

25. MACARANGA Du Petit-Thouars, Gen. Nov. Madagasc. 26. 1806.

血桐属 xue tong shu

Qiu Huaxing (丘华兴 Chiu Hua-hsing, Kiu Hua-shing, Kiu Hua-xing); Michael G. Gilbert

Trees or shrubs, mostly dioecious (some forms of *M. andamanica* monoecious); indumentum usually of simple hairs and whitish to reddish glandular scales. Leaves alternate; stipules small or enlarged; petiole insertion often peltate; leaf blade undivided or lobed, base with glands, abaxially glandular-scaly; venation palmate or pinnate. Inflorescences axillary, sometimes at old leafless nodes, unbranched, branched, or females capitate or 1-flowered, unisexual, very rarely bisexual (*M. andamanica*); bracts sometimes with glands. Flowers 1 or few to many per bract. Male flowers: calyx closed in bud; sepals 2–4, valvate; petals absent; disk absent; stamens [1–]2–22[–30]; filaments free or shortly connate; anthers 3- or 4-locellate; pistillode absent. Female flowers: calyx cup-shaped or urceolate, apex denticulate or lobed, sometimes truncate, caducous or persistent; petals absent; disk absent; ovary 1–6-locular; styles simple, free, rarely shortly connate, stigmatic surface papillose. Fruit a capsule, (1 or)2- or 3(–6)-locular, smooth or spiny, often glandular scaly. Seeds subglobose, smooth.

About 260 species: Africa, tropical Asia, Australia, Madagascar, Pacific islands; ten species in China.

This account has been revised in line with the posthumous “Prodrum of *Macaranga*” of T. C. Whitmore, which was in press at the time of writing.

- 1a. Stipules subulate, erect, crowded at branchlet tips; male inflorescences spicate.
 - 2a. Stipules and bud scales chocolate brown, with sparsely spreading white hairs; female spikes with terminal flowers and fruits; male spikes threadlike, flower clusters 1–1.5 mm wide, never malformed 1. *M. andamanica*
 - 2b. Stipules and bud scales chestnut brown, glabrous; female flowers and fruits spaced along top of spike; male spikes with ca. 1 mm in diam. axis, flower clusters 3–4 mm wide, often malformed as witches’ brooms 2. *M. lowii*
- 1b. Stipules broadly lanceolate to ovate; male inflorescences paniculate with 2 or 3(or 4) orders of branching.
 - 3a. Leaves peltate, petiole inserted (0.3–)1–4 cm from margin; branchlets often 8–10 mm thick.
 - 4a. Twigs strongly angled and ridged, densely fawn-furfuraceous; stipules lanceolate, 7–8 mm 3. *M. denticulata*
 - 4b. Twigs terete, furfuraceous, glabrescent; stipules ovate to broadly ovate or triangular, 1.5–3 mm.
 - 5a. Stipules ovate, erect, subpersistent; leaves without glands near petiole insertion 4. *M. tanarius*
 - 5b. Stipules broadly ovate, sometimes recurved, soon caducous; leaves nearly always with a few conspicuous glands on main veins near petiole insertion 5. *M. indica*
 - 3b. Leaves not or only narrowly peltate with petiole inserted 0.1–0.3 cm from margin; branchlets 2–4 mm thick.
 - 6a. Leaf apex caudate, sometimes tricuspid; stipules filiform, 3–4 mm; styles ca. 10 mm, threadlike 6. *M. kurzii*
 - 6b. Leaf apex acute to acuminate or broadly cuspidate-acuminate; stipules ovate-oblong or lanceolate, 5–14 × 2–4 mm; styles to 7 mm.
 - 7a. Leaf blade 10–25 × 3.5–7 cm; male inflorescences 6–10 cm, branches ca. 3 cm; fruiting pedicel 7–15 mm 7. *M. henryi*
 - 7b. Leaf blade 8–16 × 4–15 cm; male inflorescences 8–14 cm, branches 3–8 cm; fruiting pedicel 2–7 mm.
 - 8a. Twigs glabrous; stipules glabrous, somewhat persistent 8. *M. sinensis*
 - 8b. Twigs yellowish brown tomentose when young; stipules furfuraceous or tomentose, sometimes caducous.
 - 9a. Stipules ovate-lanceolate or triangular, 4–6 mm wide, tomentose, recurved, subpersistent; leaf margin repand or subentire 9. *M. pustulata*
 - 9b. Stipules lanceolate, 2–3 mm wide, pubescent, erect, soon caducous; leaf margin repand or coarsely serrate 10. *M. sampsonii*

1. *Macaranga andamanica* Kurz, Forest Fl. Burma 2: 389. 1877.

轮苞血桐 lun bao xue tong

Macaranga bracteata Merrill; *M. brandisii* King ex J. D. Hooker; *M. esquirolii* (H. Léveillé) Rehder; *M. kampoensis* Gagnepain; *M. rosuliflora* Croizat; *M. trigonostemonoides* Croizat; *Morinda esquirolii* H. Léveillé.

Shrubs 1–5 m tall. Branchlets pubescent, glabrescent. Stipules elliptic, 3–5[–8] mm, chocolate brown, apex subulate,

deciduous; petiole 2–4 cm, pilose; leaf blade oblong-lanceolate or oblong, 7–14 × 2.5–5.5 cm, thickly papery, often drying dull brown, abaxially sparsely dark glandular-scaly, midrib pilose, base slightly auriculate-cordate, with 2 glands, margin sparsely glandular-denticulate, apex acuminate; veins 5–8 pairs. Male inflorescences very slender, (1.5–)4–9 cm; peduncle slender, 0.5–2 cm; axis glabrous or pilose; bracts deltoid, ca. 1 mm. Male flowers tiny, 3–5 per bract, surrounded by persistent whorl of 3 or 4 hooded bracteoles; pedicel ca. 1 mm, pilose; sepals 3, ovate, ca. 1.5 mm, glabrous; stamens 20–22. Female inflorescences often 1-flowered, sometimes inflorescence

bisexual, with 1 or 2 male flowers; peduncle slender, 3–9 cm; flower subtended by pair of leafy bracts. Female flowers: pedicel 1–2 mm; sepals 4, lanceolate, 2–3 mm, pilose; ovary 2-locular; styles 2, filiform, 1.2–1.4 cm, basally connate. Capsule 2-lobed, ca. 5 × 11–12 mm wide, densely glandular-scaly, with sparse long sinuous caducous spines. Seeds subglobose, ca. 5 mm in diam., brownish, marbled. Fl. and fr. year-round.

Hills, mountain valleys, thickets; 100–400 m. Guangdong, Guangxi, Guizhou, Hainan, S Yunnan [India (Andaman Islands), Malaysia, Myanmar, Thailand, N Vietnam].

2. *Macaranga lowii* King ex J. D. Hooker, Fl. Brit. India 5: 453. 1887.

刺果血桐 ci guo xue tong

Macaranga auriculata (Merrill) Airy Shaw; *M. lowii* var. *kostermansii* Airy Shaw; *M. poilanei* Gagnepain; *Mallotus affinis* Merrill; *M. auriculatus* Merrill; *M. tsiangii* Merrill & Chun.

Trees 5–15 m tall. Branchlets pubescent when young, glabrescent. Stipules subulate, 2.5–3 mm, deciduous; petiole 2–3.5 cm, sparsely villous; leaf blade elliptic to broadly lanceolate, 8–16 × 3–6 cm, thickly papery, abaxially sparsely glandular-scaly, pilose along midrib, base rounded to cuneate, minutely auriculate-cordate, with 2 or 4 glands, margin entire or repand, apex acuminate; veins 8–10 pairs. Male inflorescences unbranched or sparsely branched, 6–9 cm, pilose; bracts ovate, 2–3 mm, pilose, rarely some bracts lanceolate, filiform, 1–2 cm. Male flowers 5–7 per bract; pedicel ca. 1.5 mm, pubescent; sepals 3 or 4, ovate, pilose; stamens 12–16. Female inflorescences unbranched, 4–6 cm, pilose; bracts 4–7, lower bracts leaflike, lanceolate to ovate, 1–1.2 cm, glabrous, other bracts deltoid-ovate, ca. 1 mm, pilose. Female flower solitary; pedicel 1–2(–6) mm, pubescent; sepals 3 or 4, lanceolate, ca. 2 mm, pilose, persistent; ovary softly spiny; styles 2, filiform, 7–12 mm, basally connate. Fruiting pedicel 2–4 mm; capsule 2-lobed, to 12 mm wide, sparsely softly spiny and blackish glandular scaly. Seeds subglobose, ca. 5 mm in diam., black-brownish, marbled. Fl. Jan–May, fr. May–Jun.

Mountain slopes, forests; 100–500 m. S Fujian, Guangdong, S Guangxi, Hainan [Indonesia, Malaysia, Philippines, Thailand, Vietnam].

3. *Macaranga denticulata* (Blume) Müller Argoviensis in A. Candolle, Prodr. 15(2): 1000. 1866.

中平树 zhong ping shu

Mappa denticulata Blume, Bijdr. 625. 1826; *Macaranga chatiniana* (Baillon) Müller Argoviensis; *M. denticulata* var. *zollingeri* Müller Argoviensis; *M. gummiflua* (Miquel) Müller Argoviensis; *M. henricorum* Hemsley; *M. perakensis* J. D. Hooker; *Mappa chatiniana* Baillon [“*chantiniana*”]; *M. gummiflua* Miquel; *M. truncata* Müller Argoviensis; *M. wallichii* Baillon; *Rottlera glauca* Hasskarl.

Small trees 3–15 m tall. Branchlets ferruginous or yellowish brown tomentose when young; branches glabrous, sometimes glaucous. Stipules lanceolate, 7–8 mm, tomentose, caducous; petiole 5–20 cm; leaf blade deltoid-ovate or broadly

ovate, 12–30 × 11–28 cm, thinly leathery or thickly papery, abaxially pubescent, densely glandular scaly, adaxially glabrescent, base obtuse or subtruncate, narrowly peltate, rarely subcordate, with 2 or 4 glands, margin repand or subentire, apex cuspidate-acuminate, palmately 7–9-veined. Male inflorescences branched, 5–10 cm, tomentose; bracts suboblong, 2–3 mm, margin 2–4-glandular, or triangular, ca. 1 mm. Male flowers 3–7 per bract; pedicel ca. 0.5 mm; calyx 2- or 3-lobed, ca. 1 mm; stamens 9–16(–21). Female inflorescence branched, 4–8 cm, tomentose; bracts oblong or ovate, leaflike, 5–7 mm, margin 2–6-glandular, or triangular. Female flower solitary; calyx cup-shaped, 2-lobed, ca. 1.5 mm; ovary 2(or 3)-locular, puberulent; styles 2(or 3), ca. 1 mm. Fruiting pedicel 3–5 mm; capsule 2-lobed, 5–6 mm in diam., densely glandular-scaly; persistent calyx 3- or 4-lobed. Fl. Apr–Jun, fr. May–Oct.

Low hills, slopes, forests, secondary forests; below 100–1300 m. Guangxi, S Guizhou, Hainan, SE Xizang (Médog), S and SE Yunnan [Bhutan, NE India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam].

4. *Macaranga tanarius* (Linnaeus) Müller Argoviensis var. ***tomentosa*** (Blume) Müller Argoviensis in A. Candolle, Prodr. 15(2): 997. 1866.

血桐 xue tong

Mappa tomentosa Blume, Bijdr. 624. 1826; *Croton laccifer* Blanco (1837), not Linnaeus (1753); *Macaranga molliuscula* Kurz; *M. tanarius* var. *brevibracteata* Müller Argoviensis; *Rottlera tomentosa* (Blume) Hasskarl.

Trees 5–10 m tall. Branchlets yellowish brown pubescent when young; branches stout, glabrous, glaucous. Stipules ovate, acuminate, 1.5–3 × 0.7–2 cm, pubescent, deciduous; petiole 10–30 cm; leaf blade ovate-orbicular or suborbicular, 17–30 × 14–24 cm, papery, abaxially glandular-scaly, pubescent along veins, adaxially glabrous, base rounded and broadly peltate, margin entire or serrulate, apex acuminate; palmate veins 7–11. Male inflorescences branched, 5–14 cm; axes slender, pubescent or glabrous; bracts broadly ovate, 3–5 × 3–4.5 mm, fimbriate, pubescent. Male flowers ca. 11 per bract; pedicel ca. 0.5 mm; sepals 3, ca. 1 mm, pilose; stamens (4 or)5 or 6(–10). Female inflorescences branched, 5–15 cm, pilose; bracts ovate, leaflike, 1–1.5 cm, margin fimbriate, pubescent. Female flower solitary; calyx 2- or 3-lobed, pubescent; ovary 2- or 3-locular, sparsely softly spiny; styles 2 or 3, sublingulate, ca. 6 mm. Capsule 2- or 3-locular, ca. 12 mm in diam., densely glandular scaly, scattered softly spiny, ca. 8 mm. Seeds subglobose, ca. 5 mm. Fl. Apr–Jun, fr. Jun–Jul.

Maritime areas, forests, also cultivated in gardens; below 100 m. S Guangdong, Taiwan [E India, Indonesia, Japan (Ryukyu Islands), Malaysia, Myanmar, Philippines, Thailand, Vietnam; N Australia].

The distribution of *Macaranga tanarius* var. *tanarius* is India (Andaman and Nicobar Islands), Indonesia, Myanmar, Philippines, Thailand, Vietnam; N Australia, Pacific islands (Solomon Islands, Vanuatu).

5. *Macaranga indica* Wight, Icon. Pl. Ind. Orient. 5: 23. 1852.

印度血桐 yin du xue tong

Macaranga adenantha Gagnepain.

Trees 10–25 m tall. Branchlets yellowish brown pubescent when young; branches stout, glabrous, slightly glaucous. Stipules broadly ovate, acuminate, 1.5–2 × ca. 1 cm, pubescent, recurved, deciduous; petiole 11–14 cm; leaf blade ovate-orbicular, 14–25 × 13–23 cm, thinly leathery, abaxially pubescent and glandular-scaly, adaxially glabrous or pilose along veins, base rounded and broadly peltate, with glands, margin serrulate, apex acuminate; palmate veins 9. Male inflorescences branched, 10–15 cm, branchlets zigzag; bracts linear-spatulate, 4–7 mm, with 1–3 elliptic glands, or bracts minute, triangular. Male flowers many per bract; pedicel ca. 1 mm, pilose; sepals 3, ovate, ca. 1 mm, glabrous; stamens 5–7. Female inflorescences branched, 5–6 cm; bracts triangular, ca. 1 mm, pubescent. Female flower solitary; sepals 4, ca. 1.5 mm, pilose, persistent; ovary 1-locular; style 1, subulate, ca. 1.5 mm. Capsule globose, ca. 4 mm in diam., sparsely glandular-scaly; pedicel 3–4 mm, pubescent. Seeds smooth, black. Fl. Aug–Oct, fr. Oct–Nov.

Valleys, riverbanks, primary or secondary forests; 300–1900 m. Guangdong, Guangxi, SW Guizhou, SE Xizang (Médog), S Yunnan [Bhutan, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

The type of *Trewia hernandiifolia* Roth (Nov. Pl. Sp. 374. 1821) has not been located. The protologue suggests that it could provide an earlier epithet for *Macaranga indica*, which was published more than 30 years later.

6. *Macaranga kurzii* (Kuntze) Pax & K. Hoffmann in Engler, Pflanzenr. 63(IV. 147. VII): 360. 1914.

尾叶血桐 wei ye xue tong

Tanarius kurzii Kuntze, Revis. Gen. Pl. 619. 1891, based on *Macaranga membranacea* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42: 246. 1873, not Müller Argoviensis (1866); *M. andersonii* Craib.

Shrubs or small trees, 1–7 m tall. Branchlets yellowish brown pubescent and villous; branches glabrous. Stipules filiform, ca. 3 mm, pilose, caducous; petiole 3.5–6 cm; leaf blade rhombic-ovate or triangular-ovate, sometimes shortly 3-cuspid, 8–14 × 5–8 cm, membranous, abaxially pubescent and sparsely glandular-scaly, adaxially pubescent along veins, base slightly cordate, with 2 or 4 glands, margin entire or minutely denticulate, apex caudate; basal veins 3, lateral veins 5 or 6 pairs. Male inflorescences paniculate, 5–11 cm, pubescent; bracts leaflike, ovate, 1–2.5 × ca. 1 cm, or triangular-ovate, 1–1.5 mm. Male flowers ca. 10, glomerate; sepals 3 or 4, 1.5–2 mm, pubescent; stamens 18–20. Female inflorescences capitate; peduncle 6–12 cm; bracts 2, large, subovate, 1.7–2.5 × 1–1.4 cm, margin serrate, upper part with 4–6 patelliform glands, pilose, or bracts 2 or 3, often lanceolate, ca. 2 mm. Female flower solitary; pedicel ovary 2-locular, sparsely softly echinate; style 2, filiform, 1–2 cm, base connate. Capsule 2-lobed, ca. 12 mm in diam., sparsely softly echinate and glandular-scaly. Fl. Mar–Oct, fr. May–Dec.

Mountain slopes, valleys, forests, dry thickets; 300–1600 m. SW Guangxi, Yunnan [Laos, Myanmar, N Thailand, N Vietnam].

7. *Macaranga henryi* (Pax & K. Hoffmann) Rehder, Sunyatsenia 3: 340. 1936.

草鞋木 cao xie mu

Mallotus henryi Pax & K. Hoffmann in Engler, Pflanzenr. 63(IV. 147. VII): 177. 1914.

Shrubs or trees, 2–16 m tall. Branchlets ferruginous tomentulose; branches glabrous, often glaucous. Stipules lanceolate, 5–8 mm, pilose, caducous; petiole 2.5–10 cm; leaf blade oblong-ovate or oblong-lanceolate, 10–25 × 3.5–7 cm, papery to thickly papery, abaxially sparsely glandular-scaly, puberulent along veins, becoming glabrous, base rounded to subtruncate, narrowly peltate or slightly cordate, with 2 or 4 glands, margin repand or subentire, apex acuminate or caudate; veins 7–10 pairs. Male inflorescences branched, 6–10 cm, glabrescent; bracts triangular, ca. 1.5 mm. Male flowers 3–5 per bract; pedicel ca. 1 mm; sepals 3, ca. 1 mm; stamens 6–12. Female inflorescences unbranched or with a few branches, 5–12 cm, glabrous; bracts triangular, ca. 2 mm, sometimes lowermost 1 or 2 bracts leaflike, 1–3 cm. Female flower solitary; pedicel 3–10 mm; calyx urceolate, ca. 3 mm, 4-denticulate or subtruncate, basally pilose, deciduous; ovary 2-locular, sparsely softly spiny; style 2, 6–10 mm, base or half of length connate. Fruiting pedicel 7–15 mm; capsule 2-lobed, ca. 8 mm wide, sparsely glandular-scaly and with a few spines. Fl. Mar–May, fr. Jul–Sep.

Mountain slopes, limestone hills, forests; 300–1400 m. Guangxi, S Guizhou, S and SE Yunnan [N Vietnam].

8. *Macaranga sinensis* Baillon ex Müller Argoviensis in A. Candolle, Prodr. 15(2): 1001. 1866.

台湾血桐 tai wan xue tong

Macaranga dipterocarpifolia Merrill.

Shrubs or small trees. Branches glabrous. Stipules lanceolate, ca. 8 mm, deciduous; petiole 5–10 cm; leaf blade ovate, 13–20 × 8–12 cm, thinly leathery, abaxially sparsely glandular scaly, base subtruncate, shallowly peltate, or slightly cordate, with 2 glands, margin repand-serrulate, apex acuminate, glabrous; veins palmate. Male inflorescences branched, 10–15 cm, glabrous; bracts triangular-lanceolate, 6–8 mm, with 5–7 disciform glands, or spatulate, 3–4 mm, with 1 disciform gland. Male flowers many per bract; sepals 4; stamens 5–7. Female inflorescences branched, 10–14 cm; bracts spatulate, with paired disciform gland. Female flower 1–3 per bract; sepals 3 or 4, ca. 1 mm; ovary 2-locular; styles 2, ca. 1 mm, basally connate. Capsule 2-locular, sparsely glandular-scaly. Fl. May–Jun.

Littoral forests; below 100 m. Taiwan (Huoshao Dao, Lan Yu) [Indonesia, Philippines].

9. *Macaranga pustulata* King ex J. D. Hooker, Fl. Brit. India 5: 445. 1887.

泡腺血桐 pao xian xue tong

Macaranga denticulata (Blume) Müller Argoviensis var. *pustulata* (King ex J. D. Hooker) Chakrabarty & M. Gangopadhyay; *M. gmelinifolia* King ex J. D. Hooker; *Tanarius gmelinifolius* (King ex J. D. Hooker) Kuntze; *T. pustulatus* (King ex J. D. Hooker) Kuntze.

Small trees or shrubs, 3–12 m tall. Branchlets yellowish brown tomentose when young, glabrescent. Stipule ovate-lanceolate or triangular, 7–10 × 4–6 mm, tomentose, upper part recurved; petiole 5–12 cm, pilosulose or glabrous; leaf blade subdeltoid, orbicular-ovate, or ± rhombic, 10–21 × 9–20 cm, papery or thickly papery, abaxially glabrescent, sparsely glandular scaly, adaxially glabrous, base broadly cuneate, truncate, or subcordate, very narrowly peltate or not, with 2 large glands, margin repand or subentire, apex cuspidate-acuminate; palmate veins 3(–5). Male and female inflorescences branched, 4–8 cm, pubescent, soon glabrescent; bracts lanceolate or deltoid, 1–3.5 mm, margin sometimes 2-glandular. Male flowers 5–9 per axil; pedicel ca. 0.5 mm; sepals 3, oblong, ca. 2 mm, pilose or glabrous; stamens 15–20. Female flowers 1 per bract; calyx ca. 1

mm, 3-lobed, tomentose, deciduous; ovary tomentose; styles 2, lingulate, ca. 1 mm, recurved. Fruiting pedicel 1–2 mm, pilose; capsule 2-lobed, ca. 8 mm wide, tomentose, sparsely glandular-scaly, coccus with 2 abaxial glands. Fl. Oct–Dec, fr. following Apr–May.

Secondary forests, mountain slopes, valleys, clearings; 1100–2100 m. S Xizang (Médog, Nyalam), SW Yunnan [Bhutan, India, Nepal].

10. *Macaranga sampsonii* Hance, J. Bot. 9: 134. 1871.

鼎湖血桐 ding hu xue tong

Macaranga balansae Gagnepain; *M. hemsleyana* Pax & K. Hoffmann; *Mallotus populifolius* Hemsley (1894), not (Miquel) Müller Argoviensis (1866).

Small trees or shrubs, 2–7 m tall. Branchlets yellowish brown tomentose when young, becoming glabrous, sometimes glaucous. Stipules lanceolate, 7–10 × 2–3 mm, pubescent, deciduous; petiole 5–13 cm, pilose; leaf blade deltoid-ovate or orbicular-ovate, 12–17 × 11–15 cm, thinly leathery, abaxially pubescent and sparsely glandular-scaly, base subtruncate or broadly cuneate and narrowly peltate, with 2 glands, margin repand or coarsely serrate, apex acuminate; palmate veins 7–9. Male and female inflorescences paniculate, 7–14 cm, pubescent; bracts ovate-lanceolate, 5–12 mm, apex caudate, margin 1–3-dentate. Male flowers 5 or 6 per bract; pedicel ca. 1 mm; sepals 3, ca. 1 mm, puberulent; stamens (3 or)4(or 5). Female flower solitary; sepals (3 or)4, ovate, ca. 1.5 mm, pubescent; ovary 2-locular; style 2, ca. 2 mm. Fruiting pedicel 2–4 mm; capsule 2-lobed, ca. 8 mm wide, glandular-scaly. Fl. May–Jun, fr. Jul–Aug.

Mountain slopes, valleys, forests; 200–800 m. SW Fujian, Guangdong, Guangxi, Hainan, Yunnan [N Vietnam].

Fl. China 11: 237–240. 2008.