

## OCHNACEAE

金莲木科 jin lian mu ke

Zhang Zhixiang (张志翔)<sup>1</sup>; Maria do Carmo E. Amaral<sup>2</sup>

Trees and shrubs, rarely herbs. Leaves alternate, simple, rarely pinnately compound, petiolate; stipules entire or sometimes lacerate, persistent or caducous; leaf blade margin dentate, serrate or rarely entire; veins pinnate. Inflorescences terminal or axillary, cymose or racemose, rarely 1-flowered. Flowers generally bisexual, actinomorphic or more rarely zygomorphic, bracteate; pedicels articulated. Sepals (2–4)5(10–15), free or more rarely united, imbricate or valvate. Petals (3–)5(–8), mostly free, clawed to sessile, contorted or imbricate. Stamens 5–10 or numerous; filaments generally free and persistent, or anthers sessile; anthers basifixed, longitudinally dehiscent or poricidal; staminodes present or not, sometimes persistent, awl-shaped, spatulate, or petaloid, sometimes connected into a tube. Gynoecium (2 or)3–5(–15)-carpellate, gynophore present or rarely absent; ovary superior, entire or deeply lobed, generally long styled; placentation basal, axile or parietal, rarely laminar; ovules 1 or 2 or numerous per locule; stigma entire or sometimes shortly divided at apex. Fruit fleshy or non-fleshy, generally a septicidal capsule, rarely a nut with accrescent sepals or a drupe, or separating into up to 15 blackish drupelets on a colored accrescent receptacle. Seeds endospermic or non-endospermic, winged or not; germination phanerocotylar or cryptocotylar; embryo usually straight, more rarely curved.

About 27 genera and ca. 500 species: tropical zones, mainly in the Neotropics; three genera and four species (one endemic) in China.

Wei Chao-fen. 1984. Ochnaceae. In: Feng Kuo-mei, ed., Fl. Reipubl. Popularis Sin. 49(2): 302–308.

- 1a. Stipules lacerate, more or less persistent; sepals not enclosing mature floral bud, margins ciliate-glandular; stamens 5, anthers longitudinally dehiscent, staminodes numerous; ovary 3-carpellate, entire, 1-locular, ovules numerous; fruit a septicidal capsule ..... 3. *Sauvagesia*
- 1b. Stipules entire, soon deciduous; sepals completely enclosing floral bud, margins entire; stamens 10 or numerous, anthers poricidal, staminodes absent; ovary deeply lobed, 5–15-locular, ovule 1 per locule; fruit separating into drupelets on an accrescent receptacle.
- 2a. Stamens numerous, 2- or more whorled, filaments conspicuous; stigma slightly lobed; secondary veins not joining in a submarginal vein ..... 2. *Ochna*
- 2b. Stamens 10, 1-whorled, anthers sessile; stigma punctiform; secondary veins joining in a conspicuous submarginal vein ..... 1. *Campylopermum*

### 1. CAMPYLOSPERMUM Tieghem, J. Bot. (Morot) 16: 35, 40. 1902.

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*Meesia* Gaertner (1788), not Hedwig (1801), nom. cons. [Musci]; *Walkera* Schreber (1789), not *Walkeria* Miller ex Ehret (1764).

Small trees to shrubs. Bark gray to brown. Stipules small, intrapetiolarly united, scalelike, apex 2-lobed, deciduous; leaf blade simple, both surfaces generally glossy, leathery, margin entire or serrate; secondary veins numerous, ± parallel. Inflorescences terminal or axillary. Sepals 5, reddish, completely enclosing floral bud, margins entire, accrescent after flowering, persistent in fruit. Petals 5, yellow or white, contorted. Stamens 10, 1-whorled; filaments very short or absent; anthers sessile or subsessile, dehiscing by pores. Ovary deeply lobed, 5-locular; ovule 1 per locule; style gynobasic, slender; stigma 1, punctiform. Drupelets 1 or 2, sometimes 5, inserted on accrescent and colored receptacle. Seed non-endospermic, embryo curved.

About 65 species: mainly in tropical Africa and Madagascar, a few species in S and SE Asia; two species in China.

- 1a. Inflorescences 6–14 cm; flowers congested in a few groups along inflorescence branches; basal portion of pedicel below articulation 1 mm or less; petals obovate, apex slightly emarginate, base auriculate; secondary nerves curved close to leaf margin, submarginal vein at irregular distances from leaf margin ..... 1. *C. serratum*
- 1b. Inflorescences 2–5 cm; flowers more or less laxly disposed on inflorescence branches; basal portion of pedicel up to 2.5 mm; petals oblong-lanceolate, apex obtuse, base non-auriculate; secondary nerves more or less straight, submarginal vein more or less parallel to leaf margin ..... 2. *C. striatum*

**1. *Campylopermum serratum*** (Gaertner) Bittrich & M. C. E. Amaral, Taxon 43: 92. 1994.

*Gomphia serrata* (Gaertner) Kanis; *Ouratea serrata* (Gaertner) N. Robson; *Walkera serrata* (Gaertner) Willdenow.

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*Meesia serrata* Gaertner, Fruct. Sem. Pl. 1: 344. 1788;

Shrubs or small trees, 2.5–7 m tall. Petiole 3–5 mm; leaf blade long elliptic, 10–17 × 2–5.5 cm, coriaceous, base cuneate, with small teeth on margin, but base entire, apex shortly acumi-

<sup>1</sup> Forestry Herbarium, Beijing Forestry University, Xiaozhuang, Beijing 100083, People's Republic of China.

<sup>2</sup> Herbário, Departamento de Botânica, Instituto de Biologia, Universidade Estadual de Campinas, Caixa Postal 6109, 13083-970 Campinas, São Paulo, Brazil.

nate; midvein prominent on both surfaces; secondary nerves curved close to leaf margin; submarginal vein at irregular distances from leaf margin. Inflorescences terminal or axillary, 6–14 cm. Flowers congested in a few groups along inflorescence branches; basal portion of pedicel below articulation 1 mm or less. Sepals broadly elliptic, ca.  $5 \times 3$  mm. Petals obovate, ca.  $5 \times 4$  mm, base auriculate, apex slightly emarginate. Anthers sessile, linear, ca. 4 mm, slightly curved. Ovary deeply lobed; stigma subulate, ca. 3 mm. Drupelets elliptic, slightly reniform,  $5-6 \times 4-5$  mm. Fl. Jul, fr. Aug–Dec.

Dense forests, streamsides, granitic areas, sometimes on mountain summits; 600–700 m. Hainan [Cambodia, India, Indonesia, Laos, Malaysia, Philippines, Sri Lanka, Thailand, Vietnam].

"*Ouratea lobopetala*" (Gagnepain in Humbert, Fl. Indo-Chine, Suppl. 1: 671. 1946) belongs here but was not validly published because no Latin description or diagnosis was provided (*Vienna Code*, Art. 36.1).

## 2. *Campylopermum striatum* (Tieghem) M. C. E. Amaral, **comb. nov.**

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Basionym: *Campylocercum striatum* Tieghem, Ann. Sci. Nat., Bot., sér. 8, 16: 304. 1902; *Gomphia striata* (Tieghem) C. F. Wei; *Ouratea striata* (Tieghem) Lecomte (1911), not (Tieghem) Urban (1908).

Shrubs 1–3 m tall. Petioles 3–6 mm; leaf blade oblong to lanceolate,  $9-18 \times 2-4.5$  cm, coriaceous to subcoriaceous, base cuneate, margin entire or with small teeth but base entire, apex shortly acuminate or acuminate; midvein prominent on both surfaces; secondary nerves  $\pm$  straight; submarginal vein  $\pm$  parallel to leaf margin. Inflorescences terminal or axillary, 2–5 cm. Flowers  $\pm$  laxly disposed on inflorescence branches; basal portion of pedicel up to 2.5 mm. Sepals oblong,  $4-5 \times 2-3$  mm. Petals oblong-lanceolate, 5–6 mm, base non-auriculate, apex obtuse. Anthers sessile, ca. 4 mm, slightly curved. Ovary deeply lobed; stigma subulate, 3.5–4 mm. Drupelets slightly reniform, ca.  $5 \times 6$  mm. Fl. Apr–Nov, fr. Aug–Dec.

Usually in forests in granitic areas; below 100–700 m. Hainan [Vietnam].

Kanis (Blumea 16: 53–61. 1968) treated *Campylocercum striatum* (or *Ouratea striata*) and "*O. lobopetala*" as synonyms of *Campylopermum serratum* (as *Gomphia serrata*). *Campylopermum serratum* is quite similar to "*O. lobopetala*," but *Campylopermum striatum* differs in having the submarginal nerve regularly parallel to the leaf margin, shorter inflorescences, longer basal portion of the pedicel (below the articulation), and oblong-lanceolate petals. Therefore, *Campylopermum striatum* is treated as a separate species here. As *Gomphia Schreber* is a synonym of *Ouratea* Aublet (Bittrich & Amaral, Taxon 43: 89–93. 1994), the new combination proposed above is necessary.

## 2. OCHNA Linnaeus, Sp. Pl. 1: 513. 1753.

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Small trees or shrubs. Stipules small, intrapetiolarly united, deciduous; leaf blade simple, margin generally serrate, rarely entire; secondary veins curved upward, especially near margin, not joining in a submarginal vein. Inflorescences branched, sometimes corymbose. Sepals (4 or)5, completely enclosing floral bud, margins entire, often accrescent and colored in fruit, persistent. Petals 5–12, yellow or rarely orange or white, contorted. Stamens numerous, 2- or more whorled; filaments short or elongate, persistent; anthers poricidal or more rarely longitudinally dehiscent. Ovary deeply lobed, 3–15-locular; ovule 1 per locule; style gynobasic, slender; stigma generally slightly lobed. Drupelets 3–10 (or 15), black, inserted on accrescent receptacle. Seed non-endospermic; embryo straight or curved.

About 85 species: mainly in tropical Africa, a few species in tropical Asia; one species in China.

1. *Ochna integerrima* (Loureiro) Merrill, Trans. Amer. Philos. Soc., n.s., 24(2): 11, 265. 1935.

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*Elaeocarpus integerrimus* Loureiro, Fl. Cochinch. 1: 338. 1790 ["*integerrima*"]; *Ochna harmandii* Lecomte.

Small trees or shrubs, 2–7 m tall, 6–16 cm d.b.h., deciduous. Branchlets gray-brown, glabrous. Stipules 2–7 mm, soon deciduous; petiole 2–5 mm; leaf blade elliptical, obovate-oblong, or obovate-lanceolate,  $7-19 \times 3-5.5$  cm, base broadly cuneate, margin serrate, apex acute or obtuse; midvein prominent on both surfaces. Inflorescence corymbose, ca. 4 cm, on short branchlets. Flowers ca. 3 cm in diam., on 1.5–3 cm pedicels.

Sepals oblong, 1–1.4 cm, apex obtuse, reflexed during anthesis, red in fruit. Petals 5 (or 7), ovate, 1.3–2 cm, apex obtuse or rounded. Stamens 3-whorled, 0.9–1.2 cm; filaments 5–8 mm. Ovary 10–12-locular; style terete; stigma slightly lobed. Drupes  $10-12 \times 6-7$  mm, base slightly curved, apex obtuse. Fl. Mar–Apr, fr. May–Jun.

Rocky valley sides, wet areas by streams; 300–1400 m. SW Guangdong, Guangxi, Hainan [Cambodia, India, Laos, Malaysia, Myanmar, Pakistan, Thailand, Vietnam].

This species is found mainly in deciduous forests in SE Asia. The root can be used as a cathartic for treating worms and as a medicine for treating lymphatic disorders. It is also grown for decorative purposes.

## 3. SAUVAGESIA Linnaeus, Sp. Pl. 1: 203. 1753.

合柱金莲木属 he zhu jin lian mu shu

*Sinia* Diels.

Shrubs, rarely small trees or herbs, glabrous. Stipules 2, lacerate; leaf blade simple, margin frequently glandular serrate. Inflorescences terminal or axillary, rarely 1–2-flowered. Sepals (4 or)5, margins sometimes with glandular hairs. Petals (4 or)5, contorted.

Stamens 5, persistent; anthers longitudinally dehiscent or more rarely poricidal; staminodes in 1–3 whorls, spatulate to petaloid, sometimes fused in a tube. Ovary entire, (2 or)3-carpellate, 1-locular; ovules many, on parietal to basal placentas; style inserted at apex of ovary, persistent; stigma punctiform. Fruit a septical capsule with many small, alveolate seeds. Endosperm copious; embryo straight.

About 35 species: Neotropics, one species endemic in Africa, two species endemic in Malaysia; one species (endemic) in China.

**1. *Sauvagesia rhodoleuca*** (Diels) M. C. E. Amaral, Novon 16: 2. 2006.

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*Sinia rhodoleuca* Diels, Notizbl. Bot. Gart. Berlin-Dahlem 10: 889. 1930.

Small erect shrubs, ca. 1 m tall. Stem single or forked near apex, dark purple, striate, glabrous. Stipules (2–)3–5 mm; petiole 3–5 mm, sulcate adaxially; leaf blade narrowly lanceolate or narrowly elliptic, 7–15 × 1.5–3 cm, chartaceous, glabrous on both surfaces, base narrowly cuneate, margin with dense and unequal glandular teeth, apex acuminate; midvein prominent on both surfaces; secondary veins numerous, ± parallel; veinlets

conspicuous. Inflorescences 6–10 cm, narrow; peduncle 3–4 cm. Sepals light green, ovate to lanceolate, 3–4 mm, not enclosing mature floral bud, margins ciliate-glandular. Petals white or pink, broadly elliptic, 4–6.5 mm, slightly concave. Stamens 2.5–3.5 mm; filaments short; anthers sagittate, ca. 2 mm, longitudinally dehiscent; staminodes in 2 whorls, persistent, white, base slightly connate to fertile stamens; in outer whorl numerous, broadly spatulate, ca. 1 mm; in middle whorl 10, petaloid, oblong, 4–5 mm, 5 longer and 3-nerved alternate with 5 shorter and 1-nerved. Ovary 3-carpellate, ovoid, 1.5–3 mm; style terete. Capsule ovoid, ca. 5 mm, 3-valvate. Seeds ca. 1.5 mm; testa dark red. Fl. Apr–May, fr. Jun–Jul.

- By streams in dense forests; ca. 1000 m. Guangdong, Guangxi.