

6. RHAMNELLA Miquel, Prolus. Fl. Jap. 218; Ann. Mus. Bot. Lugduno-Batavi 3: 30. 1867.

猫乳属 mao ru shu

Chaydaia Pitard.

Shrubs or small trees, rarely scandent, evergreen to mostly deciduous. Leaves alternate, shortly petiolate; stipules narrowly triangular or lanceolate, often persistent; leaf blade papery or submembranous, pinnately veined, margin serrulate. Flowers yellow-green, small, bisexual, 5-merous, pedicellate, in shortly pedunculate axillary cymes, or fascicled in axils of leaves. Calyx tube cup-shaped; lobes triangular, midvein adaxially keeled and with centrally inserted beaklike protrusion. Petals ovate-spatulate or orbicular-spatulate, ± distinctly cucullate, enfolding stamens. Stamens dorsifixed; filaments free from claw at base, lanceolate-linear. Disk pentagonal, thin, lining calyx tube, nectariferous. Ovary superior, base slightly immersed in disk, 1- or 2-loculed or imperfectly 1-loculed, with 2 ovules per locule; styles terminally 2-fid. Drupe yellowish to orange, turning black or purple-black when ripe, cylindrical-ellipsoidal base with persistent remnants of calyx tube, with rudimentary style at apex, 1- or 2-loculed, with 1 or 2 seeds.

Eight species: China, Japan, Korea; eight species (five endemic) in China.

- 1a. Evergreen shrubs or small trees, rarely scandent..... 1. *R. rubrinervis*
- 1b. Deciduous shrubs or small trees, never scandent.
 - 2a. Young branches, petioles, and abaxial leaf surface pubescent.
 - 3a. Leaf blade obovate-oblong or obovate-elliptic, rarely obovate, apex caudate-acuminate or long acuminate, abaxially pubescent or only on veins, lateral veins 5–11(–13) pairs 2. *R. franguloides*
 - 3b. Leaf blade subelliptic or oblong, apex shortly acuminate or acuminate, abaxially tomentose or pubescent, lateral veins 5–8 pairs 3. *R. julianae*
 - 2b. Young branches, petioles, and abaxial leaf surface glabrous or subglabrous.
 - 4a. Leaf blade 7–15 cm, obovate-elliptic or obovate-oblong, apex caudate-acuminate, glabrous or abaxially pilose on veins, lateral veins 7–10 pairs 4. *R. caudata*
 - 4b. Leaf blade usually shorter than 7 cm, ovate, ovate-elliptic, or lanceolate-elliptic, apex acute or acuminate, lateral veins 4–8 pairs.
 - 5a. Leaf lateral veins 4 or 5 pairs, margin subentire or inconspicuously serrulate.
 - 6a. Leaf blade ovate or ovate-elliptic, apex shortly acuminate, rarely acute, margin entire at lower half, inconspicuously serrulate at upper half 5. *R. wilsonii*
 - 6b. Leaf blade elliptic or lanceolate-elliptic, broadest at middle, apex acute, margin inconspicuously serrulate 6. *R. gilgitica*
 - 5b. Leaf lateral veins 5–8 pairs, margin conspicuously serrulate.
 - 7a. Leaf blade oblong, both surfaces glabrous, margin entire at lower 1/3, lateral veins 5–7 per side 7. *R. forrestii*
 - 7b. Leaf blade narrowly elliptic, adaxially pilose on veins, margin serrulate, lateral veins 6–8 pairs 8. *R. martini*

1. *Rhamnella rubrinervis* (H. Léveillé) Rehder, J. Arnold Arb. 15: 12. 1934.

苞叶木 bao ye mu

Embelia rubrinervis H. Léveillé, Repert. Spec. Nov. Regni Veg. 10: 374. 1912; *Berchemiella crenulata* (Handel-Mazzetti) Hu; *Chaydaia crenulata* Handel-Mazzetti; *C. rubrinervis* (H. Léveillé) C. Y. Wu ex Y. L. Chen & P. K. Chou; *Rhamnella crenulata* (Handel-Mazzetti) T. Yamazaki; *R. hainanensis* Merrill; *R. longifolia* H. T. Tsai & K. M. Feng.

Shrubs or small trees, rarely scandent shrubs, evergreen. Young branches pilose; older branches reddish brown or gray-brown, glabrous. Leaves alternate; stipules lanceolate, persistent; petiole 4–10 mm, pilose or subglabrous; leaf blade abaxially dark green, shiny, adaxially pale green, oblong or ovate-oblong, 6–13(–17) × 2–5 cm, leathery or thinly so, abaxially glabrous, adaxially glabrous, or puberulent on veins, lateral veins 5–7 pairs, slightly impressed abaxially, prominent adaxially, sometimes turning pink when dry, base rounded, margin inconspicuously remotely serrate or subentire, apex acuminate to long acuminate. Flowering branches axillary, 6–15 cm,

sparsely puberulent. Flowers bisexual, 5-merous, few to 10 in axillary cymes, or subsessile or shortly pedunculate at bracteole leaf of flowering branches; bracteole leaf similar to leaves in vegetative branches, but smaller. Pedicel 2–4 mm, sparsely puberulent. Sepals triangular, adaxially midvein raised, rostellate at lower middle. Petals obovate, shortly clawed. Stamens involute by petals, ca. as long as petals. Disk rounded, thick. Ovary globose, not immersed in disk; styles 2-fid. Drupe purple-red or orange at maturity, ovoid-cylindrical, 8–10 mm, 5–6 mm in diam., base with persistent calyx tube; fruiting pedicel 4–5 mm, puberulent or subglabrous, 1-loculed, 1-seeded, developmentally 2-loculed, with developed and undeveloped seeds. Fl. Jul–Sep, fr. Aug–Nov.

Mountain forests and thickets; below 1500 m. Guangdong, Guangxi, Guizhou, Yunnan [Vietnam].

2. *Rhamnella franguloides* (Maximowicz) Weberbauer in Engler & Prantl, Nat. Pflanzenfam. III(5): 406. 1895.

猫乳 mao ru

Microrhamnus franguloides Maximowicz, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 10(11): 4. 1866; *Berchemia*

congesta S. Moore; *M. taquetii* H. Léveillé; *Rhamnella japonica* Miquel; *R. obovalis* C. K. Schneider.

Shrubs or small trees, deciduous, 2–9 m tall. Young branches greenish, pilose or densely pubescent. Stipules lanceolate, 3–4 mm, persistent; petiole 2–6 mm, densely pubescent; leaf blade abaxially yellow-green, adaxially green, obovate-oblong, obovate-elliptic, oblong, or narrowly elliptic, rarely obovate, 4–12 × 2–5 cm, abaxially pubescent at least on veins, adaxially glabrous, lateral veins 5–11(–13) pairs, base rounded, rarely cuneate, slightly oblique, margin serrulate, apex caudate-acuminate, acuminate, or shortly acuminate. Flowers yellow-green, bisexual, 6–18 in axillary cymes; peduncles 1–4 mm, pilose or glabrous. Sepals triangular-ovate, sparsely pilose at margin. Petals broadly obovate, apex emarginate. Pedicel 1.5–4 mm, sparsely pilose or glabrous. Drupe red or orange at maturity, turning black or purple-black when dry, cylindrical, 7–9 mm, 3–4.5 mm in diam.; fruiting pedicel 3–5 mm, pilose or glabrous. Fl. May–Jul, fr. Jul–Oct. $2n = 24^*$.

• Forests, slopes, roadsides; below 1100 m. Anhui, Hebei, Henan, W Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, S Shanxi, Shandong, Zhejiang.

3. *Rhamnella julianae* C. K. Schneider in Sargent, Pl. Wilson. 2: 223. 1914.

毛背猫乳 mao bei mao ru

Shrubs 2–3 m tall, deciduous. Young branches green, tomentose or pilose; branchlets black-brown, with few inconspicuous lenticels. Petiole 2–5 mm, tomentose or pilose; leaf blade abaxially gray-green, adaxially dark green, subelliptic or ovate-oblong, 4–8 × 2–4 cm, papery, abaxially tomentose or densely pubescent, or only pilose, adaxially subglabrous, lateral veins 5–8 pairs, base rounded or subcordate, slightly oblique, margin serrulate, apex shortly acuminate or long acuminate. Flowers yellow-green, 2–4 in axillary cymes. Sepals broadly ovate, apex acute. Petals obovate, slightly longer than stamens, apex emarginate. Drupe purple-red at maturity, subcylindrical, ca. 7 mm; fruiting pedicel 3.5–4.5 mm. Fl. May, fr. Jul–Aug.

• Forest understories on slopes; 1000–1600 m. Hubei, Sichuan, Yunnan.

This species differs from other species in the genus in having tomentose or densely pilose young branches, abaxial leaf surfaces, and petioles.

4. *Rhamnella caudata* Merrill, Sunyatsenia 2: 11. 1934.

尾叶猫乳 wei ye mao ru

Shrubs or small trees, deciduous, to 4 m tall. Young branches glabrous or subglabrous. Petiole 4–6 mm, glabrous or pilose; leaf blade subelliptic, rarely obovate-elliptic or obovate-oblong, 7–15 × 3–5.5 cm, both surfaces glabrous or abaxially pilose on veins, lateral veins 7–10 pairs, base subrounded, slightly oblique, margin shallowly serrate, apex caudate-acuminate. Flowers yellow-green, 6–10 cm, glabrous, in axillary or terminal cymes; peduncles 3–5 mm. Pedicel 2–3 mm. Drupe yellow-green, turning black or purple-black at maturity, subcylindrical, 8–9 mm, 4–5 mm in diam.; fruiting pedicel ca. 4 mm. Fl. May–Jun, fr. Jul–Aug.

• Mixed forests on slopes, field margins, roadsides. NE Guangdong.

5. *Rhamnella wilsonii* C. K. Schneider in Sargent, Pl. Wilson. 2: 222. 1914.

卵叶猫乳 luan ye mao ru

Shrubs, rarely small trees, deciduous, to 8 m tall. Young branches greenish, glabrous; old branches brown. Stipules subulate, partly caducous; petiole 3–7 mm, glabrous or pilose; leaf blade adaxially grayish white when dry, ovate or ovate-elliptic, 1.5–6 × 0.8–2.8 cm, papery, both surfaces glabrous, lateral veins (3–)5 pairs, base rounded or broadly cuneate, slightly oblique, margin subentire or conspicuously serrulate on apical half, apex shortly acuminate, rarely acute. Flowers yellow-green, glabrous, 2–6-fascicled or in axillary, nearly sessile cymes. Pedicel 1.3–3.5 mm. Drupe purple-black or black at maturity, cylindrical, 6–8 mm, 3–3.5 mm in diam.; fruiting pedicel 3–4 mm, glabrous. Fl. May–Jul, fr. Jul–Oct.

• Forest margins on slopes and in valleys, thickets; 2000–3000 m. W Sichuan, E Xizang.

6. *Rhamnella gilgitica* Mansfeld & Melch, Notizbl. Bot. Gart. Berlin-Dahlem 15: 112. 1940.

西藏猫乳 xi zang mao ru

Shrubs deciduous, to 2 m tall. Young branches glabrous or pilose; old branches dark brown. Stipules narrowly lanceolate, caducous; petiole 2–4 mm, glabrous; leaf blade abaxially gray, adaxially dark green, elliptic or lanceolate-elliptic, 2–5 × 1–2 cm, papery, both surfaces glabrous, lateral veins 4 or 5(or 6) pairs, base subrounded or broadly cuneate, broadest at middle, margin inconspicuously serrulate or entire at basal half and serrulate at upper half, apex acute. Flowers yellow-green, glabrous, solitary or 2–5-fascicled in axils of leaf, or in pedunculate cymes. Drupe orange at maturity, subglobose, 6–8 mm, 3–4 mm in diam., with rudimentary styles at apex; fruiting pedicel (immature) 2–3 mm. Fl. May–Jul, fr. Sep.

Subalpine forests and thickets; 2600–2900 m. SW Sichuan, SE Xizang, NW Yunnan [Kashmir].

This species is quite similar to *Rhamnella wilsonii*, but the latter differs in having leaves ovate or ovate-elliptic, usually broadest at base.

7. *Rhamnella forrestii* W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 62. 1917.

川滇猫乳 chuan dian mao ru

Shrubs deciduous, 2–4 m tall. Young branches green, slender, glabrous. Stipules subulate, basally persistent; petiole 2–6 mm, puberulent or glabrous; leaf blade abaxially pale green, adaxially dark green, oblong or lanceolate-oblong, 3–9 × 2–3.5 cm, papery or thinly papery, both surfaces glabrous, lateral veins 5–7 pairs, base rounded or broadly cuneate, margin subentire at basal part, serrulate at upper half, apex acuminate or acute. Flowers yellow-green, glabrous, 2–8-fascicled in leaf axils, or in axillary cymes; peduncles 1–2 mm or shorter. Pedicel 2–3 mm, glabrous. Drupe orange to red when young, black at maturity, cylindrical, 8–9 mm, ca. 3.5 mm in diam.; fruiting pedicel 3–6 mm, glabrous. Fl. May–Jul, fr. Jul–Sep.

• Subalpine forests and thickets; 2000–3000 m. SW and W Sichuan, E and SE Xizang, NW Yunnan.

8. *Rhamnella martini* (H. Léveillé) C. K. Schneider in Sargent, Pl. Wilson. 2: 225. 1914 [*“martinii”*].

多脉猫乳 duo mai mao ru

Rhamnus martini H. Léveillé, Repert. Spec. Nov. Regni Veg. 10: 473. 1912; *Microrhamnus cavaleriei* H. Léveillé; *Rhamnella mairei* C. K. Schneider; *Rhamnus yunnanensis* H. P. Peleg.

Shrubs or small trees, deciduous, to 8 m tall. Young branches yellow-green, slender, glabrous; old branches dark-brown, with numerous yellow lenticels. Stipules subulate, basally persistent; petiole 2–4 mm, glabrous or pilose; leaf blade narrowly elliptic, lanceolate-elliptic, or oblong-elliptic, 4–11 × 1.5–4.2 cm, papery, both surfaces glabrous, rarely abaxially slightly pilose on veins, lateral veins 6–8 pairs, base rounded, or subrounded, slightly oblique, margin serrulate, apex acute or acuminate. Flowers yellow-green, glabrous, in axillary cymes; peduncles very short, to 2 mm. Sepals ovate-triangular, apex acute. Petals obovate, apex emarginate. Pedicel 2–3 mm. Drupe purple-black at maturity, subcylindric, ca. 8 mm, 3–3.5 mm in diam.; fruiting pedicel 3–4 mm. Fl. Apr–Jun, fr. Jul–Sep.

Mixed forests, thickets on mountains; 800–2800 m. N Guangdong, Guizhou, W Hubei, Sichuan, SE Xizang, Yunnan [Nepal].

The leaves differ from those of *Rhamnus forrestii* in being narrowly elliptic or lanceolate-elliptic with 6–8 pairs of lateral veins.

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