

37. HALERPESTES E. L. Greene, Pittonia 4: 207. 1900.

碱毛茛属 jian mao gen shu

Wang Wencai (王文采 Wang Wen-tsai); Michio Tamura

Herbs perennial, small, usually with slender creeping stolons. Leaves all basal or at nodes of stolons, leaf blade simple, undivided, dentate or 3-lobed to 3-sect. Scapes naked or with a linear bract. Inflorescence a solitary terminal flower or a 2- or 3-flowered monochasium. Flowers bisexual, actinomorphic. Sepals 5, deciduous. Petals 5–12, yellow, narrowly obovate, shortly clawed at base, with a nectary pit above base. Stamens numerous or few; anthers ellipsoid. Carpels numerous, spirally arranged on a conical receptacle; ovules 1 per carpel. Aggregate fruit globose or ovoid; achenes bilaterally compressed, with 2 or 3 longitudinal thin ribs on each side; style persistent, straight or curved.

About ten species: temperate Asia, North & South America; five species (one endemic) in China.

Halerpestes is sometimes placed within *Ranunculus*.

1a. Gynoecium and aggregate fruit ovoid.

2a. Scape 3–16 cm; leaf blade 0.5–2 cm; petals 5; stamens (6–)14–20 4. *H. sarmentosa*

2b. Scape 6–24 cm; leaf blade 1.2–4.8 cm; petals 6–12; stamens 50–78 5. *H. ruthenica*

1b. Gynoecium and aggregate fruit globose.

3a. Stolons absent; basal leaves ovate, 3-sect, lateral segments unequally 2-sect, ultimate segments linear 3. *H. filisecta*

3b. Stolons present; basal leaves 3-lobed to 3-sect, or undivided, if 3-sect then lateral segments usually undivided or sometimes with a short lobule.

4a. Basal leaves all or some rhombic, broadly cuneate, or pentagonal, 3-lobed, to 3-sect 1. *H. tricuspis*

4b. Basal leaves oblanceolate, oblong, or linear, undivided, margin 3-dentate near apex or entire 2. *H. lancifolia*

1. *Halerpestes tricuspis* (Maximowicz) Handel-Mazzetti, Acta Horti Gothob. 13: 135. 1939.

三裂碱毛茛 san lie jian mao gen

Stolons (2–)7–35 cm. Basal leaves 5–16; petiole (0.6–)1–6.5 cm, narrowly vaginate at base; leaf blade variable in shape and in division, rhombic, broadly cuneate, pentagonal, or elliptic, rarely linear, (0.3–)0.5–2.6 × (1–)0.5–2.2 cm, glabrous, base cuneate, broadly cuneate, truncate, or attenuate, 3-sect, 3-partite, 3-fid, 3-lobed, or rarely undivided. Scapes (0.3–)1–13 cm, usually glabrous, sometimes sparsely puberulent. Flowers usually solitary or 2 in a monochasium, (6–)7–12 mm in diam.; bracts linear, 3–5 mm, vaginate at base. Pedicel 0.3–1.9 cm. Sepals 4 or 5, narrowly ovate or elliptic, 3–5 mm, abaxially glabrous or puberulent. Petals 5(or 6), narrowly obovate or oblong, (3.5–)5–6.5 × (1.1–)2–3 mm. Stamens 13–36; anthers broadly elliptic, rarely oblong, 0.5–0.8 mm. Aggregate fruit globose, 3–5.5 mm in diam.; achenes obliquely narrowly obovate, 1–2.4 × 0.6–1.4 mm, glabrous. Persistent style 0.3–0.5 mm.

Meadows, swamps, slopes, damp places, by rivers; 1700–5100 m. SW Gansu, Ningxia, Qinghai, W Sichuan, S Xinjiang, Xizang [Bhutan, N India, Mongolia, Nepal, N Pakistan].

1a. Basal leaves 3-lobed, sometimes 3-cleft, pentagonal-obovate, base truncate, truncate-rounded, or broadly cuneate 1d. var. *intermedia*

1b. Basal leaves all or some 3-cleft, 3-partite, or 3-sect.

2a. Basal leaves pentagonal or obovate-pentagonal, base truncate or broadly cuneate, 3-partite, 3-sect, or 3-cleft 1c. var. *variifolia*

2b. Basal leaves all or some rhombic or broadly cuneate, base cuneate, 3-cleft to 3-sect.

3a. Scapes 1–13 cm, above puberulent or glabrous; stolons 7–35 cm; basal leaves all 3-cleft to 3-sect 1a. var. *tricuspis*

3b. Scapes 0.3–1 cm, glabrous; stolons 2–7 cm; some basal leaves rhombic or broadly cuneate, 3-cleft to 3-sect, and others undivided, linear, entire 1b. var. *heterophylla*

1a. *Halerpestes tricuspis* var. *tricuspis*

三裂碱毛茛(原变种) san lie jian mao gen (yuan bian zhong)

Ranunculus tricuspis Maximowicz, Fl. Tangut. 12. 1889; *Halerpestes haiyanica* D. Z. Ma; *H. tricuspis* var. *linearisecta* L. H. Zhou.

Stolons 7–35 cm. Basal leaves 5–16; petiole 0.6–5.5 cm, glabrous, rarely sparsely puberulent; leaf blade rhombic or broadly cuneate, 0.5–2.6 × 0.5–2.2 cm, glabrous, base cuneate or broadly cuneate, 3-cleft to 3-sect; central segment cuneate, 3-cleft or linear, undivided;

lateral segments lanceolate-linear, usually undivided. Scapes 1–13 cm, above puberulent or glabrous. Flowers 1, or 2, 7–11 mm in diam. Pedicel 2.5–10 mm. Receptacle puberulent or glabrous. Sepals abaxially puberulent or glabrous. Petals 5–6 × 2–3 mm. Stamens 13–25. Fl. May–Aug.

By rivers or lakes, swamps, alpine meadows; 1700–4800 m. SW Gansu, S Ningxia, Qinghai, SE Xinjiang, NE and S Xizang [Nepal].

1b. *Halerpestes tricuspis* var. *heterophylla* W. T. Wang, *Guihaia* 15: 100. 1995.

异叶三裂碱毛茛 *yi ye san lie jian mao gen*

Stolons 2–7 cm. Basal leaves ca. 5; petiole 0.7–1.4 cm, glabrous; leaf blade rhombic, 3–11 × 1–17 mm, glabrous, base cuneate, 3-cleft to 3-sect and with linear entire segments, or leaves linear, undivided and attenuate at base. Scapes 3–10 mm, glabrous or sparsely puberulent. Flowers 1, 6–7 mm in diam. Receptacle puberulent or glabrous. Sepals glabrous. Petals 3.5–4 × 1.1 mm. Stamens 14–20. Fl. Jun–Jul.

• Meadows, swamps, by rivers; 4700–5100 m. S Xinjiang, C and N Xizang.

1c. *Halerpestes tricuspis* var. *variifolia* (Tamura) W. T. Wang, *Guihaia* 15: 100. 1995.

变叶三裂碱毛茛 *bian ye san lie jian mao gen*

Halerpestes lancifolia (Bertoloni) Handel-Mazzetti var. *variifolia* Tamura, *J. Geobot.* 26: 69. 1978; *H. variifolia* (Tamura) Tamura.

Stolons 4–17 cm. Basal leaves 5–11; petiole 1–6 cm, glabrous; leaf blade pentagonal or obovate-pentagonal, 4–15 × 4–12 mm, glabrous, base truncate, or blade obovate-oblong, 3-lobed, 1- or 2-dentate, or entire; lateral segments usually unequally 2-lobed. Scapes 1–5.5 mm, glabrous. Flowers 1, 1–12 mm in diam. Receptacle glabrous, rarely puberulent. Sepals glabrous. Petals 5–7 × 2–2.8 mm. Stamens 13–36. Fl. May–Jul.

Rivers or streams, swamps, damp places, meadows; 2000–5000 m. SW Gansu, Ningxia, SW Sichuan (Daocheng Xian), S Xizang [Nepal].

1d. *Halerpestes tricuspis* var. *intermedia* W. T. Wang, *Guihaia* 15: 101. 1995.

浅三裂碱毛茛 *qian san lie jian mao gen*

Stolons 8–22 cm. Basal leaves 5–15; petiole 1.5–6.5 cm, glabrous; leaf blade pentagonal-obovate or pentagonal, rarely elliptic, 4–10(–20) × 3–10(–12) mm, glabrous, base truncate, truncate-rounded, or truncate-cordate, 3-lobed or obtusely 3(–5)-dentate at top, sometimes 3-cleft. Scapes 2.5–4.5 cm, glabrous. Flowers 1, 7–12 mm in diam. Receptacle glabrous or puberulent. Sepals glabrous. Petals 3–5 × ca. 1.8 mm. Stamens 15–18. Fl. Jun–Jul, fr. Jun–Aug.

• By rivers or lakes, swamps, slopes; 2400–4600 m. SW Gansu (Xiahe Xian), NE and SC Qinghai, NW Sichuan, E and SC Xizang.

2. *Halerpestes lancifolia* (Bertoloni) Handel-Mazzetti, *Acta Horti Gothob.* 13: 136. 1939.

狭叶碱毛茛 *xia ye jian mao gen*

Ranunculus lancifolius Bertoloni, *Mem. Reale Accad. Sci. Ist. Bologna*, ser. 2, 3: 423. 1862; *R. palifolius* Dunn; *R. tricuspis* Maximowicz var. *lancifolius* (Bertoloni) H. Hara.

Stolons 3–10 cm. Basal leaves ca. 7, glabrous; petiole 1.8–2.2 cm, narrowly vaginate at base; leaf blade linear, lanceolate, or narrowly ovate, 3–12 × 1–2 mm, base cuneate or broadly cuneate, margin 2- or 3-dentate near apex or entire. Scapes 1.2–2.5 cm, glabrous or sparsely puberulent near apex, leafless with a linear bract below flower. Flowers 1, 8–9 mm in diam. Receptacle puberulent. Sepals 5, ovate, 4–5 mm, glabrous. Petals 5, oblong, 4–5 × 1.2–1.8 mm. Anthers broadly elliptic, 0.5–0.7 mm. Aggregate fruit globose, ca. 5 mm in diam.; achenes obliquely ovate, 1.8–2 × 1.1–1.5 mm, glabrous. Persistent style 0.6–0.8 mm, recurved at apex. Fl. Jun–Jul, fr. Jul–Aug.

By lakes or rivers, damp alpine meadows; 3700–5100 m. W Xizang [Kashmir, Nepal].

3. *Halerpestes filisecta* L. Liou in W. T. Wang, *Fl. Reipubl. Popularis Sin.* 28: 338. 1980.

丝裂碱毛茛 *si lie jian mao gen*

Stolons absent. Basal leaves 5–10, glabrous; petiole 0.7–1.4 cm, vaginate at base; leaf blade ovate, 2–9 × 3–10 mm, base broadly cuneate or subtruncate, 3-sect; central segment narrowly linear, entire, rarely 1- or 2-lobulate; lateral segments usually unequally 2-sect, with linear ultimate lobules, rarely undivided. Scapes 6–11 mm, glabrous, naked. Flowers 1, ca. 8 mm in diam. Receptacle glabrous. Sepals 5, broadly oblong, ca. 3 mm, glabrous. Petals 5, oblong or narrowly elliptic, 3.8–4.2 × ca. 1.2 mm, apex rounded-obtuse. Stamens ca. 10; anthers broadly ellipsoid, ca. 0.6 mm. Aggregate fruit globose, 3.5–4 mm in diam.; achenes elliptic or narrowly obovate, 1.2–2 × 0.8–1 mm, glabrous. Persistent style 0.6–0.8 mm, uncinatate at apex or nearly straight. Fl. and fr. Aug.

• Grassy places by saline lakes; ca. 4800 m. W Xizang (Gè'gyai).

4. *Halerpestes sarmentosa* (Adams) Komarov & Alissova, *Key Pl. Far East. URSS* 1: 550. 1931.

碱毛茛 *jian mao gen*

Stolons 10–20 cm. Basal leaves 8–25; petiole 1–10 cm, glabrous or sparsely puberulent; leaf blade obovate, reniform, or orbicular-ovate, sometimes pentagonal, 0.5–2 × 0.4–2.6 cm, glabrous, base broadly cuneate, truncate, or subcordate, margin with 3–9 teeth at top, or 3-lobed; central lobe entire; lateral lobes 1- or 2-dentate or entire, sometimes 3-cleft to middle part or 3-partite. Scapes 3–16 cm, glabrous or sparsely puberulent. Flowers 1, sometimes 2–4 in a monochasium, terminal,

6–10 (–14) mm in diam.; bracts linear, 3–5 mm, glabrous, vaginate at base. Sepals 5, elliptic, 2–4.5 mm, glabrous. Petals 5, oblong, 2.8–6.5 × 1–2.5 mm, apex rounded. Stamens (6–)14–20; anthers ellipsoid, 0.6–0.8 mm. Aggregate fruit ovoid, 3.5–6 × 2.2–3.2 mm; achenes obliquely narrowly obovate, 1–1.8 × 0.6–0.8 mm, glabrous. Persistent style ca. 0.3 mm, straight.

Saline damp sandy places by rivers or lakes, meadows, slopes; near sea level–2000 m. Gansu, N and W Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, S Ningxia, Qinghai, N Shaanxi, Shanxi, NW Sichuan, Xinjiang, Xizang [Kazakhstan, N Korea, Mongolia, N Pakistan, Russia (Siberia), Sikkim].

1a. Leaf blade oblate, reniform, or orbicular-ovate, undivided or 3-lobed 4a. var. *sarmentosa*

1b. Leaf blade pentagonal, 3-cleft to middle or 3-partite 4b. var. *multisecta*

4a. *Halerpestes sarmentosa* var. *sarmentosa*

碱毛茛(原变种) jian mao gen (yuan bian zhong)

Ranunculus sarmentosus Adams, Nouv. Mém. Soc. Imp. Naturalistes Moscou 3: 244. 1834; *Halerpestes salsuginosa* E. L. Greene; *R. cymbalaria* Pursh subsp. *sarmentosus* (Adams) Kitagawa; *R. salsuginosus* Pallas (1776), not Georgi (1775).

Leaf blade oblate, reniform, or orbicular-ovate, base broadly cuneate, truncate or subcordate, margin undivided, 3–9-dentate distally, or 3-lobed, central lobe entire, lateral lobes 1- or 2-dentate or entire. Fl. May–Aug, fr. Jun–Aug.

Saline damp sandy places by rivers or lakes, meadows, slopes; near sea level–2000 m. Gansu, N and W Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, N Shaanxi, Shanxi, NW Sichuan, Xinjiang, Xizang [Kazakhstan, Korea, Mongolia, N Pakistan, Russia (Siberia), Sikkim].

4b. *Halerpestes sarmentosa* var. *multisecta* (S. H. Li & Y. H. Huang) W. T. Wang, Guihaia 15: 102. 1995.

裂叶碱毛茛 lie ye jian mao gen

Ranunculus cymbalaria f. *multisectus* S. H. Li & Y. H. Huang, Fl. Pl. Herb. Chin. Bor.-Orient. 3: 230. 1975.

Leaf blade pentagonal, base truncate or cordate-truncate, 3-cleft to middle or 3-partite, central lobe 1- or 2-denticulate or entire, lateral lobes unequally 2-lobed. Fl. Jun.

• Damp places by lakes. W Liaoning (Beizhen Xian).

5. *Halerpestes ruthenica* (Jacquin) Ovczinnikov, Fl. URSS. 7: 331. 1937.

长叶碱毛茛 chang ye jian mao gen

Ranunculus ruthenicus Jacquin, Hort. Bot. Vindob. 3: 19. 1776; *Oxygraphis plantaginifolia* (Murray) Prantl; *R. plantaginifolius* Murray; *R. ruthenicus* f. *multidentatus* S. H. Li & Y. H. Huang.

Stolons 15–65 cm, subglabrous. Basal leaves 8–15, glabrous; petiole 2.2–17 cm, vaginate at base; leaf blade ovate-trapeziform or broadly oblong, 1.2–4.8 × 0.7–2.2 cm, base subtruncate, cordate-truncate, or broadly obtuse, 3–6-dentate. Scapes 1–4, 6–24 cm, sparsely puberulent or glabrescent. Flowers 1, sometimes 2 in monochasium, 1.4–2.4 cm in diam.; bracts lanceolate-linear, 4–13 mm, membranous vaginate at base. Pedicel 2–7.5 cm, sparsely puberulent. Sepals 5, elliptic, 5–7 mm, abaxially puberulent. Petals 6–12, narrowly obovate or obovate-oblongate, 0.8–1.2 cm × 3–5 mm, apex rounded. Stamens 50–78; anthers broadly ellipsoid, 0.8–1 mm. Aggregate fruit ovoid, 8–11 × 5–9 mm; achenes obliquely obovate, 2–2.5 × 1.8–2 mm, glabrous. Persistent style 0.5–0.8 mm, straight. Fl. May–Aug, fr. Aug.

Damp grassy places, by streams or lakes; near sea level–1400 m. N Gansu, N Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Ningxia, N Shaanxi, N Shanxi, Xinjiang [Kazakhstan, Mongolia, Russia (Siberia)].

