
POLEMONIACEAE

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Herbs annual or perennial, rarely shrubs or vines. Leaves alternate or opposite, sessile to petiolate, simple, pinnatifid to palmately lobed, or compound. Inflorescences determinate, corymbose, paniculate, or capitulate, or flowers solitary. Flowers (4- or) 5-merous. Calyx gamosepalous, cylindrical to campanulate; tube herbaceous throughout and papery in fruit or with herbaceous midveins separated by translucent membranes distended or ruptured in fruit; lobes often scarious margined. Corolla gamosepalous, actinomorphic or zygomorphic, rotate to funnelform or salverform; lobes overlapping in bud. Stamens inserted at same or different levels on corolla at base, alternate with corolla lobes, exserted to included; filaments equal to unequal, filiform. Ovary superior, (2- or) 3-locular, placentation axile; ovules 1 to many per locule. Style 1; stigma lobes (2 or) 3. Fruit a capsule. Seeds globose, ovoid, or fusiform, sometimes winged, often sticky when wet.

Nineteen genera and 320–350 species: North and South America, a few species native to temperate Asia and Europe; one genus, Polemonium, and three species in China. Cobaea scandens (a perennial vine with violet campanulate corollas ca. 5 cm) and three species of Philox, P. drummondii Hooker, P. paniculata Linnaeus, and P. subulata Linnaeus (herbs with white to red, salverform corollas and unequally inserted stamens), are cultivated in China.


Herbs perennial, rarely annual. Stems usually from horizontal rhizomes, erect to decumbent, simple. Leaves cauline, alternate, also often in basal rosettes; leaf blade usually oblong, pinnately lobed, divided, or compound, glabrous to glandular-pubescent, often with a mephitic odor. Inflorescences paniculate, rarely capitate. Calyx campanulate, herbaceous throughout, papery in fruit. Corolla pink, violet, or blue, rarely white or yellow, actinomorphic, campanulate to funnelform. Stamens inserted at same level, included or exserted; filaments equal, basally puberulent. Ovary superior, 3-locular. Stigma lobes 3, spreading. Capsule ovoid, rarely globose. Seeds brown to black, usually angular, 1–12 per locule.

Twenty species: temperate Asia, Europe, North America, South America (1 species); three species in China.

The taxa are morphologically very similar and further work is needed to determine their exact relationship.

1a. Stamens shorter than corolla (2/3–3/4 as long as corolla); corolla lobes narrowly elliptic, apex acute .... 3. P. sumushanense
1b. Stamens ca. as long as or longer than corolla; corolla lobes obovate, apex rounded to ± acute.
   Stamens oblong to narrowly ovate or lanceolate, ca. as long as tube; corolla 1–2 cm, lobe margin glabrous to sparsely ciliate .......................................................... 1. P. caeruleum
2b. Calyx 2–3(~5) mm, lobes deltoid, shorter than tube; corolla 0.8–1.2 (~1.7) cm, lobe margin ciliate .......... 2. P. chinense


Herbs perennial, 30–100 cm, glabrous or sparsely glandular-pubescent above middle. Leaves pinnately compound, 7–14 (~25) cm, gradually reduced upward, distal leaves ± sessile; petiole 1.5–8 cm; leaflets 11–27, ovate to lanceolate, 1–4 cm × 2–14 mm, glabrous to sparsely pilose. Pedicel 3–5 (~10) mm, puberulent to villous, trichomes often minutely glandular. Calyx 5–8 mm; lobes ca. as long as tube, oblong to lanceolate, apex obtuse to acuminate. Corolla blue-violet, broadly campanulate, 1–2 cm; lobes obovate, margin glabrous to sparsely ciliate, apex rounded to ± acute. Stamens ca. as long as corolla, rarely shorter or longer than corolla. Style longer than stamens, slightly exserted. Capsule

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1a. *Polemonium caeruleum* var. *caeruleum*

花沸（原变种） hua ren（yuan bian zhong）

*Polemonium laxiflorum* (Regel) Kitamura.


Streambanks, open slopes, open sites in forests; (1000–)1700–3700 m. Xinjiang, NW Yunnan [India, Japan, Mongolia, Pakistan, Russia; Europe].

1b. *Polemonium caeruleum* var. *acutiflorum*

尖裂花沸 jian lie hua ren


Stems glabrous below middle. 2n = 14.

Meadows; 1700–2100 m. Heilongjiang, Jilin, Liaoning, Nei Mongol [Korea, E Russia; NW North America].


中华花沸 zhong hua hua ren

Stems erect, 30–90 cm, glabrous, rarely densely pubescent and glandular above middle, glandular pubescent above middle. Leaves pinnately compound, 6–18 cm, gradually reduced upward, uppermost leaves ± sessile; petiole 6–14 cm; leaflets 15–25, narrowly lanceolate to ovate-lanceolate, 0.5–4 cm × 2–14 mm, glabrous. Pedicel 2–3 mm, puberulent, glandular or not. Calyx 5–7 mm; lobes lanceolate, ca. as long as or longer than tube, apex acute. Corolla violet, rotate, 1.3–1.5 cm; lobes narrowly elliptic, margin sparsely ciliate, apex acute. Stamens 2/3–3/4 as long as corolla. Style longer than stamens, exerted or slightly so. Fruit unknown. Fl. Jun-Jul. 2–2.5 mm. Fl. Jun-Aug, fr. Jun-Sep.

Meadows, moist open sites in or at forest edges; 1000–2100 m. Gansu, Heilongjiang, Hubei, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, NE Sichuan [Korea, Mongolia, E Russia].

1a. Stems glabrous below middle ........... 2a. var. *chinense*

1b. Stems densely pubescent and glandular below middle .......... 2b. var. *hirticaulum*

2a. *Polemonium chinense* var. *chinense*

中华花沸（原变种） zhong hua hua ren（yuan bian zhong）


Meadows, open sites in forests; 1000–2100 m. Gansu, Heilongjiang, Hubei, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, NE Sichuan [Korea, Mongolia, E Russia].


毛茎花沸 mao jing hua ren


• Moist sites in or at forest edges; 1000 m. Nei Mongol.


苏木山花沸 su mu shan hua ren

Stems erect, 70–80 cm, sparsely pubescent, also glandular above middle. Leaves pinnately compound, 3–17 cm, gradually reduced upward, uppermost leaves ± sessile; petiole 0.5–8 cm; leaflets 7–21, narrowly lanceolate to lanceolate, 1.2–3.5 cm × 2–5 mm, glabrous, young leaves sparsely glandular-puberulent. Pedicel 3–8 mm, densely glandular-pubescent, with some nonglandular trichomes. Calyx 5–7 mm; lobes lanceolate, ca. as long as or longer than tube, apex acuminate. Corolla violet, rotate, 1.3–1.5 cm; lobes narrowly elliptic, margin sparsely ciliate, apex acute. Stamens 2/3–3/4 as long as corolla. Style longer than stamens, exerted or slightly so. Fruit unknown. Fl. Jun-Jul.

• Moist open sites, forests; 1700–1800 m. Nei Mongol.