

5. CAYRATIA Jussieu in Cuvier, Dict. Sci. Nat. 10: 103. 1818, nom. cons.

乌莓属 wu lian mei shu

Ren Hui (任辉); Jun Wen (文军)

Lianas, usually woody, hermaphroditic or polygamo-monoecious. Tendrils usually 2- or 3-furcate, rarely racemously branched. Leaves 3-foliolate or pedately 5-foliolate. Compound dichasium or corymbose polychasium. Flowers 4-merous. Petals 4, spreading, falling off separately. Stamens 4. Disk well developed, 4-lobed or undulately lobed. Style short; stigma slightly or inconspicuously expanded. Berry globose or nearly so, 1–4-seeded. Seeds semiglobose; cross-section of endosperm semicircular or T-shaped.

About 60 species: Africa, Asia, Oceania; 17 species (nine endemic) in China.

Cayratia dichromocarpa (H. Léveillé) Rehder (J. Arnold Arbor. 15: 27. 1934; *Vitis dichromocarpa* H. Léveillé, Repert. Spec. Nov. Regni Veg. 3: 350. 1907), described from Guizhou, and *Cayratia setulosa* (Diels & Gilg) Suessenguth (Mitt. Bot. Staatssamml. München 1: 353. 1953; *Cissus setulosa* Diels & Gilg, Bot. Jahrb. Syst. 29: 466. 1900), described from Chongqing, could not be treated here because no material was seen by the authors.

- 1a. Lower part of inflorescence axis articulate, nodes with bracts; seeds semiglobose, abaxial surface smooth and adaxial surface flat, with a membrane enclosing ventral hole (*C.* subg. *Cayratia*).
 - 2a. Leaves pedate, with 5–7 leaflets.
 - 3a. Leaflets adaxially with appressed hairs, abaxially sparsely pilose 4. *C. pedata*
 - 3b. Leaflets nearly glabrous, abaxially veins sparsely pilose 5. *C. menglaensis*
 - 2b. Leaves 3-foliolate.
 - 4a. Branchlets 1–3 mm in diam.; leaves nearly membranous when dry, sparsely hispidulous, midvein sparsely pilose, petiole 2–3 cm 3. *C. lanceolata*
 - 4b. Branchlets 4–5 mm in diam.; leaves papery, abaxially densely gray pubescent, petiole 8–18 cm.
 - 5a. Lateral leaflets oblong or oblong-lanceolate, base of central leaflet cuneate, margin with conspicuous, fine teeth 1. *C. geniculata*
 - 5b. Lateral leaflets broadly ovate or rhombic-elliptic, base of central leaflet slightly cordate, margin entire or inconspicuously toothed 2. *C. cordifolia*
- 1b. Lower part of inflorescence axis not articulate and without bracts; seeds obovoid-elliptic or triangular-obovate, ventral mid-raphe raised (*C.* subg. *Discypharia*).
 - 6a. Leaves 3-foliolate.
 - 7a. Tendrils racemously 3–5-branched; leaflets oval or nearly orbicular, margin with rounded teeth, abaxially pubescent 6. *C. trifolia*
 - 7b. Tendrils 2(or 3)-branched; leaflets oblong, ovate, or ovate-rhombic, margin with obtuse teeth, only abaxially sparsely pilose or glabrescent on veins.
 - 8a. Leaflets 7.5–14.5 × 5.5–8 cm; tendrils trifurcate 7. *C. timoriensis*
 - 8b. Leaflets 2–8 × 1.5–4 cm; tendrils bifurcate or trifurcate.
 - 9a. Leaflets oblong or ovate, 4–8 × 2–4 cm; tendrils bifurcate 10. *C. japonica*
 - 9b. Leaflets ovate-rhomboid, 2–5 × 1.5–2.5 cm; tendrils bifurcate or trifurcate 9. *C. maritima*
 - 6b. Leaves pedately 5-foliolate, rarely 3-foliolate.
 - 10a. Leaflets glabrous.
 - 11a. Leaflet apically cuspidate, margin with irregular teeth, teeth slightly bent outward or forward; style and ovary forming a gradual conical structure 8. *C. medogensis*
 - 11b. Leaflet apically acuminate, acute, or rounded, margin with regular teeth; style slender, conspicuously different from ovary with a sharp transition.
 - 12a. Petals apically not corniculate 10. *C. japonica*
 - 12b. Petals apically conspicuously corniculate 16. *C. corniculata*
 - 10b. Leaflets at least abaxially ± pubescent.
 - 13a. Branchlets, peduncles, petioles, and abaxial surface of leaflets brownish and with nodiferous villous hairs.
 - 14a. Leaflets nearly sessile or with very short petiolules; petals apically corniculate, with ciliate margins 15. *C. ciliifera*
 - 14b. Petiolules conspicuous; petals apically not corniculate.
 - 15a. Lateral veins of central leaflet 4–9 pairs, margin (5–)7–14(–17)-toothed on each side 13. *C. oligocarpa*
 - 15b. Lateral veins of central leaflet 13–15 pairs, margin 18–22-toothed on each side 14. *C. fugongensis*
 - 13b. Branchlets, peduncles, petioles, and leaves ± pubescent.
 - 16a. Branchlets, petioles, and abaxial surface of leaflets densely pubescent.
 - 17a. Leaflets abaxially with brownish or grayish brown hairs, margin 4–11-toothed on each side 10. *C. japonica*
 - 17b. Leaflets abaxially with dense grayish white hairs, margin 20–28-toothed on each side 12. *C. albifolia*

- 16b. Branchlets, petioles, and leaflet veins abaxially pilose.
18a. Leaves pedate, 3–9-foliolate, leaflets or parted lobes lanceolate, obovate-oblong, or narrowly elliptic, petiole usually only 0.3–1 cm 17. *C. cardiospermoides*
18b. Leaves pedate, with 5 leaflets, or sometimes mixed with 3 leaflets, leaflets elliptic, elliptic-lanceolate, or ovate-elliptic, undivided, petiole usually 2–10 cm.
19a. Leaflets elliptic or elliptic-lanceolate, veinlets inconspicuous 10. *C. japonica*
19b. Leaflets ovate-lanceolate, veinlets conspicuously raised 11. *C. daliensis*

1. *Cayratia* subg. *Cayratia*

孔膜亚属 kong mo ya shu

Columella Loureiro (1790), not *Columellia* Ruiz & Pavón (1794), nom. cons.; *Lagenula* Loureiro.

Adaxial surface of seeds with a membrane.

About 15 species: Asia and Oceania; five species (three endemic) in China.

1. *Cayratia geniculata* (Blume) Gagnepain, Notul. Syst. (Paris) 1: 345. 1911.

膝曲乌莓 xi qu wu lian mei

Cissus geniculata Blume, Bijdr. 184. 1825; *Columella geniculata* (Blume) Merrill.

Lianas, woody. Branchlets terete, slightly flattened, pubescent; tendrils bifurcate. Leaves 3-foliolate; stipules caducous; petiole 9–18 cm, pubescent; leaflets abaxially densely pubescent or glabrescent, lateral veins 7–9 pairs, veinlets inconspicuous; central leaflet rhombic-elliptic, 10–18 × 5–9 cm, base cuneate, apex caudate or acuminate, rarely acute; lateral leaflets broadly ovate, 9–17 × 4–9 cm, base asymmetric, margin with sparse fine teeth, apex caudate or acuminate. Compound dichasium axillary; peduncle 3–14 cm, pubescent. Pedicel 1–3 mm, pubescent. Buds oval or globose, ca. 2 mm, apex rounded. Calyx cupular, with papillose hairs, margin undulately lobed. Petals oval, 1.5–2 mm, with papillose hairs. Anthers oval. Lower part of ovary adnate to disk; style short; stigma slightly expanded. Berry nearly globose, 8–10 mm in diam., 2–4-seeded. Seeds semiglobose, base rostrate, apex subrounded or retuse, chalazal knot narrower upward, raphe slightly raised, ventral holes 2–4 mm in diam., enveloped by a membrane, margin with ribs. Fl. Jan–May, fr. May–Nov.

Forests in valleys; 300–1000 m. Guangdong, Guangxi, Hainan, Xizang, Yunnan [Indonesia, Laos, Malaysia, Philippines, Vietnam].

2. *Cayratia cordifolia* C. Y. Wu ex C. L. Li, Chin. J. Appl. Environ. Biol. 2: 49. 1996.

心叶乌莓 xin ye wu lian mei

Lianas, woody. Branchlets terete, with longitudinal ridges, densely pubescent; tendrils bifurcate. Leaves 3-foliolate; stipules caducous; petiole 8.5–16 cm; central petiolule 6–7 cm, lateral petiolules 2–3.5 cm, densely pubescent; leaflets abaxially densely pubescent or glabrescent, adaxially nearly glabrous, lateral veins 9–12 pairs, veinlets inconspicuously raised; central leaflet obovate-elliptic; lateral leaflets broadly elliptic or rhombic-elliptic, 12–25 × 8–16 cm, base slightly cordate, margin entire or slightly serrate, apex acute or acuminate. Corymbose polychasium axillary; peduncle ca. 11 cm, with nodes at middle. Pedicel 1–2.5 mm, with dense gray hairs. Buds oval or globose, 2–2.5 mm, apex rounded. Calyx saucer-shaped, glabrous,

margin undulate. Petals oval, 1.8–2.3 mm, glabrous. Anthers oval. Stigma slightly expanded. Berry ca. 1.3 cm in diam. Seeds semiglobose, base rostrate, apex rounded, ventral holes elliptic, 5–6 × ca. 4 mm, enveloped by a membrane. Fl. Jun, fr. Oct–Jan of following year.

• Forests in valleys; 100–1100 m. Yunnan.

3. *Cayratia lanceolata* (C. L. Li) J. Wen & Z. D. Chen, Acta Bot. Yunnan. 28: 471. 2006.

狭叶乌莓 xia ye wu lian mei

Cayratia mollissima (Wallich) Gagnepain var. *lanceolata* C. L. Li, Chin. J. Appl. Environ. Biol. 2: 50. 1996.

Lianas, woody. Branchlets dark brown, terete, slender, with longitudinal ridges, glabrous; tendrils bifurcate. Leaves 3-foliolate; stipules caducous; petiole 2–3 cm; central petiolule 0.7–2 cm, lateral petiolules short, 3–9 mm, sparsely pilose; leaflets sparsely hispidulous with appressed fine hairs, abaxially sparsely villous on midvein, lateral veins 6–8 pairs, veinlets inconspicuous; central leaflet lanceolate, 6–14 × 1.5–3 cm, base cuneate, rarely subrounded, apex long acuminate; lateral leaflets ovate-lanceolate, 4.5–9.5 × 1.5–2.5 cm, base asymmetric and subrounded, margin with sparse sharp teeth, apex long acuminate. Corymbose polychasium axillary; peduncle 2–8 cm, with nodes and brownish bracts, pubescent. Pedicel 0.5–1 mm, densely pubescent. Buds elliptic, 1–1.5 mm, apex rounded. Calyx saucer-shaped, pubescent, teeth inconspicuous. Petals ovate-elliptic, 0.8–1.3 mm, glabrous. Anthers oval. Lower part of ovary adnate to disk; style slender. Berry 8–10 mm in diam., 2- or 3-seeded. Seeds globose to semiglobose, base rostrate, apex rounded, surface smooth, upper raphe raised, ventral holes rounded, ca. 2 mm in diam., ribs along margin slightly raised. Fl. Apr–May, fr. Jun–Jul.

• Shrublands, disturbed areas at forest margins, roadsides. Hainan.

4. *Cayratia pedata* (Lamarck) Jussieu ex Gagnepain, Notul. Syst. (Paris) 1: 346. 1911.

鸟足乌莓 niao zu wu lian mei

Cissus pedata Lamarck, Encycl. 1: 31. 1783; *Cayratia longzhouensis* W. T. Wang; *Columella pedata* Loureiro; *Lagenula pedata* Loureiro.

Lianas, woody. Branchlets terete, with longitudinal ridges,

sparsely pilose; tendrils bifurcate. Leaves pedately 5-foliolate; stipules brownish, ovate-lanceolate, 3–4 × 1.5–3 mm, membranous, sparsely pilose; petiole 5.5–16 cm; central petiolule 1.5–5 cm, lateral petiolules 2–4 cm, petiolules of lateral leaflet complex 1–3.5 cm, sparsely pilose; leaflets abaxially pilose, adaxially with appressed hairs, lateral veins 6–11 pairs, veinlets inconspicuously raised; central leaflet obovate-elliptic; lateral leaflets ovate-elliptic, 5–22 × 2.5–9 cm, base nearly truncate, rounded, or slightly cordate, margin with irregular teeth, apex caudate-acuminate. Corymbose polychasium axillary; peduncle 15–16 cm, with nodes, pilose. Pedicel 2–3 mm, densely pubescent. Buds oval, 2–2.5 mm, apex rounded. Calyx saucer-shaped, pubescent, entire. Petals ovate-elliptic, 1.7–2.2 mm, nearly glabrous. Anthers ovoid-elliptic, poorly developed in female flowers. Disk well developed, margin undulate. Lower part of ovary adnate to disk; style slender; stigma slightly expanded, or cylindrical in male flowers. Berry elliptic, 1.2–1.5 cm in diam., 2- or 3-seeded. Seeds semiglobose, base rounded, apex subrounded, rostrum inconspicuous, upper raphe narrow, surface smooth, ventral holes nearly rounded, 3–5 mm in diam. Fl. Jun, fr. Sep–Nov. $2n = 80$.

Forests, shrublands, rocky areas, roadsides; 800–2200 m. Guangxi, Yunnan [Cambodia, India, Indonesia, Malaysia, Thailand, Vietnam].

2. *Cayratia* subg. *Discypharia* (Suessenguth) C. L. Li, Chin. J. Appl. Environ. Biol. 2: 49. 1996.

突棱亚属 *tu leng ya shu*

Cayratia sect. *Discypharia* Suessenguth in Engler & Prantl, Nat. Pflanzenfam., ed. 2, 20d: 278. 1953; *Causonia* Rafinesque.

Adaxial surface of seeds without a membrane.

About 45 species: Africa, Asia, Oceania; 12 species (six endemic) in China.

6. *Cayratia trifolia* (Linnaeus) Domin, Biblioth. Bot. 89: 370. 1927.

三叶乌莓 *san ye wu lian mei*

Vitis trifolia Linnaeus, Sp. Pl. 1: 203. 1753; *Cissus carnososa* Lamarck; *V. carnososa* (Lamarck) Wallich ex M. A. Lawson.

Lianas, woody. Branchlets terete, with longitudinal ridges, sparsely pubescent; tendrils 3–5-branched. Leaves 3-foliolate; petiole 2.5–6 cm; central petiolule 0.5–2.5 cm, lateral petiolules 4–8 mm, pilose; leaflets oval, 3–6 × 1.5–4 cm, abaxially pilose, adaxially with appressed hairs, lateral veins 7 or 8 pairs, veinlets inconspicuously raised adaxially, base rounded, apex acute or obtuse; lateral leaflets with asymmetric and subrounded base, margin with 8–11 obtuse teeth on each side. Compound dichasium axillary; peduncle 2–7.5 cm, pilose. Pedicel 1–3 mm, pubescent. Buds oval, 1.3–1.8 mm, apex rounded. Calyx shallow and saucer-shaped, pilose, entire or undulate. Petals elliptic, 1.3–1.8 mm, with gray papillose hairs. Anthers oval. Lower part of ovary adnate to disk; style slender. Berry globose, 7–8 mm in diam., 2- or 3-seeded. Seeds triangular, apex rounded, ventral holes obovate-elliptic upward 1/3 from base, ribs obtuse along margin, slightly raised. Fl. and fr. Jun–Dec.

Forests on hillsides or by streams, on rocks; 500–1000 m. Yunnan

5. *Cayratia menglaensis* C. L. Li, Acta Bot. Yunnan. 19: 219. 1997.

勐腊乌莓 *meng la wu lian mei*

Lianas, woody. Branchlets terete, with longitudinal ridges, glabrous. Leaves pedately 7-foliolate; petiole ca. 10 cm; central petiolule ca. 4 cm, petiolules of lateral leaflet complex 1–2.5 cm, lateral petiolules 0.5–2 cm, sparsely pilose; leaflets only abaxially with sparse appressed hairs on veins, lateral veins 4–9 pairs, veinlets not raised abaxially, inconspicuous adaxially; central leaflet obovate-elliptic, ca. 12 × 5.5 cm, base rounded, margin 14- or 15-toothed on each side, apex mucronate; lateral leaflets elliptic, 5–11 × 3–5.5 cm, base subrounded or slightly cordate, margin 5–13-toothed, apex mucronate. Compound dichasium axillary, ca. 5 cm; peduncle 2–3 cm, sparsely pubescent, with nodes and bracts. Pedicel 1–2 mm, papillose. Buds elliptic, 1.5–2 mm, apex rounded. Calyx saucer-shaped, with sparse papillose hairs or glabrescent, nearly entire. Petals elliptic, 1–1.5 mm, apex rounded, glabrous. Anthers yellow, oval. Disk conspicuously 4-divided in male flowers. Ovary poorly developed in male flowers. Fl. Jul.

• Rocky areas on hillsides; ca. 800 m. Yunnan.

[Bangladesh, Cambodia, India, Indonesia, Laos, Malaysia, Nepal, Thailand, Vietnam].

7. *Cayratia timoriensis* (Candolle) C. L. Li, Chin. J. Appl. Environ. Biol. 2: 50. 1996.

南亚乌莓 *nan ya wu lian mei*

Lianas, woody. Branchlets terete, with longitudinal ridges, glabrous; tendrils trifurcate, sometimes tip of lower tendril branch with vestiges of abortive inflorescences. Leaves 3-foliolate; stipules caducous; petiole 3.5–12.5 cm; central petiolule 1.5–3 cm, lateral petiolules 3–5 mm, pilose; leaflets ovate-rhombic or rhombic, 7.5–14.5 × 5.5–8 cm, lateral veins 6–8 pairs, veinlets conspicuous, base broadly cuneate or subrounded; lateral leaflets with asymmetric base, margin with 12–17 rounded teeth on each side, apex acute. Compound dichasium axillary; peduncle 4–9 cm, nearly glabrous. Pedicel 1–2 mm, with dense papillose hairs. Buds oval, 2–3 mm, apex rounded. Calyx saucer-shaped, papillose, undulately lobed. Petals elliptic, 1.7–2.7 mm, densely papillose. Anthers oval, longer than broad. Lower part of ovary adnate to disk. Berry globose, 6–8 mm in diam., 2- or 3-seeded. Seeds triangular-obovoid, base rostrate, apex retuse, ventral holes suborbicular. Fl. Jun–Aug, fr. Aug–Sep.

Forests, valleys, fields; 1000–1200 m. Yunnan [Indonesia, Malaysia, Thailand].

- 1a. Leaflets abaxially glabrous on veins ... 7a. var. *timoriensis*
- 1b. Leaflets abaxially pilose on veins 7b. var. *mekongensis*

7a. Cayratia timoriensis var. **timoriensis**

南亚乌菟莓(原变种) nan ya wu lian mei (yuan bian zhong)

Cissus timoriensis Candolle, Prodr. 1: 630. 1824.

Leaflets abaxially glabrous on veins, adaxially glabrous or slightly pilose on veins. Fl. Jun–Jul, fr. Aug–Sep.

Valleys, fields; 1000–1200 m. Yunnan [Indonesia, Malaysia, Thailand].

7b. Cayratia timoriensis var. **mekongensis** (C. Y. Wu ex W. T. Wang) C. L. Li, Chin. J. Appl. Environ. Biol. 2: 50. 1996.

澜沧乌菟莓 lan cang wu lian mei

Cayratia mekongensis C. Y. Wu ex W. T. Wang, Acta Phytotax. Sin. 17(3): 79. 1979.

Leaflets abaxially pilose on veins. Fl. and fr. Jul–Aug.

- Forests in valleys; 1100–1200 m. Yunnan.

8. Cayratia medogensis C. L. Li, Chin. J. Appl. Environ. Biol. 2: 50. 1996 [“*medogensis*”].

墨脱乌菟莓 mo tuo wu lian mei

Lianas, semiwoody. Branchlets terete, with longitudinal ridges, glabrous. Leaves pedately 5-foliolate; stipules caducous; petiole 5–8 cm; central petiolule 1.8–2.2 cm, ca. 2 × as long as lateral petiolules, glabrous; leaflets ovate-elliptic, 3.5–8.5 × 2.5–4.5 cm, glabrous, lateral veins 6–8 pairs, veinlets inconspicuous, base broadly cuneate or subrounded, apex cuspidate; lateral leaflets with asymmetric, subrounded base, margin with irregular teeth, slightly bent outward or forward. Corymbose polychasium axillary; peduncle 1–8 cm, glabrous. Pedicel 1–1.5 mm, pubescent. Buds oval, ca. 1.5 mm, apex rounded. Calyx saucer-shaped, pubescent, nearly entire. Petals ovate-elliptic, ca. 1.2 mm, with dense gray-white hairs. Anthers oval. Lower part of ovary adnate to disk; style short, coniform with ovary at base; stigma not expanded. Fl. May.

- Forests; ca. 900 m. Xizang.

9. Cayratia maritima Jackes, Austrobaileya 2: 366. 1987.

海岸乌菟莓 hai an wu lian mei

Vines, herbaceous. Branchlets terete, with longitudinal ridges, with simple hairs at nodes when young; tendrils 2- or 3-furcate. Leaves 3-foliolate; stipules caducous, triangular; petioles 2–4 cm; leaflets abaxially glabrous when mature, or with hooked hairs on veins near junction of petiole and blade, lateral veins 5 or 6 pairs, veinlets inconspicuous; central leaflet ovate-rhomboid, 2–5 × 1.5–2.5 cm, base cuneate, apex acuminate; lateral leaflets oblique, margin crenulate-serrate. Cymose dichasium axillary. Calyx papillose. Petals spreading, papillose. Anthers oval. Lower part of ovary adnate to disk. Berry globose, ca. 1 cm in diam., 2–4-seeded.

Seasides. Taiwan [Australia].

10. Cayratia japonica (Thunberg) Gagnepain, Notul. Syst. (Paris) 1: 349. 1911.

乌菟莓 wu lian mei

Vines, herbaceous. Branchlets terete, with longitudinal ridges; tendrils 2- or 3-furcate. Leaves pedately 5-foliolate, or sometimes 3-foliolate; stipules caducous; petiole 1.5–10 cm; central petiolule 0.5–2.5 cm, lateral petiolules short or lateral leaflets sessile, petiolules of lateral leaflet complex 0.5–1.5 cm; leaflets with lateral veins 5–9 pairs, veinlets inconspicuous; central leaflet elliptic or elliptic-lanceolate, 2.5–14.5 × 1.5–4.5 cm, base cuneate, apex acute or acuminate; lateral leaflets elliptic or narrowly so, 1–7 × 0.5–3.5 cm, base cuneate or subrounded, margin 6–15-toothed on each side, apex acute or rounded. Compound dichasium axillary; peduncle 1–13 cm. Pedicel 1–2 mm. Buds oval, 1–2 mm, apex rounded. Calyx cupular, papillose or nearly glabrous, margin entire or undulate. Petals triangular-oval, 1–1.5 mm, papillose. Anthers oval. Lower part of ovary adnate to disk. Berry globose, ca. 1 cm in diam., 2–4-seeded. Seeds triangular-obovoid, base rostrate, apex retuse, surface with ribs, ventral holes semicircular, extending from base to near apex. Fl. Mar–Aug, fr. Jul–Jan. 2n = 40*.

Forests, shrublands, valleys, grassy areas, fields, disturbed areas, roadsides; 300–2500 m. Anhui, Chongqing, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hunan, Jiangsu, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, Nepal, Philippines, Thailand, Vietnam; Australia].

“*Cayratia japonica* var. *taiwaniana*” (Masamune, J. Geobot. 13: iii. 1964), described from Taiwan, may belong here but was not validly published because no type was indicated (*Vienna Code*, Art. 37.1).

- 1a. Branchlets, petioles, peduncles, and abaxial surface of leaflets or only veins densely pubescent with short brownish or gray-brownish hairs 10c. var. *mollis*
- 1b. Branchlets, petioles, and veins on abaxial surface of leaflets pilose.
 - 2a. Tendrils bifurcate; leaves pedately 5-foliolate, elliptic or elliptic-lanceolate 10a. var. *japonica*
 - 2b. Tendrils trifurcate; leaves mostly 3-foliolate, oblong or ovate ... 10b. var. *pseudotrifolia*

10a. Cayratia japonica var. **japonica**

乌菟莓(原变种) wu lian mei (yuan bian zhong)

Vitis japonica Thunberg in Murray, Syst. Veg., ed. 14, 244. 1784; *Causonia japonica* (Thunberg) Rafinesque; *Cayratia tenuifolia* (Wight & Arnott) Gagnepain; *C. trifolia* (Linnaeus) Domin var. *quinquefoliola* W. T. Wang; *Cissus japonica* (Thunberg) Willdenow; *C. leucocarpa* Blume; *C. tenuifolia* (Wight & Arnott) F. Heyne ex Planchon; *Columella japonica* (Thunberg) Merrill; *C. tenuifolia* (Wight & Arnott) Merrill; *V. leucocarpa* (Blume) Hayata; *V. tenuifolia* Wight & Arnott.

Branchlets glabrous or pilose; tendrils bifurcate. Leaves pedately 5-foliolate, elliptic or elliptic-lanceolate, veins brownish when dry, veinlets inconspicuous. Petioles, petiolules, peduncles, and pedicels glabrous or slightly pilose. Fl. Mar–Aug, fr. Aug–Nov.

Forests, shrublands, valleys, disturbed areas, roadsides; 300–2500

m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hunan, Jiangsu, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam; Australia].

10b. *Cayratia japonica* var. *pseudotrifolia* (W. T. Wang) C. L. Li, Chin. J. Appl. Environ. Biol. 2: 51. 1996.

尖叶乌莓 *jian ye wu lian mei*

Cayratia pseudotrifolia W. T. Wang, Acta Phytotax. Sin. 17(3): 79. 1979.

Tendrils trifurcate. Leaves mostly 3-foliolate, oblong or ovate, 4–8 × 2–4 cm. Fl. May–Aug, fr. Sep–Oct.

• Fields or forests in valleys; 300–1500 m. Chongqing, Gansu, Guangdong, Guizhou, Hebei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang.

10c. *Cayratia japonica* var. *mollis* (Wallich ex M. A. Lawson) Momiyama in H. Hara, Fl. E. Himalaya 1: 199. 1966.

毛乌莓 *mao wu lian mei*

Vitis mollis Wallich ex M. A. Lawson in J. D. Hooker, Fl. Brit. India 1: 660. 1875; *Cayratia japonica* var. *canescens* W. T. Wang; *C. japonica* var. *ferruginea* W. T. Wang; *C. japonica* var. *pubifolia* Merrill & Chun; *C. mollis* (Wallich ex M. A. Lawson) C. Y. Wu; *C. tenuifolia* var. *cinerea* Gagnepain; *Cissus japonica* var. *mollis* (Wallich ex M. A. Lawson) Planchon.

Branchlets, petioles, peduncles, abaxial surface of leaflets or only veins with dense brownish or gray-brownish soft hairs. Fl. May–Jul, fr. Jul–Jan.

Forests, shrublands; 300–2200 m. Guangdong, Guangxi, Guizhou, Hainan, Yunnan [Bhutan, India, Nepal].

11. *Cayratia daliensis* C. L. Li, Guihaia 17: 98. 1997.

大理乌莓 *da li wu lian mei*

Vines, herbaceous. Branchlets terete, with longitudinal ridges, glabrous; tendrils trifurcate. Leaves pedately 5-foliolate; stipules caducous; petiole 3–5.5 cm; central petiolule 0.5–2 cm, lateral petiolules absent or short, petiolules of lateral leaflet complex 2–5 mm, sparsely pubescent; leaflets ovate-lanceolate, pilose on veins, lateral veins 6–9 pairs, veinlets conspicuously raised; central leaflet 6.5–9 × 1.8–3.2 cm, base rounded or broadly cuneate, apex acuminate; lateral leaflets 3–6.5 × 1.6–3 cm, base rounded, margin undulate with 12–19 fine teeth on each side, apex acuminate. Compound dichasium axillary; peduncle 0.8–2 cm, glabrous or slightly hairy. Pedicel 2–4 mm, sparsely pubescent. Buds oval, 1–2.5 mm, apex rounded. Calyx saucer-shaped, papillose, entire. Petals oval, 0.8–1.5 mm, papillose. Anthers oval. Lower part of ovary adnate to disk; stigma expanded. Fl. Jun.

• Shrublands; ca. 2600 m. Yunnan.

12. *Cayratia albifolia* C. L. Li, Chin. J. Appl. Environ. Biol. 2: 51. 1996.

白毛乌莓 *bai mao wu lian mei*

Cayratia albifolia var. *glabra* (Gagnepain) C. L. Li; *C.*

oligocarpa (H. Léveillé & Vaniot) Gagnepain f. *glabra* Gagnepain; *C. oligocarpa* var. *glabra* (Gagnepain) Rehder; *Vitis mairei* H. Léveillé (1909, not 1912), p.p. as to *Maire* 414.

Climbers, semiwoody or herbaceous. Branchlets terete, with longitudinal ridges; tendrils trifurcate, sometimes apex of one branch with vestiges of abortive inflorescences. Leaves pedately 5-foliolate; stipules brownish, lanceolate or ovate-lanceolate, 3–4.5 × 1–2 mm, membranous, apex acuminate; petiole 5–12 cm; central petiolule 3–5 cm, petiolules of basal leaflets absent or short, petiolules of lateral leaflets complex, 0.8–1.5 cm; leaflets elliptic or ovate-elliptic, 5–17 × 2–9 cm, abaxially light glaucous, adaxially green, pubescent with short grayish hairs, more densely so on veins, to nearly glabrescent, with lateral veins 6–10 pairs, veinlets inconspicuous, base cuneate, or bases of lateral leaflets nearly rounded, margin 20–28-toothed on each side, teeth obtuse or sharp, apex acute or acuminate. Corymbose polychasium axillary; peduncle 2.5–5 cm. Pedicel 2–3 mm. Buds oval, 1.5–2 mm, apex rounded. Calyx shallow and saucer-shaped, with papillose hairs, teeth inconspicuous. Petals oval or ovate-elliptic, 1–1.5 mm, papillose. Anthers oval. Lower part of ovary adnate to disk. Berry globose, 1–1.2 cm in diam., 2–4-seeded. Seeds obovoid-elliptic, base rostrate, apex rounded or retuse, ventral holes obovate-elliptic. Fl. May–Jul, fr. Jul–Sep.

• Forests in valleys, shrublands, on rocks or cliffs of hillsides; 300–2000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.

13. *Cayratia oligocarpa* (H. Léveillé & Vaniot) Gagnepain, Notul. Syst. (Paris) 1: 348. 1911.

华中乌莓 *hua zhong wu lian mei*

Vitis oligocarpa H. Léveillé & Vaniot, Bull. Soc. Agric. Sarthe 40: 41. 1905; *Cissus oligocarpa* (H. Léveillé & Vaniot) Bailey; *Columella oligocarpa* (H. Léveillé & Vaniot) Rehder.

Vines, herbaceous. Branchlets terete, with longitudinal ridges, villous with brown segmented hairs 1–1.5 mm; tendrils bifurcate. Leaves pedately 5-foliolate; stipules brownish, lanceolate, 3–3.5 × ca. 1 mm, membranous, nearly glabrous; petiole 2.5–7 cm; central petiolule 1.5–3 cm, lateral petiolules short, petiolules of lateral leaflet complex 0.5–1.5 cm, with dense, long, soft brown segmented hairs; leaflets abaxially with dense segmented hairs, hairs appressed on midvein, adaxially pilose with appressed hairs or nearly glabrous, lateral veins 4–9 pairs, veinlets inconspicuous; central leaflet elliptic-lanceolate or elliptic, 4.5–10 × 2.5–5 cm, base cuneate, margin (5–)7–14(–17)-toothed on each side, apex caudate-acuminate; lateral leaflets ovate-elliptic or oval, 3.5–7 × 1.3–3.5 cm, base cuneate or nearly rounded, margin 5–10-toothed on each side, apex acute or acuminate. Compound dichasium axillary; peduncle 1–4.5 cm, with dense, long, brown, segmented hairs. Pedicel 1.5–2 mm, villous with segmented hairs. Buds oval, 1.5–2 mm, apex rounded. Calyx shallow and saucer-shaped, with brown segmented hairs, teeth inconspicuous. Petals oval, 1–1.5 mm, with segmented hairs. Anthers oval. Disk well developed, 4-lobed. Lower part of ovary adnate to disk; style fine; stigma slightly expanded. Berry globose, 8–10 mm in diam., 2–4-

seeded. Seeds obovoid-elliptic, base rostrate, apex rounded or retuse, ventral holes broadly obovate-elliptic, nearly to apex. Fl. May–Jul, fr. Aug–Sep.

• Forests in valleys or on hillsides; 400–2000 m. Chongqing, Guizhou, Hubei, Shaanxi, Sichuan, Yunnan.

14. *Cayratia fugongensis* C. L. Li, Guihaia 17: 97. 1997.

福贡乌藨莓 fu gong wu lian mei

Climbers, semiwoody or herbaceous. Branchlets terete, with longitudinal ridges, villous with brown segmented hairs; tendrils trifurcate. Leaves pedately 5-foliolate; stipules triangular-ovate, ca. 4 × 2 mm, herbaceous, sparsely pubescent, apex acuminate; petiole 4–9 cm; central petiolule 1–1.8 cm, petiolules of lateral leaflets absent or short, complex, 2–8 mm, villous with brown segmented hairs; leaflets elliptic or oblong, 3.5–11.5 × 2.5–6 cm, abaxially with sparse brown hairs, more densely so on veins, adaxially with sparse appressed hairs, then glabrescent, lateral veins 9–15 pairs, veinlets raised abaxially, inconspicuous adaxially, base cuneate, or nearly rounded on basal leaflets, margin 16–21-toothed on each side, teeth obtuse or acute, apex acute or mucronate. Corymbose polychasium axillary; peduncle 2.5–5.5 cm, villous with brown segmented hairs. Pedicel 1–2 mm, pilose. Buds oval, 1.5–2 mm, apex rounded. Calyx shallow and saucer-shaped, pilose, teeth inconspicuous. Petals oval or ovate-elliptic, 1–1.5 mm, pilose. Anthers oval. Lower part of ovary adnate to disk. Berry globose, ca. 1 cm in diam., 2–4-seeded. Seeds obovoid-triangular, base conspicuously rostrate, apex retuse, chalazal knot and raphe inconspicuous, ribs raised, ventral holes inconspicuous. Fl. May, fr. Aug.

• Forests on hillsides; 1300–1800 m. Yunnan.

15. *Cayratia ciliifera* (Merrill) Chun, Sunyatsenia 4: 235. 1940.

节毛乌藨莓 jie mao wu lian mei

Columella ciliifera Merrill, Lingnan Sci. J. 9: 39. 1930;
Cayratia cannabina Gagnepain.

Lianas, woody. Branchlets terete, with longitudinal ridges, villous with segmented hairs 2–3.5 mm; tendrils trifurcate. Leaves pedately 5-foliolate; stipules brownish, oval, 4–6 × 3–4 mm, membranous, nearly glabrescent, apex obtuse; petiole 1.5–4.5 cm; lateral petiolules sessile or central petiolule short, villous with segmented hairs; leaflets obovate-elliptic, 3.5–7 × 1.2–2.5 cm, abaxially villous with appressed segmented hairs, adaxially sparsely villous or glabrous, lateral veins 5–8 pairs, veinlets inconspicuous, base cuneate, apex acuminate or acute; lateral leaflets basally cuneate or nearly rounded, margin with rounded or notched teeth, apex acute or rounded. Compound dichasium axillary; peduncle ca. 3.5 cm, sparsely villous with segmented hairs. Pedicel 0.5–2 mm, villous with segmented hairs. Buds elliptic, 1.5–2 mm, apex rounded. Calyx cupular, sparsely pubescent, subtire. Petals oval, 1–1.5 mm, pilose, apex cuneate. Lower part of ovary adnate to disk; stigma not expanded. Berry globose, 6–8 mm in diam., 2–4-seeded. Seeds obovoid, base rostrate, apex rounded, raphe groovelike, surface netlike with ribs raised, ventral holes inconspicuous.

Forests in valleys; 300–400 m. Hainan [Vietnam].

16. *Cayratia corniculata* (Benth) Gagnepain, Notul. Syst. (Paris) 1: 347. 1911.

角花乌藨莓 jiao hua wu lian mei

Vitis corniculata Benth, Fl. Hongk. 54: 1861; *Columella corniculata* (Benth) Merrill.

Vines, herbaceous. Branchlets terete, with longitudinal ridges, glabrous; tendrils bifurcate. Leaves pedately 5-foliolate; stipules caducous; petiole 2–4.5 cm; petiolules short or leaflets nearly sessile, petiolules of lateral leaflet complex 0.4–1.5 cm, glabrous; leaflets glabrous, lateral veins 5–7 pairs, veinlets inconspicuous; central leaflet elliptic-lanceolate, 3.5–9 × 1.5–3 cm, base cuneate, margin with 5 or 6 teeth on each side, apex acuminate; lateral leaflets ovate-elliptic, 2–5 × 1.5–2.5 cm, base cuneate or rounded, apex acute or obtuse. Compound dichasium axillary; peduncle 3–3.5 cm, glabrous. Pedicel 1.5–2.5 mm, glabrous. Buds oval or ovoid-elliptic, 2–3 mm. Calyx cupular, glabrous, entire or triangular lobed. Petals triangular-oval, 1.5–2.5 mm, with sparse papillose hairs, cuneate at apex. Anthers oval, nearly as long as wide. Lower part of ovary adnate to disk; style short, slightly enlarged at base. Berry globose, 8–10 mm in diam., 2–4-seeded. Seeds obovoid-elliptic, base rostrate, apex retuse, raphe raised, ventral holes groovelike or obovate-elliptic in shape upward nearly 1/3. Fl. Apr–May, fr. Jul–Sep.

Forests in valleys, shrublands on hillsides; 200–600 m. Fujian, Guangdong, Hainan, Taiwan [Malaysia, Philippines, Vietnam].

17. *Cayratia cardiospermoides* (Planchon ex Franchet) Gagnepain, Notul. Syst. (Paris) 1: 348. 1911.

短柄乌藨莓 duan bing wu lian mei

Ampelopsis cardiospermoides Planchon ex Franchet, Bull. Soc. Bot. France 33: 460. 1886.

Vines, herbaceous. Branchlets terete, with longitudinal ridges, sparsely pubescent when young, then glabrescent; tendrils unbranched. Leaves pedately 3–9-foliolate; stipules brownish, oval, 1.5–2 × 1–1.5 mm, membranous, glabrous, apex acute; petiole short, 0.3–1.5 cm; central petiolule 0.5–2 cm, petiolules of lateral leaflet complex 3–6 mm, lateral leaflets nearly sessile, sparsely pubescent when young, then glabrescent; leaflets undivided or deeply 3-parted, abaxially pubescent on veins, then glabrescent, lateral veins 4–7 pairs, veinlets inconspicuous; lobes or leaflets lanceolate, obovate-elliptic, or elliptic; central leaflet 3–8 × 0.5–4 cm, base cuneate, apex acuminate, acute, or obtuse; lateral leaflets 1–5 × 0.5–3 cm, base broadly cuneate, margin with 4–9 rounded teeth on each side, apex obtuse or rounded. Compound dichasium axillary; peduncle 1–3 cm, with sparse papillose hairs. Buds suborbicular, 1.5–2 mm, apex rounded. Calyx shallow and saucer-shaped, papillose, margin undulate or slightly dentate. Petals oval, 1.3–1.8 mm, with papillose hairs. Anthers oval, nearly as long as wide. Lower part of ovary adnate to disk. Berry globose, 8–10 mm in diam., 2- or 3-seeded. Seeds obovoid, base rostrate, apex rounded or retuse, chalazal knot elliptic at middle on back, upper raphe raised, transverse and obtuse ribs raised, ventral mid-raphe raised, ventral holes groovelike, from base upward to 1/4. Fl. Jul, fr. Aug–Sep.

• Shrublands, grassy areas of hillsides, meadows; 1600–2100 m. Sichuan, Yunnan.

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