limb deeply lobed, with lobes 1.5–2.5 mm, spatulate to oblanceolate, usually quite evident on fruit. ........................................ 2. M. hirsuta

1b. Calyx limb subtruncate or lobed for up to 1/2, with lobes up to 1 mm, triangular, deciduous or at least hardly evident on fruit.

2a. Branch leaves 6–14 × 3–9 cm, with secondary veins strongly ascending (i.e., departing midrib at 55°–75°); corolla tube ca. 3 mm, lobes ca. 2.5 mm ........................................................................................................................................ 1. M. diversifolia

2b. Branch leaves 9–25 × 6–20 cm, with secondary veins spreading (i.e., departing midrib at 35°–60°); corolla tube 2–3 mm, lobes 4–5 mm ........................................................................................................................................ 3. M. rotundifolia


异叶帽蕊木 yi ye mao rui mu

Nauclea diversifolia Wallich ex G. Don, Gen. Hist. 3: 467. 1834; Stephgeyne diversifolia (Wallich ex G. Don) J. D. Hooker.

Trees, perhaps deciduous, to 15 m tall; branches angled becoming terete, pilosulous to glabrescent. Petiole 5–15 mm, glabrous, puberulent, or pilosulous; leaf blade drying papery, ovate-oblong to elliptic-ovate, 6–14 × 3–9 cm, adaxially glabrous, abaxially sparsely to densely pilosulous or tomentulose, base rounded to cordulate, apex obtuse to shortly acuminate; secondary veins 8 or 9 pairs, strongly ascending, sometimes with pilosulous domatia in abaxial axes; stipules elliptic-oblong to ovate, ca. 2.5 cm, strigilllose to glabrous, abaxially weakly to strongly keeled and pilosulous, apex obtuse to rounded. Inflorescence densely pilosulous or strigilllose to glabrescent; peduncles 1–3 mm (i.e., portion above articulation of subtending leaves but not including entire growth of branch); flowering heads 3 to numerous, 8–10 mm in diam. across calyces, 13–20 mm in diam. across corollas; bracteoles linear-spatulate, ca. 3 mm, glabrous to sparsely ciliolate. Calyx glabrous; ovary portion obconic, ca. 1.5 mm; limb ca. 1.5 mm, subtruncate to lobed for up to ca. 1/2; lobes triangular, obtuse. Corolla yellowish white, outside glabrous, inside densely pilosulous in throat and on lobes; tube ca. 3 mm; lobes triangular, ca. 2.5 mm, acute. Fruiting heads 8–10 mm in diam. Capsules 3–4 mm, with persistent calyx limb markedly thickened; seeds 1–2 mm. Fl. [Feb, Jul, Aug], fr. [Jan, Mar, Dec].

Forests; [300–400 m]. Yunnan [Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam].

This species seems to be similar to and at least sometimes confused with the commonly collected Mitragyna parvifolia (Rodulph) Korthals; these species differ at least in their corollas, with the tube 5–6 mm and substantially longer than the lobes ca. 2 mm in M. parvifolia, vs. the tube ca. 3 mm and less than twice as long as the lobes ca. 2.5 mm in M. diversifolia. Ridsdale (Blumea 24: 63–65. 1978) reported a difference in the distribution of these, with M. parvifolia primarily found in India and Sri Lanka and M. diversifolia to the north and east of this, including China. Puff et al. (Rubiaaceae of Thailand, 46. 2005) noted that in Thailand M. diversifolia is most often found in deciduous vegetation and is common in secondary vegetation, in particular in edges along fields.

毛帽蕊木 mao mao rui mu

*Paradina hirsuta* (Haviland) Pitard.

Trees, deciduous, to 20 m tall; branches angled to terete, densely pilosulous to glabrescent. Petiole 5–30 mm, glabrous to densely pilosulous; leaf blade drying stiffly papery, suborbicular to broadly elliptic or ovate, 8–18(–30) × 2–12(–20) cm, adaxially glabrous, abaxially sparsely to densely pilosulous or rarely glabrescent, base broadly obtuse to cordulate, apex rounded to acute; secondary veins 6–12 pairs, spreading, sometimes with pilosulous domatia in abaxial axils; stipules elliptic-oblong to ovate, 10–20 × 8–15 mm, pilosulous and weakly keeled, apex obtuse to rounded. Inflorescences densely puberulent to pilosulous; flowering heads sessile, 7 to numerous, 10–12 mm in diam. across calyces, 20–25 mm in diam. across corollas; bracteoles linear-spatulate, 2.5–3.5 mm, glabrous to sparsely pubescent and/or ciliolate. Calyx glabrous; ovary portion obconic, 1.2–2 mm; limb deeply lobed; lobes oblanceolate to spatulate, 1.5–2.5 mm, entire to ciliolate. Corolla yellow, outside glabrous, inside densely hairy; tube 5–6 mm; lobes narrowly elliptic, 2–2.5 mm, acute. Fruiting heads 15–20 mm in diam. Capsules 5–8 mm, weakly ridged; seeds ca. 1 mm. Fl. [Jun–Jul, Dec], fr. [Apr, Dec].

Forests; [100–1500 m]. Yunnan [Cambodia, Laos, Myanmar, Thailand, Vietnam].

This species was illustrated by Ridsdale (Blumea 24: 60, f. 6. 1978).


帽蕊木 mao rui mu

*Nauclea rotundifolia* Roxburgh, Fl. Ind. 2: 124. 1824; *Mitragyna brunonis* (Wallich ex G. Don) Craib; *N. brunonis* Wallich ex G. Don.

Trees, perhaps deciduous, to 30 m tall; branches angled to subterete, glabrous to glabrescent. Petiole 15–60 mm, glabrous to densely pilosulous; leaf blade drying papery, suborbicular to broadly elliptic or ovate, 9–25 × 6–20 cm (to 75 cm on seedlings and sprouts), adaxially glabrous to puberulent, abaxially sparsely to densely pilosulous or tomentulose, base rounded to cordate, apex rounded to obtuse; secondary veins 5–7 pairs, spreading, sometimes with pilosulous domatia in abaxial axils; stipules elliptic-oblong to ovate, 13–50 × 5–30 mm, pilosulous, keeled, apex obtuse to rounded. Inflorescences densely puberulent to pilosulous; peduncles 1–3 mm (i.e., portion above articulation of subtending leaves but not including internode below node bearing inflorescence); flowering heads 1–5, 7–10 mm in diam. across calyces, 15–20 mm in diam. across corollas; bracteoles linear-spatulate, 1–1.5 mm, glabrous or sparsely pubescent. Calyx glabrous; ovary portion 1.5–3 mm; limb ca. 0.5 mm, subtruncate to lobed for ca. 1/2; lobes triangular, obtuse. Corolla yellowish white, outside glabrous, densely hairy inside; tube 2–3 mm; lobes narrowly oblanceolate, 4–5 mm, acute. Fruiting heads 10–16 mm in diam. Capsules 3–5 mm, weakly ridged, with persistent calyx thickened; seeds ca. 1 mm. Fl. [Aug–Nov], fr. Sep, Dec.

Dense forests; ca. 1000 m. S Yunnan [Bangladesh, India, Laos, Myanmar, Thailand].

This species was illustrated by Ridsdale (Blumea 24: 66, f. 8. 1978). Puff et al. (Rubiaceae of Thailand, 46. 2005) noted that in Thailand this species is most often found in deciduous vegetation and is common in secondary vegetation.