

3. MELODINUS J. R. & G. Forster, Char. Gen. Pl. 37, t. 19. 1776.

山橙属 shan chen shu

Plants woody lianas or sometimes low shrubs, latex present. Leaves opposite. Cymes terminal or axillary. Flowers white. Calyx without glands. Corolla salverform; tube cylindric, dilated at staminal insertion; lobes usually oblique-falcate, overlapping to left; corona scales 5 or 10, erect. Stamens inserted at or below middle of corolla tube, included; filaments very short; anthers free from pistil head, base rounded; disc absent. Ovary 2-loculed; ovules numerous. Style short; pistil head apex dilated, 2-cleft. Berry large, pulpy. Seeds numerous; coma absent.

About 50 species: tropical or subtropical Asia and Australia; 12 species in China.

- 1a. Flowers always axillary; apex of flower bud acuminate 1. *M. axillaris*
- 1b. Flowers at least partly terminal; apex of flower bud rounded to subacute.
 - 2a. Leaves pubescent, at least abaxially.
 - 3a. Branchlets and leaf blade puberulent to glabrescent abaxially; lateral leaf veins ca. 15 pairs 11. *M. fusiformis*
 - 3b. Branchlets and leaf blade densely pubescent abaxially; lateral leaf veins 8–10 pairs.
 - 4a. Leaf blade elliptic or oblong; sepals ca. 7 mm; corolla lobes narrowly elliptic, ca. 8 mm; berries ellipsoid; seeds narrowly elliptic, ca. 9 mm 10. *M. hemsleyanus*
 - 4b. Leaf blade broadly ovate to orbicular; sepals 3–4 mm; corolla lobes oblong, falcate, ca. 13 mm; berries fusiform; seeds orbicular, ca. 6 mm 12. *M. morsei*
 - 2b. Leaves glabrous or sparsely hairy along midvein only.
 - 5a. Leaf blade with lateral veins arcuate-ascending.
 - 6a. Fruit ca. 1.8 × 0.7 cm; shrubs to 0.6 m 8. *M. chinensis*
 - 6b. Fruit 5.5–10.5 × 2–10.5 cm; woody lianas to 10 m.
 - 7a. Young branches and leaves scaly; sepals acute; fruit ca. 10.5 cm in diam. 2. *M. yunnanensis*
 - 7b. Plant glabrous except for inflorescences; sepals rounded; fruit to 9 cm.
 - 8a. Corolla lobes falcate with a distinct subterminal notch; fruit ± globose, to 8 cm in diam. 3. *M. suaveolens*
 - 8b. Corolla lobes ovate; fruit cylindric-ellipsoid, ca. 5 cm wide 9. *M. cochinchinensis*
 - 5b. Leaf blade with lateral veins closely parallel at 70–80° to midvein.
 - 9a. Material with flowers.
 - 10a. Corolla lobes orbicular.
 - 11a. Leaf blade very narrowly elliptic, up to 2.1 cm wide; (100–1000 m; Taiwan) 4. *M. angustifolius*
 - 11b. Leaf blade elliptic, 3(–4) cm wide; (1600–2900 m; Guizhou, Yunnan) 5. *M. khasianus*
 - 10b. Corolla lobes ovate, oblong, or obliquely obovate.
 - 12a. Leaf blade thinly membranous; corolla exterior and corona scales glabrous 6. *M. tenuicaudatus*
 - 12b. Leaf blade somewhat leathery; corolla exterior and corona scales puberulent 7. *M. magnificus*
 - 9b. Material with fruit.
 - 13a. Fruit ± fusiform, 2–3 cm wide, apex acuminate.
 - 14a. Leaf blade very narrowly elliptic, ± leathery (100–1000 m; Taiwan) 4. *M. angustifolius*
 - 14b. Leaf blade oblong to narrowly oblong, membranous (800–1800 m; Guangxi, Guizhou, Yunnan) 6. *M. tenuicaudatus*
 - 13b. Fruit ovoid or ellipsoid, 3–4 cm wide, apex rounded to subacute.
 - 15a. Fruit ca. 5.5 cm; petiole glabrous; leaf blade 0.5–4 cm wide 5. *M. khasianus*
 - 15b. Fruit 6–8 cm; petiole pubescent; leaf blade 4–6.5 cm wide 7. *M. magnificus*

1. *Melodinus axillaris* W. T. Wang ex Tsiang & P. T. Li, Acta Phytotax. Sin. 11: 349. 1973.

腋花山橙 ye hua shan chen

Lianas to 3 m. Branchlets angular, slightly pubescent. Petiole 5–9 mm; leaf blade oblong, 10–18 × 3.5–6 cm, papery, glabrous, base obtuse, apex acute; lateral veins 17–20 pairs, slightly prominent on both surfaces. Inflorescences axillary, 2–5-branched, 3.5–8 cm, pubescent; peduncle 2–3 cm; bracts and bracteoles narrowly elliptic, 2–3 mm, puberulent outside. Pedicel 2–3 cm. Flower buds narrowly oblong, short pubescent outside, acuminate. Sepals ovate, 3–

3.5 × ca. 2 mm, glabrous outside, ciliate, apex obtuse. Corolla white, ca. 1.2 cm, tube pubescent inside; lobes oblong; corona scales villous. Filaments pubescent. Ovary glabrous. Style filiform; pistil head conical. Fl. May.

• Humid forests; 1000 m. S Yunnan.

The generic placement of this species is uncertain because no fruits have been seen.

2. *Melodinus yunnanensis* Tsiang & P. T. Li, Acta Phytotax. Sin. 11: 355. 1973.

雷打果 lei da guo

Lianas to 10 m. Branches dark gray, glabrous; young branchlets and leaves scaly. Petiole 5–10 mm; leaf blade oblong or narrowly elliptic, 7–18 × 2.5–5.2 cm, papery, base rounded, apex acuminate; lateral veins 10–15 pairs, nearly flat on both surfaces. Cymes umbellate, terminal and axillary, 5–6.5 cm; peduncle 1.5–2 cm, glabrous; bracts and bracteoles 3–7 mm. Pedicel 5–7 mm, pubescent. Flower buds cylindric, ca. 2 cm, glabrous outside. Sepals broadly ovate, ca. 7 × 5 mm, ciliate, apex acute. Corolla white, tube ca. 1.2 cm, pubescent inside; lobes oblong, ca. 1.1 cm; corona scales linear, decurrent to lower part of corolla tube, included. Ovary glabrous. Style very short. Berries globose, ca. 10.5 cm in diam. Fl. May.

- Dense montane forests; 1500–2000 m. W Guangxi, S Yunnan.

3. *Melodinus suaveolens* (Hance) Champion ex Benth, Hooker's J. Bot. Kew Gard. Misc. 4: 333. 1852.

山橙 shan chen

Lycimnia suaveolens Hance in Walpers, Ann. Bot. Syst. 3: 31. 1852; *Melodinus laetus* Champion ex Benth.

Lianas to 10 m, glabrous except for inflorescences. Petiole to 1.2 cm; leaf blade elliptic or ovate, 5–10 × 1.8–5 cm, leathery, base attenuate to rounded, apex short acuminate. ciliate, pubescent outside. Corolla white, 6–10 mm in diam., tube 5–8 mm; lobes orbicular, ca. 6 × 6 mm; corona scales 5, apex 2-cleft, slightly exerted from throat. Berries fusiform, 5–9 × 2–3 cm. Seeds black, triangular, smooth. Fl. summer-autumn.

- Thickets, coral rocks; 100–1000 m. Taiwan.

5. *Melodinus khasianus* J. D. Hooker, Fl. Brit. India 3: 629. 1882.

景东山橙 jing dong shan chen

Lianas to 10 m, glabrous except for flowers. Petiole 6–7 mm; leaf blade narrowly elliptic, 6–12 × 0.5–4 cm, base cuneate, apex short acuminate; lateral veins subparallel. Cymes or fascicles axillary near branch apex, 2.5–6.5 cm, few flowered; bracts ca. 3 mm. Sepals orbicular, ca. 3 mm, ciliate. Corolla white, tube ca. 6 mm; lobes orbicular, ca. 5.5 mm in diam., obliquely 2-lobed or 2-cleft at apex; corona scales 5, oblong. Berries ovoid, ca. 5.5 × 4 cm. Fl. Oct.

Humid forests, valleys; 1600–2900 m. Guizhou, Yunnan [India].

6. *Melodinus tenuicaudatus* Tsiang & P. T. Li, Acta Phytotax. Sin. 11: 353. 1973.

薄叶山橙 bao ye shan chen

Lianas to 4 m. Branches gray; branchlets gray yellowish. Petiole ca. 5 mm; leaf blade oblong to narrowly so, 6–15 × 1.5–4 cm, membranous, glabrous, base cuneate or broadly so, apex caudate-acuminate, acumen 1–1.5 cm; lateral veins numerous, subparallel at 70–80° to midvein, flat on both surfaces. Cymes umbellate, terminal, 4–6 cm, 3–5-flowered;

Cymes terminal and axillary. Flower buds rounded or obtuse at apex, minutely pubescent outside. Flowers fragrant. Sepals ovate, ca. 3 mm, minutely pubescent outside, apex rounded or obtuse. Corolla white, tube 1–1.4 cm; lobes 0.5–1 × as long as tube, suborbicular, falcate, with a distinct notch near apex; corona campanulate or tubular, apex 5-cleft, exerted from throat. Berries globose, 5–8 cm in diam. Fl. May–Nov, fr. Aug–Dec.

Open forests, humid brushwood; 100–800 m. Guangdong, Guangxi, Hainan [Vietnam].

A fine, strong bast fiber, obtained from the inner bark, is used in making ropes and sacks. The fruit is used to treat abdominal pain, infantile malnutrition due to intestinal parasites, indigestion, and hernia.

4. *Melodinus angustifolius* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 193. 1911.

台湾山橙 tai wan shan chen

Lianas to 5 m. Petiole 2–5 mm; leaf blade narrowly elliptic, 5–10 × 1–2.1 cm, somewhat leathery, base rounded to cuneate, apex acuminate; lateral veins subparallel, prominent on both surfaces. Cymes terminal and axillary, 1.5–2.5 cm, 3–12-flowered; bracts and bracteoles ovate, ca. 2 mm. Pedicel 2–4 mm. Sepals triangular, 1–2 mm, peduncle ca. 1.2 cm, puberulent; bracts and bracteoles narrowly elliptic, 2.5–4 mm. Pedicel ca. 5 mm. Sepals ovate. Corolla white, tube ca. 1.8 cm, glabrous outside, pubescent inside; lobes oblong, as long as tube; corona scales 10, narrowly elliptic. Filaments puberulent. Berries sub-fusiform, 6.5–7 × 1.8–2.5 cm, acuminate at both ends or base obtuse. Fl. May–Sep, fr. Sep–Dec.

• Dense montane forests, brushwoods; 800–1800 m. Guangxi, Guizhou, Yunnan.

7. *Melodinus magnificus* Tsiang, Sunyatsenia 3: 128. 1936.

茶藤 cha teng

Lianas to 6 m. Branchlets dark brown, rust-colored pubescent. Petiole 6–8 mm, pubescent; leaf blade narrowly oblong, 12–21 × 4–6.5 cm, somewhat leathery, glabrous, base cuneate, apex acuminate or rarely obtuse; lateral veins 15–20 pairs, subparallel, pubescent. Cymes terminal, shorter than leaves; bracteoles sublinear, 3–5 mm, short pubescent. Sepals oblong, pubescent outside. Corolla white, puberulent outside; tube 1.5–1.7 cm, pubescent inside; lobes obliquely obovate, 1.5–1.8 cm; corona scales thick, indistinct, minutely pilose, adnate to corolla throat, apex shortly 2-cleft. Berries ellipsoid, 6–8 × 3–4 cm. Fl. Jun–Aug, fr. Oct–Dec.

- Sparse woods; 500–800 m. S Guangxi.

8. *Melodinus chinensis* P. T. Li & Z. R. Xu, Bull. Bot. Res., Harbin 5(2): 129. 1985.

贵州山橙 gui zhou shan chen

Shrubs to 60 cm tall. Branchlets yellowish gray, glabrous. Petiole ca. 5 mm; leaf blade narrowly elliptic, 5–9 × 1.5–3 cm, base cuneate, apex acuminate, midvein elevated

abaxially; lateral veins numerous, nearly flat on both surfaces, glabrous. Cymes dichotomous, ca. 3-flowered; peduncle ca. 1 cm, glabrous; bracteoles 2, triangular, ca. 1.5×1.5 mm, pubescent. Pedicel 7–outside 10 mm, pubescent. Sepals ovate to triangular, ca. 3 mm, pubescent, glabrous inside, apex subacute to rounded. Berries ellipsoid, ca. $1.8 \text{ cm} \times 7 \text{ mm}$. Fl. May.

- Montane limestone brushwoods; 800 m. SE Guizhou (Lipo).

9. *Melodinus cochinchinensis* (Loureiro) Merrill, Trans. Amer. Philos. Soc. 24(2): 310. 1935.

思茅山橙 si mao shan chen

Oncinus cochinchinensis Loureiro, Fl. Cochinch. 1: 123. 1790; *Melodinus henryi* Craib.

Lianas stout, to 10 m, glabrous except for inflorescences. Branches dark brown. Petiole 6–10 mm; leaf blade elliptic or narrowly so, $6\text{--}19 \times 2.2\text{--}6.5$ cm, papery, base cuneate, apex acute or acuminate; lateral veins numerous, convergent, conspicuous. Cymes paniculate, terminal, 3-branched, $4\text{--}5.5$ cm, minutely pilose; bracts and bracteoles minute. Pedicel short. Sepals orbicular or broadly elliptic, ca. 2 mm, ciliate, apex subacute to rounded. Corolla white; tube ca. 6 mm, pilose except at base; lobes ovate, ca. 3.5 mm; corona large,

- Sparse montane woods; 500–1500 m. Guizhou, Sichuan, Yunnan.

11. *Melodinus fusiformis* Champion ex Benth, Hooker's J. Bot. Kew Gard. Misc. 4: 332. 1852.

尖山橙 jian shan chen

Melodinus edulis H. Léveillé; *M. esquirolii* H. Léveillé; *M. flavus* H. Léveillé; *M. seguinii* H. Léveillé; *M. wrightioides* Handel-Mazzetti.

Lianas stout, to 10 m, juvenile parts pubescent, later glabrescent. Bark gray-brown. Petiole 4–6 mm; leaf blade elliptic or oblong, rarely narrowly elliptic, $4.5\text{--}12 \times 1\text{--}5.3$ cm, somewhat leathery, base cuneate or rounded, apex acuminate; lateral veins ca. 15 pairs, obliquely spreading and reticulate toward margin. Cymes terminal, 3–5 cm, 6–12-flowered. Pedicel 5–10 mm. Sepals ovate, 4–5 mm, acute. Corolla white, tube 1.2–2 cm; lobes obliquely narrow ovate or obovate, $(0.8\text{--})1.1\text{--}2 \text{ cm} \times 3.5\text{--}9 \text{ mm}$; corona scales 5, indistinct, exserted, villous, apex 2- or 3-cleft. Stamens inserted near base of corolla tube. Berries fusiform, $3.5\text{--}5.3 \times 2.2\text{--}4$ cm. Fl. Apr-Sep, fr. Jun-Dec.

- Sparse montane woods, valleys; 300–1500 m. Guangdong, Guangxi, Guizhou.

The plant is used for the treatment of rheumatism and injury. The fruit is poisonous.

12. *Melodinus morsei* Tsiang, Sunyatsenia 6: 110. 1941.

龙州山橙 long zhou shan chen

Lianas to 3 m. Branchlets tomentose. Petiole ca. 5 mm; leaf blade broadly ovate or orbicular, $4.5\text{--}9 \times 2\text{--}7$ cm,

lobes 2-cleft, villous. Ovary glabrous. Style ca. 3 mm. Berries narrowly ellipsoid, ca. 9×5 cm. Seeds oblong or ovate, ca. 1.3 cm. Fl. Apr-May, fr. Sep-Nov.

Montane forests; 800–2800 m. S Yunnan [Myanmar, Thailand, Vietnam].

The fruit are used to treat infantile meningitis and fractures.

10. *Melodinus hemsleyanus* Diels, Bot. Jahrb. Syst. 29: 539. 1900.

川山橙 chuan shan chen

Trachelospermum esquirolii H. Léveillé.

Lianas stout, to 8 m, juvenile parts densely minutely tomentose. Petiole ca. 5 mm; leaf blade elliptic, oblong, or narrowly so, $7\text{--}15 \times 4\text{--}5$ cm, somewhat leathery, lustrous and glabrous adaxially, pubescent near veins abaxially, base cuneate or obtuse, apex acuminate; lateral veins ca. 10 pairs, conspicuous on both surfaces. Cymes terminal. Sepals ovate-oblong, ca. 7 mm, densely pubescent outside, apex acuminate. Corolla white, tube ca. 1 cm, puberulent on both surfaces; lobes narrowly elliptic, ca. 8 mm; corona scales minute, unequal. Berries ellipsoid, to 7.5×3 cm. Seeds narrowly elliptic, ca. 9 mm. Fl. May-Aug, fr. Jul-Dec.

leathery, glabrescent and shiny adaxially, tomentose abaxially, base rounded or truncate, apex short acuminate; lateral veins 8–10 pairs, flat adaxially, slightly prominent abaxially. Cymes terminal, 6–8-flowered; peduncle 1–2 cm, tomentose. Pedicel ca. 3 mm. Sepals ovate, $3\text{--}4 \times 2\text{--}2.5$ mm, ciliate, villous outside, acute. Corolla white, tube ca. 1.5 cm, minutely tomentose; lobes oblong, falcate, ca. 13×4 mm; corona scales 5, oblong, pilose, apex 2-cleft. Filaments pilose. Ovary glabrous. Berries fusiform, ca. 8.5×2 cm, acuminate at both ends. Seeds orbicular, ca. 6 mm in diam. Fl. Aug-Oct, fr. Sep-Dec.

- Montane forests. N Guangdong, SW Guangxi.

