

1. MAESA Forsskål, Fl. Aegypt. Arab. 66. 1775.

杜荃山属 du jing shan shu

Shrubs or rarely small trees. Leaves entire, serrate, or dentate at margin, usually punctate. Inflorescences racemose, often paniculate; bracts small; bracteoles 2, usually subtending base of calyx. Flowers 5-merous, bisexual or polygamous. Calyx funnelform, adnate to ovary, lobes valvate. Corolla white or yellowish, campanulate, often punctate-lineate. Stamens free, included. Ovary semi-inferior or inferior, aborted in staminate flowers; ovules numerous, on a globose free-central placenta. Style as long as or longer than stamens; stigma entire or 3–5-lobed. Fruit globose or ovoid berries or drupes with a crustose endocarp, apex ± covered by persistent calyx, often longitudinally orange punctate-lineate. Seeds small, numerous, angular, embedded in a hollow placenta.

About 200 species: primarily in Old World tropics; 29 species in China.

- 1a. Branchlet apex hirsute, hirtellous, puberulent, pilose, velutinous, or brown scaly.
 - 2a. Branchlets brown scaly.
 - 3a. Leaf blade leathery, rugose, apex cuspidate-acuminate, acumen 4–6 mm; petiole thick, 2–3.5 cm 1. *M. rugosa*
 - 3b. Leaf blade papery, not rugose, apex caudate-acuminate, acumen 8–20 mm, petiole thin, 0.7–1.5 cm 2. *M. chisia*
 - 2b. Branchlets white pilose-tomentulose or brown velutinous tomentulose, hirsute, or hirtellous and reddish glandular granulose.
 - 4a. Branchlets white pilose-tomentulose or brown velutinous-tomentulose.
 - 5a. Branchlets white pilose-tomentulose.
 - 6a. Leaf blade leathery, secondary veins connected by submarginal vein 3. *M. cavinervis*
 - 6b. Leaf blade membranous, secondary veins free to margin, without submarginal vein 4. *M. montana*
 - 5b. Branchlets brown velutinous-tomentulose.
 - 7a. Leaf blade linear-lanceolate; calyx lobes densely dull red punctate and punctate-lineate 5. *M. macilentoides*
 - 7b. Leaf blade lanceolate to ovate; calyx lobes puberulent or inconspicuously pellucid.
 - 8a. Inflorescences punctate 5–8 mm; leaf base obtuse 6. *M. brevipaniculata*
 - 8b. Inflorescences (10–)20–40 mm; leaf blade base truncate to cordate 7. *M. macilenta*
 - 4b. Branchlets hirsute or stramineous hirtellous and reddish glandular granulose.
 - 9a. Plants hirsute.
 - 10a. Petiole 1.2–2.5 cm; pith hollow.
 - 11a. Plants gray hirsute; branchlets terete; inflorescences racemose, ca. 6 cm; leaf blade apex caudate-acuminate, margin serrate, teeth not callose 8. *M. insignis*
 - 11b. Plants reddish hirsute; branchlets angular; inflorescences glomerate or paniculate, rarely to 4 cm; leaf blade apex cuspidate, margin serrate or dentate, teeth callose 9. *M. permollis*
 - 10b. Petiole 0.4–1(–1.2) cm; pith solid.
 - 12a. Inflorescences racemose, 0.4–1 cm; leaf blade oblanceolate 10. *M. ambigua*
 - 12b. Inflorescences few-branched panicles, 3–7 cm; leaf blade lanceolate 11. *M. longilanceolata*
 - 9b. Plants hirtellous and glandular granulose.
 - 13a. Petiole 0.4–1 cm; leaf blade base obtuse to rounded.
 - 14a. Calyx lobes acuminate; pedicel 1.5–2 mm 2. *M. parvifolia*
 - 14b. Calyx lobes acute; pedicel 1.2–1.5 mm 13. *M. marionae*
 - 13b. Petiole 1–2(–3) cm; leaf blade base acute.
 - 15a. Inflorescences racemose-spicate; pedicel obsolete to 0.8 mm; calyx conic 14. *M. argentea*
 - 15b. Inflorescences paniculate or rarely racemose; pedicel 1.8–2 mm; calyx discoid 15. *M. perlarius*
 - 1b. Branchlet apex glabrous or glandular granulose, early glabrescent.
 - 16a. Branchlet apex glabrous.
 - 17a. Leaf blade leathery, apex cuspidate; inflorescences glomerate, shorter than petiole 16. *M. reticulata*
 - 17b. Leaf blade membranous or papery, apex caudate-acuminate; inflorescences paniculate, longer than petiole.
 - 18a. Leaf blade membranous, adaxially dull, abaxially and hypanthium densely black punctate-lineate; inflorescence rachis and pedicels densely and minutely glandular granulose 7. *M. striatocarpa*
 - 18b. Leaf blade papery, adaxially glossy, abaxially and hypanthium inconspicuously pellucid punctate; inflorescence rachis and pedicels glabrous and glossy 18. *M. acuminatissima*
 - 16b. Branchlet apex glandular granulose, early glabrescent.
 - 19a. Leaf blade margin undulate, subentire, or entire.
 - 20a. Leaf blade membranous or papery; pedicel 1–2 mm.

- 21a. Branchlets terete, lenticellate; calyx lobes densely punctate-lineate; bracts and bracteoles wider than long; inflorescence rachis and pedicels glabrous 22. *M. consanguinea*
- 21b. Branchlets angular, without lenticels; calyx lobes punctate; bracts and bracteoles longer than wide; inflorescence rachis and pedicels minutely glandular granulose 23. *M. ramentacea*
- 20b. Leaf blade leathery or rarely papery; pedicel 2.5–4 mm.
- 22a. Leaves prominently black punctate-lineate; bracts subulate, bracteoles and calyx lobes longer than wide, apery, apex acute 21. *M. hupehensis*
- 22b. Leaves inconspicuously pellucid punctate; bracts, bracteoles, and calyx lobes much wider than long, leathery, apex obtuse to rounded.
- 23a. Leaf blade linear-lanceolate, bullate, margin revolute, entire; fruit reddish, punctate-lineate, wrinkled 19. *M. salicifolia*
- 23b. Leaf blade lanceolate, oblong, or rarely ovate, smooth, flat, margin subentire to serrate distally; fruit yellowish, smooth 20. *M. japonica*
- 19b. Leaf blade margin serrate or serrate-dentate.
- 24a. Petiole 2–4 cm.
- 25a. Inflorescences densely and minutely glandular granulose; pedicel 2–2.5 mm at maturity; branchlets sparingly lenticellate; leaves membranous, adaxially dull 24. *M. confusa*
- 25b. Inflorescences glabrous; pedicel 0.8–1.5(–2) mm at maturity; branchlets without lenticels; leaves thin leathery, adaxially glossy 25. *M. membranacea*
- 24b. Petiole 1–1.8 cm.
- 26a. Calyx lobe and bracteoles obtuse to rounded apically; inflorescence rachis and pedicels densely and minutely glandular granulose 26. *M. indica*
- 26b. Calyx lobe and bracteoles acute apically; inflorescence rachis and pedicels glabrous.
- 27a. Leaf blade membranous, elliptic to ovate, margin serrate, teeth not callose; inflorescences 7–10 cm, racemose 27. *M. tenera*
- 27b. Leaf blade papery, oblong to oblanceolate, margin serrate-dentate, teeth callose; inflorescences 1.5–4 cm, paniculate.
- 28a. Branchlets with hollow pith; leaf base subrounded or obtuse; bracteole and calyx lobe margins glandular ciliate; fruit ovoid 28. *M. manipurensis*
28. Branchlets with solid pith; leaf base cuneate; bracteole and calyx lobe margins glabrous; fruit globose 29. *M. densistriata*

1. *Maesa rugosa* C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 508. 1882.

皱叶杜茎山 *zhou ye du jing shan*

Maesa indica (Roxburgh) A. de Candolle var. *retusa* Handel-Mazzetti.

Shrubs 1–3 m tall. Branchlets and leaves densely brown scaly, glabrescent. Branchlets subterete, 2–3 mm in diam.; pith solid. Petiole canaliculate, 2–3.5 cm; leaf blade broadly obovate, 6–16 × 5–12.5 cm, leathery, rugose, base broadly obtuse to acute, margin serrulate, apex cuspidate-acuminate, acumen 4–6 mm; lateral veins 8–12 on each side of midrib, ending in subapiculate teeth, submarginal vein absent. Inflorescences axillary, paniculate, 3–4 cm, glabrous or puberulent; bracteoles triangular ovate, acute. Flowers creamy yellow, 2–3 mm. Pedicel ca. 1 mm. Calyx lobes broadly ovate, ca. 0.7 mm, orange punctate-lineate, margin entire and ciliate, apex acute or obtuse. Corolla campanulate; lobes as long as tube, ovate or suborbicular, subentire, obtuse or rounded at apex, orange punctate-lineate. Stamens inserted at middle of corolla tube; filaments very short; anthers ovoid. Pistil included. Style cylindrical; stigma lobed. Fruit ovoid, ca. 3 mm in diam., somewhat succulent, pellucid punctate-lineate, slightly longer than persistent calyx lobes. Fl. Jul, fr. Oct.

Mixed forests, scrubs, stream banks, shady places; 2000–2800 m. SE Xizang, NW Yunnan [India].

Leaf apex in var. *retusa* was said to be obtuse, truncate, or slightly retuse, and the taxon probably merits recognition.

2. *Maesa chisia* Buchanon-Hamilton ex D. Don, Prodr. Fl. Nepal. 148. 1825.

密腺杜茎山 *mi xian du jing shan*

Maesa prodigiosa C. Chen.

Shrubs 1–2(–6) m tall. Branchlets angular, sparsely brown scaly, glabrescent, lenticellate; pith solid. Petiole slightly canaliculate, 0.7–1.5 cm; leaf blade oblong, elliptic-lanceolate, to oblanceolate, 8.5–14 × 2.5–5.5 cm, papery, glabrous, base cuneate, margin serrate, densely and minutely orange punctate-lineate, apex caudate-acuminate, acumen 0.8–2 cm; midrib and lateral veins prominently raised abaxially, lateral veins ca. 10 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary on biennial branches, paniculate, 1.5–4 cm in fruit, many branched, glabrous; bracts lanceolate, ca. 0.5 mm; bracteoles ovate, glabrous. Flowers unknown. Pedicel 1–2 mm in fruit, glabrous. Fruit globose, 3–4 mm in diam., somewhat fleshy, glabrous, not punctate; persistent calyx lobes ovate-triangular, glabrous, punctate at tip, ciliate.

Sparse broad-leaved forests, shrubby areas, sunny hillsides; ca. 600–2200 m. SE Xizang, W Yunnan [Bhutan, India, Myanmar, Nepal].

3. *Maesa cavinervis* C. Chen, Acta Phytotax. Sin. 16(3): 79. 1978.

凹脉杜茎山 ao mai du jing shan

Shrubs 3–4 m tall. Branchlets terete, white pilose-tomentulose, glabrescent, striate; pith solid. Petiole canaliculate, 5–10 mm, minutely punctate; leaf blade narrowly lanceolate or lanceolate, 10–18 × 1.7–4 cm, leathery, glabrous, base cuneate or obtuse, densely and minutely punctate, margin serrulate, apex caudate-acuminate; lateral veins 9–15 on each side of midrib, connected by submarginal vein 1–2 mm from margin. Inflorescences axillary, 1- or 2-branched at base, racemose or paniculate, 2–3 cm, puberulent; bracteoles ovate. Corolla ca. 2 mm; lobes elliptic-oblong, longer than tube, glabrous, orange punctate-lineate, margin crenulate, apex subobtusate. Stamens inserted on tube, somewhat exerted. Fruit ovoid, ca. 5 mm in diam., prominently orange punctate-lineate; persistent calyx lobes broadly triangular, auriculate at base, ciliate, orange punctate-lineate, closed at fruit apex. Fr. Aug–Sep.

* Broad-leaved forests, hillsides; 1700–2100 m. Xizang (Motuo).

4. *Maesa montana* A. de Candolle, Prodr. 8: 79. 1844.

金珠柳 jin zhu liu

Maesa argentea (Wallich) A. de Candolle var. *kwangsiensis* Handel-Mazzetti, *M. castaneifolia* Mez; *M. formosana* Mez; *M. henryi* H. H. Hu; *M. martinii* H. Léveillé.

Shrubs or trees 2–3(–10) m tall. Branchlets terete, white pilose-tomentulose, glabrescent; pith solid. Petiole deeply canaliculate, 1–1.5(–1.8) cm; leaf blade elliptic, oblong, or lanceolate, rarely broadly ovate, 7–14(–23) × 3–7(–9) cm, membranous, base cuneate or obtuse, margin coarsely dentate or undulate with punctate teeth, apex acute or acuminate; lateral veins 8–12 on each side of midrib, ending in teeth, glabrescent or hispidulous, submarginal vein absent. Inflorescences axillary, racemose or paniculate, 2–7(–10) cm, hirsute; bracteoles minute, lanceolate or ovate. Flowers ca. 2 mm. Pedicel 1–2(–3) mm. Calyx lobes ovate or oblong, glabrous or sometimes ciliate, entire, apex obtuse. Corolla white, campanulate; lobes ovate, as long as or longer than tube, orange punctate-lineate, margin entire or crenulate, apex obtuse or rounded. Stamens inserted at corolla throat, included; anthers orbicular or reniform. Pistil included. Style persistent; stigma minutely lobed. Fruit white, globose or ovoid, 3–4 mm in diam., orange punctate-lineate; persistent calyx lobes covering 2/3–3/4 of fruit. Fl. Feb–Apr, fr. Oct–Dec.

Mixed forests, hillsides; 400–2800 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Sichuan, Taiwan, SE Xizang, Yunnan [India, Myanmar, Thailand].

5. *Maesa macilentoides* C. Chen, Fl. Yunnan. 1: 817. 1977.

薄叶杜茎山 bao ye du jing shan

Shrubs 2–3 m tall. Branchlets angular, brown velutinous-tomentulose; pith solid. Petiole canaliculate, 3–5 mm; leaf blade linear-lanceolate, 9–15 × 1.8–3 cm, papery, glabrous, prominently thinly black punctate-lineate, base rounded,

margin subentire to sparsely serrulate, apex acuminate or subcaudate-acuminate; lateral veins 10–12 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary, paniculate, 0.7–2 cm, 2- or 3-branched, puberulent; bracteoles ovate. Flowers white, ca. 2 mm. Pedicel 0.5–1 mm. Calyx puberulent, to 1 mm; calyx lobes broadly ovate, red punctate-lineate, margin minutely ciliate, apex obtuse. Corolla tubular-campanulate; lobes broadly ovate or subreniform, shorter than tube, red punctate-lineate, margin crenulate, apex rounded. Stamens inserted at middle of corolla tube; anthers ovate, as long as filaments. Pistil included. Style glandular; stigma apiculate. Fruit globose, ca. 4 mm in diam., fleshy, slightly longitudinally ribbed; persistent calyx lobes reaching conical style base, exposed part ca. 1/3 fruit length. Fl. and fr. Feb.

* Broad-leaved forests, valleys, hilly areas, shady places; 800–1300 m. S Yunnan.

6. *Maesa brevipaniculata* (C. Y. Wu & C. Chen) Pipoly & C. Chen, Novon 5: 357. 1995.

短序杜茎山 duan xu du jing shan

Maesa parvifolia A. de Candolle var. *brevipaniculata* C. Y. Wu & C. Chen, Fl. Yunnan. 1: 324. 1977.

Shrubs 0.5–3 m tall. Branchlets angular, velutinous brown pilosulose-tomentose, barely flexuous; pith solid. Petiole canaliculate, 3–8 mm, pilosulose; leaf blade lanceolate or narrowly ovate, 7–10(–13) × 1.5–2.3(–4.5) cm, glabrous to puberulent, base obtuse, margin undulate to very sparsely serrulate, apex caudate-acuminate; lateral veins ca. 8 on each side of midrib, ending in minute punctate teeth, submarginal vein absent. Inflorescences axillary, paniculate, puberulent, 5–8 mm; bracteoles minute, lanceolate, hirsute. Flowers white, fragrant, ca. 1.5 mm. Pedicel ca. 1.5 mm, puberulent. Calyx lobes broadly ovate, acute or obtuse, puberulent, ciliate, inconspicuously pellucid punctate-lineate. Corolla campanulate, ca. 3 × length of calyx lobes; lobes broadly ovate, subequal tube, crenulate, rounded. Stamens shorter than corolla lobes; anthers broadly ovate or reniform, as long as filaments in staminate flowers. Pistil included. Style short, thick; stigma flattened, somewhat lobed. Fruit unknown. Fl. Apr–Jan.

* Evergreen broad-leaved forests, damp places, hillsides, stream banks; 1300–1800 m. Guangxi, Guizhou, Yunnan.

7. *Maesa macilentata* E. Walker, J. Wash. Acad. Sci. 21: 479. 1931.

细梗杜茎山 xi gen du jing shan

Shrubs 1–2 m tall. Branchlets angular, brown velutinous-tomentulose; pith solid. Petiole 5(–10) mm; leaf blade ovate to lanceolate, 9–15(–20) × 3.5–5 cm, base truncate to cordate, margin entire to coarsely dentate, apex long acuminate or sometimes falcate; lateral veins 7 or 8 on each side of midrib, obscurely punctate-lineate. Inflorescences axillary, paniculate, (1–)2–4 cm, glabrous or minutely puberulent; bracts subulate; bracteoles triangular-ovate to oblong. Flowers ca. 2 mm. Pedicel 1–2 mm, glabrous. Calyx lobes ovate, inconspicuously punctate-lineate, entire, sometimes minutely ciliate, apex obtuse. Corolla tubular-campanulate; tube ca. 2 × as long as calyx lobes; lobes ca. 1/3 tube length, inconspicuously

punctate-lineate, apex rounded. Stamens of staminate flowers unknown, those of pistillate flowers minute, included; anthers ovate. Pistil included. Style slender, less than 1 mm; stigma obscurely lobed. Fruit globose, ca. 4 mm in diam., longitudinal ribs obscure; persistent calyx lobes meeting conical style base, exposed part ca. 1/3 fruit length. Fl. Sep–Oct, fr. May–Jan.

* Evergreen broad-leaved forests; 300–600 m. S Yunnan.

8. *Maesa insignis* Chun, Sunyatsenia 2: 81. 1934.

毛穗杜茎山 mao sui du jing shan

Maesa hirsuta E. Walker.

Shrubs 1.2–3(–4) m tall, gray-hirsute. Branchlets terete; pith hollow. Petiole subterete, 1.2–1.9 cm; leaf blade elliptic or ovate, 12–16(–19) × 4–6(–7) cm, base rounded or obtuse, margin coarsely serrate, teeth sharp but not callose, apex caudate-acuminate; lateral veins ca. 10 on each side of midrib, submarginal vein absent. Inflorescences axillary, racemose, ca. 6 cm, hirsute throughout; bracts lanceolate or subulate, ca. 1 mm; bracteoles lanceolate to narrowly so. Flowers yellowish, 2–3 mm. Calyx lobes ovate or subdeltate, ca. 1 mm, punctate-lineate, margin entire, ciliate, apex acute. Corolla campanulate; lobes broadly ovate or suborbicular, ca. as long as or shorter than tube, punctate-lineate, glabrous. Stamens included, inserted above middle of corolla tube; anthers ovate or broadly so, as long as filaments, not glandular. Style ± glandular, persistent; stigma lobed. Fruit white, globose, ca. 5 mm in diam., somewhat fleshy, hirsute, glandular, rarely with obscure longitudinal ribs; persistent calyx lobes closed at fruit apex. Fl. Jan–Feb, fr. Nov.

* Sparse mixed forests, hills. Guangdong, Guangxi, Guizhou.

9. *Maesa permollis* Kurz, J. Asiat. Soc. Bengal. 11: 66. 1871.

毛杜茎山 mao du jing shan

Shrubs 1–3(–6) m tall, reddish hirsute. Branchlets angular; pith hollow. Petiole 2–3(–5) cm; leaf blade elliptic to broadly oblong-obovate, (12–)20–31 × (6–)12–29 cm, densely pilose or hirsute abaxially especially along veins, base broadly truncate to subcordate, margin serrate or dentate, teeth callose, apex cuspidate; lateral veins ca. 10 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary, glomerate or paniculate, rarely to 4 cm, densely hirsute; bracteoles ovate. Flowers white or yellowish, ca. 3 mm. Pedicel rarely to 1 mm. Calyx lobes ovate, densely hirsute or pilose, margin narrowly scarious, ciliate, apex acute. Corolla tubular-campanulate, glabrous; tube 1.5–2 mm; lobes ca. 0.7 mm, ovate or subrounded, spreading. Stamens included, attached at middle of corolla tube; anthers broadly elliptic, ca. as long as filaments. Pistil included. Style short; stigma obscurely lobed. Fruit ovoid, 4–5 mm in diam., densely brown hirsute, apex acute or apiculate; persistent calyx lobes meeting at fruit apex. Fl. Mar, fr. Nov–Dec.

Mixed forests, hillsides, valleys, stream banks, damp places; 500–1600 m. SW and S Yunnan [Laos, Myanmar, Thailand].

10. *Maesa ambigua* C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 331. 1977.

坚髓杜茎山 jian sui du jing shan

Shrubs 1–4 m tall, reddish hirsute. Branchlets angular, longitudinally ridged; pith solid. Petiole canaliculate, 4(–10) mm; leaf blade elliptic to broadly obovate, 12–22 × 6–22 cm, papery, punctate, base broadly rounded to truncate or subcordate, sometimes asymmetric, margin coarsely serrate or serrate-dentate, apex long acuminate or caudate-acuminate, acumen 1–1.8 cm; lateral veins ca. 10 on each side of midrib, flat adaxially, hirsute, ending in noncallose teeth, submarginal vein absent. Inflorescences axillary, short racemose, 4–10 mm, hirsute throughout; bracts subulate, ca. 1 mm; bracteoles narrowly ovate, inserted up to middle of pedicel. Flowers ca. 2 mm. Pedicel 0.5–1 mm. Calyx lobes triangular-ovate, ca. 1.5 mm, as long as tube or longer, punctate-lineate. Corolla campanulate, ca. 2 mm; lobes 1/3–1/2 length of tube, subrounded, punctate-lineate. Stamens included, inserted at distal part of corolla tube; anthers broadly ovate, shorter than filaments. Pistil included. Style persistent; stigma lobed. Fruit globose, ca. 2 mm in diam., hirsute; persistent calyx lobes meeting at fruit apex. Fl. Mar, fr. Jul–Oct.

Dense evergreen broad-leaved forests, valleys, damp places; 900–1500 m. SE Yunnan [Vietnam].

11. *Maesa longilanceolata* C. Chen, Novon 4: 323. 1994.

长叶杜茎山 chang ye du jing shan

Shrubs 2(–5) m, reddish hirsute. Branchlets angular, longitudinally ridged; pith solid. Petiole canaliculate, 7–12 mm; leaf blade oblong or lanceolate, 6–14 × 2.5–4.8 cm, papery, densely hirsute along primary and secondary veins, strigose along others, base broadly obtuse or subrounded, margin irregularly dentate distally, teeth callose and punctate, entire toward base, apex caudate-acuminate; lateral veins 7 or 8 on each side of midrib, ending in teeth, punctate-lineate, submarginal vein absent. Inflorescences axillary, paniculate, (3–)5–7 cm, hirsute; bracteoles oblong or ovate, 0.6–0.8 mm, acuminate, minutely hirsute, margin ciliate. Flowers white, ca. 2 mm. Pedicel 1.2–1.5 mm, hirsute. Sepals broadly ovate, glabrous, margin entire, ciliate, prominently orange punctate-lineate, apex acute. Corolla campanulate; tube 1.2–1.5 mm; lobes suborbicular, margin erose, ciliate, subequalling tube, orange punctate-lineate, apex rounded. Stamens and pistil unknown. Fruit globose or ovoid, 3–4 mm in diam., glabrous, longitudinally ribbed; persistent sepals meeting at conical style base. Fl. Apr, fr. Oct–Nov.

* Broad-leaved forests, hillsides, valleys, river banks; 1300–1800 m. SE Xizang, NW Yunnan.

12. *Maesa parvifolia* Aug. de Candolle, Repert. Spec. Nov. Regni. Veg. 8: 353. 1910.

小叶杜茎山 xiao ye du jing shan

Shrubs or climbers 0.5–3 m tall, decumbent. Branchlets angular, hirtellous and glandular granulate, glabrescent, flexuous; pith solid. Petiole canaliculate, 4–6 mm, puberulent; leaf blade elliptic or ovate, 2.5–6(–10) × 1–1.8(–4) cm, papery, base obtuse to rounded, apex acuminate or rarely acute, glabrous to puberulent, base cuneate or obtuse to rounded, margin

undulate to sparsely serrulate, apex acuminate to caudate-acuminate, rarely acute; lateral veins ca. 8 on each side of midrib, ending in punctate teeth, submarginal vein absent. Inflorescences axillary, paniculate, 3–7 cm, puberulent; bracteoles minute, lanceolate, hirsute. Flowers white, fragrant, ca. 1.5 mm. Pedicel 1.5–2 mm, puberulent. Calyx lobes broadly ovate, puberulent, orange punctate-lineate, margin entire, ciliate, apex acuminate. Corolla campanulate, ca. 3 × length of calyx lobes; lobes broadly ovate, subequalling tube, crenulate, rounded. Stamens shorter than corolla lobes; anthers broadly ovate or reniform, ca. as long as filaments in staminate flowers. Pistil included. Style short, thick; stigma flattened, somewhat lobed. Fruit unknown. Fl. Feb–Apr.

Mixed forests, shrubby areas, sunny hillsides; 400–1700 m. Guangdong, Guangxi, Hainan, SE Yunnan [N Vietnam].

13. *Maesa marioniae* Merrill, *Brittonia* 4: 160. 1941.

毛脉杜茎山 *mao mai du jing shan*

Shrubs 1.5–2(–5) m tall. Branchlets angular, reddish hirtellous and glandular granulate, glabrescent; pith solid. Petiole canaliculate, 7–10 mm, hirtellous, glabrescent; leaf blade elliptic, oblong, or lanceolate, 6–14 × 2.5–4.8 cm, base broadly obtuse to rounded, margin dentate distally and entire toward base, apex acuminate to caudate-acuminate or rarely acute; lateral veins 7 or 8 on each side of midrib, hirtellous or subglabrous, punctate-lineate, ending in glandular teeth, submarginal vein absent. Inflorescences axillary, paniculate, 3–5 cm, hirtellous; bracteoles oblong-ovate or ovate, 0.6–0.8 mm, puberulent, ciliate. Flowers white, ca. 2 mm. Pedicel 1.2–1.5 mm, puberulent. Calyx lobes broadly ovate, punctate-lineate, glabrous, margin entire, ciliolate, apex acute. Corolla campanulate, ca. 1.2 mm; lobes broadly ovate or subrounded, erose, subequalling tube. Filaments ca. 1 mm, longer than anthers; anthers elliptic. Pistil included. Style very short, persistent. Fruit globose or ovoid, 3–4 mm in diam., glabrous, somewhat fleshy, ribbed; persistent calyx lobes meeting at about style base, exposed part ca. 1/3 fruit length.

Broad-leaved forests, hillsides, valleys, river banks; 1300–1800 m. Xizang, NW Yunnan [Myanmar].

14. *Maesa argentea* (Wallich) A. de Candolle, *Ann. Sci. Nat., Bot.*, ser. 2, 16: 96. 1841.

银叶杜茎山 *yin ye du jing shan*

Baeobotrys argentea Wallich in Roxburgh, *Fl. Ind.* 2: 233. 1824.

Shrubs or rarely small trees to 5 m tall. Branchlets densely hirtellous and glandular granulate; pith solid. Petiole canaliculate, 1.8–2(–3) cm, sparsely pilose; leaf blade ovate or broadly elliptic, 12–17(–22) × 5–9(–11) cm, sparsely hirtellous and glandular granulate abaxially, glabrescent adaxially except granulate veins, reticulate punctate-lineate, base acute, margin serrate-dentate, apex acuminate; lateral veins ca. 8 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary, racemose-spicate, 1–4(–5) cm, axis pilose; bracteoles ovate, sparsely pilose. Flowers white, (2–)3 mm. Pedicel subobsolete to 0.8 mm, hirtellous. Calyx conical; lobes ovate, glabrous, punctate-lineate, margin entire,

apex acute or obtuse. Corolla tubular-campanulate, ca. 3 mm; tube ca. 2 mm; lobes ca. 1 mm, punctate-lineate, margin ± erose-denticulate near base; apex broadly obtuse. Stamens included, inserted at middle of corolla tube; anthers ovate, shorter than filaments. Pistil included. Style cylindrical; stigma 3- or 4-lobed. Fruit globose to broadly ovoid, 3–4(–5) mm in diam., fleshy, punctate-lineate, glabrous; persistent calyx lobes meeting at fruit apex. Fl. Mar–Apr, fr. Sep–Oct.

Broad-leaved forests, hilly areas, valleys, stream banks, damp places; 1500–2900 m. Sichuan, Yunnan [India, Myanmar, Nepal].

15. *Maesa perlarius* (Loureiro) Merrill, *Trans. Amer. Philos. Soc.*, n. ser. 24: 298. 1935.

鲫鱼胆 *ji yu dan*

Dartus perlarius Loureiro, *Fl. Cochinch.* 1: 124. 1790; *Maesa sinensis* A. de Candolle; *M. tonkinensis* Mez.

Shrubs 1–3 m tall. Branchlets hirtellous and glandular granulate, sometimes glabrous; pith solid. Petiole canaliculate, ca. 10 mm; leaf blade elliptic to broadly ovate, 7–11 (–12) × 3–5(–6) cm, densely hirtellous when young, base acute, margin coarsely serrate distally and entire toward base, apex acute or acuminate; lateral veins 7–9 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary, paniculate or rarely racemose, 2–4 cm, hirtellous and glandular granulate; bracts lanceolate or subulate, less than 2 mm; bracteoles lanceolate or subovate. Flowers ca. 2 mm. Pedicel 1.8–2 mm. Calyx discoid; lobes broadly ovate, punctate-lineate, hirsute or glabrous, margin entire, ciliate, apex obtuse or acute. Corolla ca. 2 × as long as calyx lobes, punctate-lineate, glabrous; lobes broadly ovate, as long as tube, irregularly crenulate. Stamens inserted at distal half of corolla tube; anthers broadly oblong or reniform, not glandular, shorter than filaments. Pistil included. Style thick, cylindrical; stigma 4-lobed. Fruit globose, ca. 3 mm in diam., punctate-lineate, glabrous, 1/4–1/3 exposed; persistent calyx lobes rarely meet at fruit apex. Fl. Mar–Apr, fr. Dec–May.

Sparse broad-leaved forests, shrubby areas, hillsides, damp places; 200–1400 m. Guangdong, Guangxi, Guizhou, Hainan, Sichuan, Taiwan, Yunnan [Thailand, Vietnam].

16. *Maesa reticulata* C. Y. Wu in C. Chen, *Fl. Yunnan.* 1: 330. 1977.

网脉杜茎山 *wang mai du jing shan*

Trees glabrous. Branchlets thick, wrinkled, obtusely angular; pith solid. Petiole subterete to terete, (1.5–)2–3 cm; leaf blade broadly obovate or elliptic, 15–24 × 7–14 cm, leathery, glabrous, base rounded or broadly obtuse, margin crenulate with sharp teeth, apex cuspidate; veins prominently raised on both surfaces, densely and minutely pustulate, scabrous especially adaxially; lateral veins ca. 10 on each side of midrib, running into marginal vein. Inflorescences axillary, contorted racemes appearing glomerate, shorter than petiole. Flowers unknown. Pedicel ca. 2.5 cm in fruit. Fruit ovoid, ca. 5 mm in diam., punctate-lineate, pustulate; persistent calyx lobes triangular, meeting at fruit apex. Fr. Jun.

Broad-leaved forests, valleys; 200–400 m. S Yunnan [Vietnam].

17. *Maesa striatocarpa* C. Chen, *Novon* 4: 322. 1994.

纹果杜茎山 wen guo du jing shan

Shrub to 5 m tall. Branchlets angular, 2–2.5 mm in diam., apices glabrous; pith solid. Leaf blade abaxially, calyx, corolla lobes, pistil, and fruit densely black punctate-lineate. Petiole canaliculate, 1–2 cm; leaf blade elliptic to obovate, 8–14.5 × 3.3–6 cm, membranous, dull adaxially, glabrous, base cuneate, rounded, obtuse or sometimes subtruncate, margin subrevolute, sparsely serrate-dentate with callose teeth, apex caudate-acuminate, acumen 1–2 cm; lateral veins 7–10 on each side of midrib, ending in teeth. Inflorescences axillary or sometimes terminal, paniculate, 5–12 cm; bracteoles ovate, entire, black punctate-lineate. Flowers white, ca. 2 mm. Pedicel 1.3–1.5 mm. Calyx lobes ovate, persistent, glabrous, margin entire, ciliate; apex acute. Corolla short campanulate, lobes equaling or longer than tube, broadly ovate to subreniform, margin minutely denticulate or crenulate, apex rounded. Stamens inserted at middle of corolla tube, included; anthers broadly ovate or reniform, ca. as long as filaments. Pistil included. Style short, persistent, stigma subcapitate, slightly lobed. Fruit yellowish, globose, 2–3 mm in diam. Fl. Jan–May, fr. Aug–Nov.

* Dense broad-leaved forests, damp seepage areas on hillsides, 1300–1800 m. Yunnan.

18. *Maesa acuminatissima* Merrill, *Philipp. J. Sci.* 23: 257. 1923.

米珍果 mi zhen guo

M. striata Mez var. *opaca* Pitard.

Shrubs 1–2(–4) m tall. Branchlets terete, slender, glabrous; pith hollow. Petiole canaliculate, 6–10 mm; leaf blade lanceolate or broadly so, 9–17 × 2–5 cm, papery, glabrous, inconspicuously pellucid punctate, glossy adaxially, dull abaxially, base obtuse or subrounded, margin entire to obscurely undulate, apex acuminate or caudate-acuminate; lateral veins 4–6 on each side of midrib, curved ascending. Inflorescences terminal or subterminal, paniculate, pyramidal, 5–8 cm; lower branches glabrous, glossy, up to 4 cm; bracteoles minute, lanceolate, near or at apex of pedicel. Flowers ca. 3 mm. Pedicel slender, 4–5 mm. Calyx lobes ovate, obtuse or acute, ca. 0.5 mm. Corolla lobes ovate, ca. as long as tube, irregularly crenulate at apex. Stamens reduced in pistillate flowers. Pistil included. Stigma scarcely lobed. Fruit globose or subovoid, ca. 3 mm in diam., enclosed by persistent calyx lobes or apex exposed, base ± conical. Fl. Jan–Feb, fr. Nov–Dec.

Evergreen broad-leaved forests, mountain slopes, stream banks, damp places; 100–600 m. Guangxi, Hainan, SE Yunnan [Vietnam].

19. *Maesa salicifolia* E. Walker, *J. Wash. Acad. Sci.* 21: 480. 1931.

柳叶杜茎山 liu ye du jing shan

Shrubs ca. 2 m tall. Branchlets terete, glandular granulate, early glabrescent, longitudinally striate; pith solid. Petiole deeply canaliculate, 5–12 mm, rugose; leaf blade narrowly linear-lanceolate, 10–20 × 1.5–2 cm, leathery, rugose, subulate, inconspicuously pellucid punctate, base obtuse, margin

entire, revolute, apex acute or acuminate; lateral veins 5–7 on each side of midrib. Inflorescences axillary, racemose or paniculate, 1.5–2 cm; bracteoles broadly ovate, apex obtuse or acute. Flowers white or yellowish, 3–4 mm. Pedicel 2.5–3.5 mm, glandular granulate, early glabrescent. Calyx lobes ovate to suborbicular, ca. 1 mm, punctate, margin sparsely ciliate, apex obtuse or rounded. Corolla tubular or tubular-campanulate; tube 3–4 mm, punctate-lineate; lobes broadly ovate, margin crenulate, apex rounded. Stamens of staminate flowers included, attached at or above middle of corolla tube, reduced in pistillate flowers; anthers oblong-ovate, ca. as long as filaments. Pistil included. Style persistent; stigma dilated or 3- or 4-lobed. Fruit reddish, globose or subovoid, ca. 4 mm in diam., punctate-lineate, wrinkled; persistent calyx lobes nearly meeting style. Fl. Jan–Feb, fr. Sep–Nov.

* Sparse mixed forest, limestone mountains, damp places; 100–600 m. Guangdong.

20. *Maesa japonica* (Thunberg) Moritz & Zollinger, *Syst. Verz. Ind. Archip.* 3: 61. 1855.

杜茎山 du jing shan

Doraena japonica Thunberg, *Nov. Gen. Pl.* 3: 59. 1783; *Baeobotrys japonica* (Thunberg) Zippelius ex Scheffer; *Maesa cavaleriei* H. Léveillé; *M. coriacea* Champion; *M. coriacea* var. *gracilis* Benthams; *M. doraena* Blume ex Siebold & Zuccarini; *M. dunniana* H. Léveillé; *M. esquirolii* H. Léveillé; *M. japonica* f. *gracilis* (Benthams) Nakai; *M. labordei* H. Léveillé; *M. randaiensis* Hayata; *M. taiheizanensis* Sasaki; *Myrsine esquirolii* H. Léveillé; *Pieris oligodonta* H. Léveillé.

Shrubs erect, sometimes decumbent or scandent, 1–3(–5) m tall. Branchlets terete, apex glandular granulate, early glabrescent; pith solid. Petiole canaliculate, 5–13 mm; leaf blade elliptic, lanceolate, to obovate, 5–16 × 2–5 cm, leathery, inconspicuously pellucid punctate, base cuneate or obtuse to rounded, smooth adaxially, margin entire toward base and subentire to serrate distally with mucronate teeth, apex acuminate to acute or obtuse; lateral veins 5–8 on each side of midrib. Inflorescences axillary, racemose or paniculate, 1–3(–4) cm, glabrous; bracteoles broadly ovate or reniform, to 1 mm, dark punctate-lineate, ciliate, encircling pedicel. Flowers white, 3.5–5 mm. Pedicel 2.5–3.5 mm, glandular granulate, glabrescent. Calyx ca. 2 mm; lobes ca. 1 mm, ovate to orbicular, punctate-lineate, margin entire, ciliate, apex obtuse or rounded. Corolla white, tubular-campanulate; tube 3–4 mm, prominently punctate-lineate; lobes reniform or ovate, ca. 1 mm, apex rounded or obtuse. Stamens included; anthers ovate, as long as filaments, glandular on back. Pistil included. Style slender, persistent, conical at base in fruit; stigma lobed. Fruit globose or ovoid, 4–5(–6) mm in diam., fleshy, punctate-lineate. Fl. Jan–Mar, fr. Oct–May.

Mixed forests, hillsides, limestone mountains; 300–2000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, N Vietnam].

21. *Maesa hupehensis* Rehder in Sargent, *Pl. Wilson.* 2: 583. 1916.

湖北杜茎山 hu bei du jing shan

Maesa japonica (Thunberg) Moritz & Zollinger var. *elongata* Mez; *M. wilsonii* Rehder.

Shrubs 1–2(–4) m tall, glandular granulose, early glabrescent; pith hollow. Petiole canaliculate, 5–10 mm, glabrous; leaf blade lanceolate or oblong, rarely ovate, 10–15(–21) × 2–4(–4.5) cm, papery, prominently black punctate-lineate, base rounded or sometimes obtuse or broadly cuneate, margin entire or sinuate-dentate to rarely shallowly serrate, apex acuminate or rarely acute; lateral veins 8–10 on each side of midrib, not united into marginal vein. Inflorescences axillary, 4–8(–10) cm, racemose; bracts subulate; bracteoles minute, ovate, orange punctate-lineate. Flowers white, 3–4 mm. Pedicel 3–4 mm. Calyx lobes broadly ovate, ca. 1.5 mm, glabrous, margin entire, apex acute, densely orange punctate-lineate. Corolla 3–4 mm, densely orange punctate-lineate; lobes broadly ovate, subrounded, as long as tube. Stamens included; anthers ovate. Pistil included. Style conical, persistent, as long as ovary; stigma slightly 4-lobed. Fruit white or yellowish, globose or subovoid, ca. 5 mm in diam., orange punctate-lineate; persistent calyx lobes closed at fruit apex. Fl. May–Jun, fr. Oct–Dec.

* Forests, stream banks, damp places; 500–1700 m. Hubei, Sichuan.

22. *Maesa consanguinea* Merrill, Philipp. J. Sci. 23: 258. 1923.

拟杜茎山 ni du jing shan

Shrubs 1–1.5(–3) m tall. Branchlets terete, apex glandular granulose, early glabrescent, lenticellate; pith solid. Petiole canaliculate, 1–2.5 cm; leaf blade oblong to oblong-ovate, 7–12(–18.5) × 5–6(–8) cm, papery, glabrous, black punctate-lineate abaxially, base subcuneate or obtuse, margin slightly undulate or remotely denticulate, apex acuminate or subcordate-acuminate; lateral veins 5–7 on each side of midrib, marginal vein absent. Inflorescences axillary, pyramidal paniculate or sometimes racemose, (1–)4–10 cm, glabrous; bracteoles ovate, acute at apex. Flowers unknown. Fruit dark brown, globose, to 3 mm in diam., on pedicel ca. 2 mm, black punctate-lineate; persistent calyx lobes thin margined, red punctate-lineate, not reaching persistent style. Fl. Feb–Mar, fr. Jul–Sep.

* Sparse mixed forests, stream banks, hillsides; 500–1300 m. Hainan.

23. *Maesa ramentacea* (Roxburgh) A. de Candolle, Prodr. 8: 77. 1844.

称杆树 cheng gan shu

Baeobotrys ramentacea Roxburgh, Fl. Ind. 2: 231. 1824.

Shrubs or rarely trees, 1.5–3(–5) m tall. Branchlets angular, glabrous, minutely lenticellate; pith solid. Petiole ca. 1 cm; leaf blade ovate to elliptic-lanceolate, 8–16 × 2.5–5.5 cm, papery, glabrous, base rounded, obtuse, to broadly cuneate, margin entire or undulate, apex acute or long acuminate; lateral veins 5–8 on each side of midrib, not united into marginal vein. Inflorescences axillary or sometimes subterminal, paniculate, many branched, 4–10 cm, minutely glandular granulose; bracts subulate or ovate; bracteoles broadly ovate or triangular, sparsely ciliate. Flowers white, ca. 2 mm. Pedicel 1–2 mm. Calyx lobes united ca. 1/2 their length, ovate

or broadly so, glabrous, ciliate, not punctate, apex obtuse or rounded. Corolla united into a short tube, ca. 1.5 mm, not punctate, glabrous; lobes as long as tube, reniform or orbicular, rounded, margin undulate. Stamens inserted on distal part of corolla tube, included, rudimentary in pistillate flowers; anthers orbicular or reniform. Style very short, thick; stigma minutely 4-lobed. Fruit yellowish, globose, 2–3 mm, orange punctate-lineate or veined. Fl. Jan–Mar, fr. Nov–Dec.

Sparse broad-leaved forests, mountain slopes, stream banks, shady places, along trails; 300–1700 m. Guangxi, Yunnan [Bangladesh, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Vietnam].

24. *Maesa confusa* (C. M. Hu) Pipoly & C. Chen, Novon 5: 357. 1995.

紊纹杜茎山 wen wen du jing shan

Maesa consanguinea Merrill var. *confusa* C. M. Hu, Bot. J. South China 1: 12. 1992.

Shrubs 2–4 m tall. Branchlets angular, apex glandular granulose, early glabrescent, sparsely lenticellate; pith solid. Petiole canaliculate, winged from decurrent leaf base, (2.8–)3–4 cm; leaf blade broadly elliptic to obovate, (10–)15–27 × (7–)8–10(–12) cm, membranous, glabrous, dull adaxially, densely black punctate-lineate abaxially in numerous parallel lines, base obtuse to broadly rounded, margin serrate with denticulate callose teeth, apex caudate or acuminate; lateral veins 6–12 on each side of midrib, marginal vein absent. Inflorescences axillary, pyramidal paniculate or sometimes racemose, (1–)4–10 cm, densely and minutely glandular granulose; bracteoles ovate, acute at apex. Flowers white, 2–2.2 mm. Pedicel 2–2.5 mm. Sepals united ca. 1/3 length, ovate, glabrous, margin entire, ciliate, apex broadly acute. Corolla 1–1.4 mm, lobes longer than tube, suborbicular, margin entire, glabrous, apex obtuse. Fruit dark brown, globose, to 3 mm in diam., black punctate-lineate; persistent calyx lobes thin margined, red punctate-lineate, not reaching persistent style.

* Along streams in montane mixed forests, 700–1200 m. Hainan.

25. *Maesa membranacea* A. de Candolle, Ann. Sci. Nat., Bot., ser. 2, 16: 80. 1841.

腺叶杜茎山 xian ye du jing shan

Maesa subrotunda C. Y. Wu & C. Chen.

Shrubs 2–5 m tall, glandular granulose, early glabrescent. Branchlets terete, flexuous, not lenticellate; pith solid. Petiole subterete or barely canaliculate, 2.5–3(–4) cm; leaf blade broadly ovate or broadly elliptic, 10–17(–24) × 5–11.5 cm, thin leathery, adaxially glossy, finely orange punctate-lineate, base broadly obtuse, rounded, to truncate, margin serrate-denticulate or with small, punctate teeth, apex caudate-acuminate; lateral veins 6–9(or 10) on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary and terminal, paniculate, (2–)7 cm, 4- or 5-branched, glabrous; bracteoles ovate, acute. Flowers white, ca. 2 mm. Pedicel 0.8–1.5(–2) mm. Calyx lobes broadly ovate, ca. 1 mm in fruit, obtuse or rounded, entire or irregularly crenulate,

minutely ciliate or not, orange punctate-lineate. Corolla lobes as long as tube, broadly ovate, rounded at apex, crenulate at margin, orange punctate-lineate. Stamens included, minute, inserted on lower part of corolla tube; filaments shorter than anthers. Pistil included. Style thick; stigma obscurely lobed. Fruit globose, ca. 3 mm in diam., orange punctate-lineate. Fl. Dec–Feb, fr. Aug–Dec.

Dense mixed forests, hillsides, stream banks, open coastal areas, damp places; 200–1500 m. Guangxi, Hainan, Yunnan [Cambodia, Vietnam].

26. *Maesa indica* (Roxburgh) A. de Candolle, Trans. Linn. Soc., London 17: 134. 1834.

包疮叶 bao chuang ye

Baeobotrys indica Roxburgh, Fl. Ind. 2: 230. 1824.

Shrubs 1–3 m tall, scandent, glandular granulose, early glabrescent. Branchlets angular to obtusely ridged, pellucid punctate-lineate, striate, with dense lenticels; pith solid. Petiole slightly canaliculate, 1–1.8 cm; leaf blade broadly ovate to oblong, 8–17(–21) × 5–9(–11) cm, papery, punctate-lineate, base obtuse or subrounded, margin serrate-dentate or denticulate, teeth not callose, apex acute or acuminate. Inflorescences axillary or subterminal, racemose or paniculate, 3–5 cm, glabrescent or glandular granulose; bracteoles broadly ovate, obtuse to rounded apically. Flowers white or light yellow-green, ca. 2 mm. Pedicel 1–2 mm, glandular granulose. Calyx lobes broadly ovate, pellucid punctate, margin entire, sparsely ciliate, apex obtuse to rounded. Corolla campanulate, orange punctate-lineate; lobes broadly ovate, as long as or longer than tube, margin subundulate, apex acute. Stamens inserted at middle of corolla tube, included; filaments as long as or longer than anthers; anthers rounded. Pistil included. Style short; stigma lobed. Fruit globose or subglobose, ca. 3 mm in diam., with longitudinal ribs; persistent calyx lobes closed at fruit apex. Fl. Apr–May, fr. Sep–Nov.

Evergreen broad-leaved forests, hillsides, stream banks, damp places; 500–2000 m. S Yunnan [India, Vietnam].

27. *Maesa tenera* Mez in Engler, Pflanzenr. IV. 236(Heft 9): 28. 1902.

软弱杜茎山 ruan ruo du jing shan

Shrubs 1–2(–4) m tall, glandular granulose, early glabrescent. Branchlets angular to obtusely ridged, lenticellate; pith hollow. Petiole canaliculate, 1–1.5 cm; leaf blade broadly elliptic to ovate, 7.5–11 × 3.5–5.5 cm, membranous, dull adaxially, inconspicuously pellucid punctate and sparsely glandular granulose abaxially, base cuneate, margin serrate, teeth not callose, apex caudate-acuminate; lateral veins 7–10 on each side of midrib, marginal vein absent. Inflorescences axillary, racemose or paniculate, 7–10 cm, glabrous; bracteoles ovate to lanceolate, margin ciliate, apex acute. Flowers 1.5–2 mm. Pedicel 1.5–2 mm, glabrous. Calyx lobes broadly ovate, margin entire, sometimes ciliate, apex acute. Corolla campanulate, twice as long as calyx lobes; lobes broadly ovate, as long as tube, orange punctate-lineate, margin crenulate, apex rounded. Stamens of pistillate flowers reduced, those of male flowers

inserted on distal part of corolla tube; filaments longer than anthers; anthers oblong. Pistil and pistillode included. Style persistent; stigma 4-lobed. Fruit globose or subovoid, ca. 3 mm in diam., striate, 1/4–1/3 exposed above attachment of persistent calyx lobes. Fl. Feb, fr. Aug–Sep.

* Open edges of mixed forests; 100–600 m. C and S Guangdong.

28. *Maesa manipurensis* Mez in Engler, Pflanzenr. IV. 236(Heft 9): 30. 1902.

隐纹杜茎山 yin wen du jing shan

Shrubs 1.2–3 m tall. Branchlets glandular granulose, early glabrescent, shallowly canaliculate when young, cylindrical with ridges at maturity; pith hollow. Petiole slightly canaliculate, (1–)1.8 cm; leaf blade oblong to narrowly lanceolate, 11–21 × 3.5–7(–8) cm, papery, glandular granulose, early glabrescent, inconspicuously orange punctate-lineate, base subrounded or obtuse, margin coarsely serrate or serrate-denticulate with punctate and callose teeth, apex acute or short acuminate; lateral veins 9–12 on each side of midrib, ending in teeth, submarginal vein absent. Inflorescences axillary and terminal, paniculate, 2–4 cm, glabrous; bracteoles lanceolate, margin ciliate, apex acute. Flowers 2–3 mm. Calyx lobes ovate, obscurely orange punctate-lineate, margin ciliate, apex acute. Corolla white, campanulate, orange punctate-lineate; lobes ovate, margin minutely crenulate, as long as tube or longer, apex obtuse. Stamens inserted at middle of corolla tube; anthers ovate or reniform, ca. as long as filaments. Pistil included. Style slender, persistent; stigma sometimes 4-lobed. Fruit ovoid, ca. 2.5 mm in diam., slightly ribbed; persistent calyx lobes closed at fruit apex. Fl. Feb–Mar, fr. Oct.

Sparse broad-leaved forests, hillsides, valleys; 1600–2000 m. W Yunnan [Bangladesh, E India].

29. *Maesa densistriata* C. Chen & C. M. Hu in C. Chen, Novon 4: 322. 1994.

灰叶杜茎山 hui ye du jing shan

Shrubs 1–2 m tall. Branchlets angular, sparsely puberulent when young, glabrescent when mature. Petiole ca. 1.5 cm; leaf blade oblong, elliptic-lanceolate, to oblanceolate, 8.5–14 × 2.5–5.5 cm, papery, glabrous, densely and minutely longitudinally glandular striate, base cuneate, margin serrate, apex acute or abruptly acuminate; midrib and lateral veins prominent especially abaxially, lateral veins ca. 10 per side, ending in teeth. Flowers unknown. Inflorescences axillary, paniculate, 1.5–4 cm, many branched, glabrous, inserted at leaf axils of 2-year old branches; bracts lanceolate, ca. 0.5 mm; bracteoles ovate, glabrous. Fruiting pedicel 1–2 mm, glabrous. Fruit globose, 3–4 mm in diam., somewhat fleshy, glabrous, not glandular, persistent sepals ovate-triangular, glabrous, glandular at apex, ± ciliate.

* Sparse broad-leaved forests, shrubby areas, sunny hillsides; 900–2000 m. Yunnan.

