

23. COPTIS Salisbury, Trans. Linn. Soc. London 8: 305. 1807.

黄连属 huang lian shu

Fu Dezhi (傅德志); Orbélia R. Robinson

Herbs perennial, rhizomatous or sometimes stoloniferous. Rhizomes branched. Leaves several, basal, long petiolate, 3- or 5-sect. Scapes 1 to several, erect. Inflorescences terminal, monochasial, 1- to few flowered. Flowers small, actinomorphic, bisexual. Sepals 5(–8), white or greenish yellow, often petaloid. Petals 5–10 or more, clawed, adaxially often nectariferous. Stamens numerous, glabrous; filaments filiform; anthers broadly elliptic. Pistils 8–14, stipitate; ovules several per ovary. Styles recurved. Follicles stipitate, oblong, transverse veins inconspicuous; persistent styles short. Seeds brown, ellipsoid, shiny, nearly smooth.

Fifteen species: E Asia, North America; six species (five endemic) in China.

1a. Leaves 5-sect.

2a. Rhizome robust; leaf blade 5.5–14 cm wide, central segment pinnately divided, apex attenuate 5. *C. quinquesecta*

2b. Rhizome slender; leaf blade 2–6 cm wide, central segment 3-lobed, apex acute 6. *C. quinquefolia*

1b. Leaves 3-sect.

3a. Leaf blade lanceolate to narrowly ovate; lateral segments 3–3.5 × shorter than central segment; sepals linear-lanceolate 4. *C. omeiensis*

3b. Leaf blade ovate to ovate-triangular; lateral segments slightly shorter than central segment; sepals lanceolate, elliptic, or narrowly ovate.

4a. Petals spatulate 3. *C. teeta*

4b. Petals lanceolate to linear-lanceolate.

5a. Leaf segment lobes remote; outer stamens slightly shorter than petals 1. *C. chinensis*

5b. Leaf segment lobes ± contiguous to each other; stamens ca. 1/2 as long as petals 2. *C. deltoidea*

1. *Coptis chinensis* Franchet, J. Bot. (Morot) 11: 231. 1897.

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Petiole 5–12 cm, glabrous; leaf blade ovate-triangular, 4–10 × 4–10 cm, 3-sect, papery to subleathery, abaxially glabrous, adaxially sparsely puberulous on veins, base cordate; lateral segments slightly shorter than central one, obliquely ovate, unequally 2-parted; central segment petiolulate, ovate-rhombic, 3–8 cm, deeply 3–5 lobed, ultimate lobes margin acute serrate, apex acute. Scapes 1 or 2, 12–25 cm tall, glabrous. Inflorescences 3–8-flowered; bracts lanceolate, palmately divided. Sepals 5, greenish yellow, lanceolate, 6.5–12.5 × 2–3 mm, glabrous. Petals linear-lanceolate, 5–6.5 mm, glabrous, apex attenuate. Stamens 3–6 mm, outer ones slightly shorter than petals. Pistils 8–12. Follicles 6–8 mm, stipe as long as follicle. Seeds ca. 2 mm. Fl. Feb–Mar, fr. Apr–Jun. 2n = 18*.

• Forests, shaded places in valleys; 500–2000 m. S Anhui, Fujian, N Guangdong, N Guangxi, Guizhou, Hubei, Hunan, S Shaanxi, Sichuan, Zhejiang.

This species is used medicinally.

1a. Sepals 9–13 mm, ca. 2 × as long as petals 1a. var. *chinensis*

1b. Sepals ca. 6.5 mm, slightly longer than petals 1b. var. *brevisepala*

1a. *Coptis chinensis* var. *chinensis*

黄连(原变种) huang lian (yuan bian zhong)

Coptis teeta var. *chinensis* (Franchet) Finet & Gagnepain.

Sepals 0.9–1.3 cm, ca. 2 × as long as petals.

• Forests, shaded places in valleys; 500–2000 m. Guizhou, Hubei, Hunan, S Shaanxi, Sichuan.

1b. *Coptis chinensis* var. *brevisepala* W. T. Wang & P. K. Hsiao, Acta Pharm. Sin. 12: 195. 1965.

短萼黄连 duan e huang lian

Sepals ca. 6.5 mm, slightly longer than petals.

• Forests, shaded places in valley; 600–1600 m. S Anhui, Fujian, N Guangdong, N Guangxi, Zhejiang.

2. *Coptis deltoidea* C. Y. Cheng & P. K. Hsiao, Acta Pharm. Sin. 12: 195. 1965.

三角叶黄连 san jiao ye huang lian

Petiole 6–18 cm, glabrous; leaf blade ovate, 4–16 × 5–15 cm, 3-sect, papery to subleathery, abaxially glabrous, adaxially sparsely puberulous to nearly glabrous on veins, base cordate; lateral segments slightly shorter than central one, obliquely ovate, unequally 2-parted; central segment petiolulate, deltoid-ovate, 3–12 cm, pinnately divided; segments 4–6 pairs, ± contiguous to each other, margin acute serrate, apex acute. Scapes 1 or 2, slightly longer than leaves, glabrous.

Inflorescences 4–8-flowered; bracts linear-lanceolate, 3-parted or pinnately divided. Sepals 5, greenish yellow, narrowly ovate, 8–12.5 × 2–2.5 mm, glabrous. Petals lanceolate, 3–6 mm, glabrous, apex ± attenuate.

Stamens ca. 1/2 as long as petals. Pistils 9–12. Follicles 6–7 mm, stipe 7–8 mm. Fl. Mar–Apr, fr. Apr–Jun.

• Forests; 1600–2000 m. W Sichuan (Emei Xian, Hongya Xian).

3. *Coptis teeta* Wallich, Trans. Med. Soc. Calcutta 8: 347. 1842.

云南黄连 *yun nan huang lian*

Coptis teetoides C. Y. Cheng.

Petiole 8–19 cm, glabrous; leaf blade ovate-triangular, 6–12 × 5–9 cm, 3-sect, papery, abaxially glabrous, adaxially sparsely puberulous on veins, base cordate; lateral segments subsessile to petiolulate, shorter than central one, obliquely ovate, unequally parted; central segment petiolulate, ovate-rhombic, pinnately divided; segments 3–6 pairs, remote, margin acute serrate, apex attenuate. Scapes 15–25 cm tall, glabrous. Inflorescences 3–5-flowered; bracts elliptic, 3-parted or pinnately divided. Sepals 5, greenish yellow, elliptic, 7.5–8 × 2.5–3 mm., glabrous. Petals spatulate, 5.4–5.9 mm, glabrous, apex rounded to obtuse. Stamens 3–3.3 mm. Pistils 11–14. Follicles 7–9 mm, glabrous. $2n = 18^*$.

• Evergreen broad-leaved forests; 1500–2300 m. NW Yunnan (Gongshan Drung-Nu Zu Zizhixian), SE Xizang.

This species is used medicinally.

4. *Coptis omeiensis* (Chen) C. Y. Cheng, Acta Pharm. Sin. 12: 196. 1965.

峨眉黄连 *e mei huang lian*

Coptis chinensis Franchet var. *omeiensis* Chen, Bull. Fan Mem. Inst. Biol., n.s., 1: 93. 1943.

Petiole 5–14 cm, glabrous; leaf blade lanceolate to narrowly ovate, 6–16 × 3.5–6.3 cm, 3-sect, subleathery, abaxially glabrous, adaxially sparsely puberulous on veins, base cordate; lateral segments 3–3.5 × shorter than central one, obliquely ovate, unequally 2-parted to 2-foliolate; central segment petiolulate, rhombic-lanceolate, 5.5–15 cm, pinnately divided; segments 7–14 pairs, remote, margin acute serrate, apex attenuate. Scapes usually 1, 15–27 cm tall, glabrous. Inflorescences ca. 4-flowered; bracts lanceolate, margin finely serrate. Sepals 5, greenish yellow, linear-lanceolate, 7.5–10 × 0.7–1.2 mm, glabrous. Petals linear-lanceolate, ca. 2 × as long as sepals, glabrous, apex attenuate. Stamens ca. 5 mm. Pistils 9–14. Follicles 5–6 mm, stipe nearly as long as follicle. Seeds ca. 1.8 mm. Fl. Feb–Mar, fr. Apr–Jul.

• Cliffs, fissures of rocks; 1000–1700 m. Henan, W Sichuan (Emei Xian and adjacent regions).

5. *Coptis quinquesecta* W. T. Wang, Acta Phytotax. Sin. 6: 219. 1957.

五裂黄连 *wu lie huang lian*

Petiole 13–25 cm, glabrous; leaf blade ovate, 7–15.5 × 5.5–14 cm, 5-sect, subleathery, abaxially glabrous, adaxially sparsely puberulous on veins, base cordate; lateral segments similar to central one but smaller, unequally 2-lobed or parted; central segment petiolulate, rhombic-lanceolate, 5.5–14 cm, pinnately divided; segments 4 pairs, margin acute serrate, apex attenuate. Scapes 23–28 cm tall, glabrous. Inflorescences ca. 6-flowered; bracts oblong to lanceolate, 3-lobed or acutely serrate. Flowers unknown. Follicles 3–6 mm, stipe nearly as long as follicle. Fr. May.

• Dense forests; 1700–2500 m. SE Yunnan (Jinping Xian).

6. *Coptis quinquefolia* Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 7. 1867.

五叶黄连 *wu ye huang lian*

Petiole 2–13 cm, glabrous; leaf blade 5-sided, 2–5 × 2–6 cm, 5-sect, subleathery, abaxially glabrous, adaxially sparsely puberulous on veins, base cordate; lateral segments similar to central one or obliquely ovate, unequally 2-lobed; central segment sessile or subsessile, cuneate-rhombic, 1.8–3.5 cm, 3-lobed, margin acute serrate, apex acute. Scapes 1–3, 5–28 cm tall, glabrous. Inflorescences ca. 4-flowered; bracts lanceolate, margin acute serrate. Sepals 5, elliptic to obovate-elliptic, 4.5–8 × 2.8–5 mm, glabrous. Petals spatulate, 1.6–3 mm, glabrous. Stamens ca. 4 mm. Pistils 10–12. Follicles 4–5 mm, stipe nearly as long as follicle. Seeds ca 1.5 mm. Fl. Mar–Apr, Fr. Apr–May.

Forests. Taiwan [Japan].

