

91. THELIGONUM Linnaeus, Sp. Pl. 2: 993. 1753.

假繁缕属 *jia fan lü shu*

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Cynocrambe Gagnebin.

Herbs, annual or perennial, monoecious. Stems somewhat succulent. Raphides present. Leaves petiolate, somewhat succulent, lower ones opposite, upper ones apparently alternate due to anisophylly, entire; stipules interpetiolar, membranous, united at base to petioles. Flowers unisexual, rarely bisexual, axillary in upper nodes, small 1–3 flowered cymes, bracts reduced. Staminate flowers sessile; calyx limb reduced; perianth (equivalent to corolla) deeply lobed, lobes 2–5, valvate, spreading or reflexed at anthesis, 3–5 parallel nerves; stamens (2–)6–30, sometimes united basally in groups, anthers linear, dorsifixed at anthesis, free slender filaments, pistillode reduced. Pistillate flowers subsessile; calyx limb reduced; perianth (equivalent to corolla) tubular, oblique, upper part an elongate constricted mouth, 2–4 denticulate-lobed; staminodes reduced; ovary 1-celled; style simple, exserted; ovule solitary, basal. Fruit a nutlike drupe, compressed; seed U-shaped; endosperm fleshy.

Four species: E Asia, Atlantic Ocean islands, Mediterranean region; three species (two endemic) in China.

Traditionally, Theligonaceae have been treated as a monogeneric family of controversial relationship: Rubiales (Cronquist), Myrtales (Engler), Caryophyllales (Dalla Torre & Harms). However, recent reliable molecular data place it within a highly derived group of Rubiaceae (along with *Galium*, *Hedyotis*, and *Rubia*; Pl. Syst. Evol. 225: 43–75. 2000).

- 1a. Stamens 5–7; stem often ca. 10 cm 1. *T. formosanum*
1b. Stamens ca. 20; stem 15–50 cm.
2a. Annual herbs; leaf blades 2–5 × 1.5–3 cm; stamens more than 20 3. *T. macranthum*
2b. Perennial herbs; leaf blades 0.7–3 × 0.7–1.5 cm; stamens 20–25 or 16–20 2. *T. japonicum*

1. *Theligonum formosanum* (Ohwi) Ohwi & T. S. Liu, Fl. Taiwan 3: 904. 1977.

台湾假繁缕 *tai wan jia fan lü*

Cynocrambe formosana Ohwi, Acta Phytotax. Geobot. 2: 157. 1933.

Herbs, perennial, small, becoming black when dry. Stem erect, 10–15 cm, branched from base, creeping below, somewhat hairy. Leaf blade broadly ovate, 1.2–2 × 1–1.5 cm, pilose adaxially, puberulent on veins abaxially, base subcordate, subtruncate, or rounded, decurrent to petiole, apex acute; petiole 0.5–1.2 cm; stipules membranous, connate, deltoid-ovate, 2–3 mm, ciliate. Flowers white, unisexual. Staminate flowers: perianth membranous, 3-parted, lobes oblanceolate, 2.5–3 mm, obtuse, reflexed, 3–5-veined; stamens 5–7. Pistillate flowers smaller; perianth 2-lobed, lobes obtuse. Fruit obliquely obovoid, ca. 4 mm, hairy. Fl. Mar–Jul, fr. Jun–Aug.

• Wet places in forests and along mountain trails; ca. 2700 m. Taiwan (Pingdong).

2. *Theligonum japonicum* Ôkubo & Makino, Bot. Mag. (Tokyo) 3: 五 [5]. 1889.

日本假繁缕 *ri ben jia fan lü*

Cynocrambe japonica (Ôkubo & Makino) Makino.

Herbs, perennial, fetid. Stem erect or ascending, 15–36 cm, branched often from base, creeping below, pubescent above. Leaf blade ovate or elliptic, 0.7–3 × 1–1.5 cm, pubescent on both surfaces, base rounded or broadly cuneate, apex acute, lateral veins 3 each side; petiole 0.3–1.5 cm; stipules membranous, connate, ovate or deltoid-ovate, 2–3 mm, ciliate. Flowers unisexual. Staminate flowers: perianth membranous, 3-parted, lobes oblanceolate, 2.5–3 mm, obtuse, reflexed, 3–5-veined;

stamens 20–25 or 16–20, pendulous. Pistillate flowers: minute; perianth 3- or 4-toothed. Fruit obliquely ovoid, ca. 5 mm, hairy. Fl. Mar–Jun, fr. Jun–Aug.

Wet places in valleys, by streams; 900–1200 m. Anhui, Shaanxi, Zhejiang [Japan].

3. *Theligonum macranthum* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 10: 71. 1887.

假繁缕 *jia fan lü*

Cynocrambe macrantha (Franchet) Poulsen.

Herbs, annual, fetid. Stem erect, 30–50 cm, ferruginous pubescent. Leaves herbaceous; leaf blade broadly ovate, ovate-lanceolate, or suboblong, 2–5 × 1–3 cm, sparsely pubescent on both surfaces, glabrescent, base subcuneate or subrounded, somewhat decurrent to petiole, apex acuminate; petiole 0.5–1.8 cm; stipules membranous, connate, ovate or deltoid-ovate, 4–6 mm, ciliate. Flowers unisexual. Staminate flowers: perianth membranous, 2-lobed, tube ca. 2 mm, lobes 3–5 mm, lanceolate, apex obtuse, reflexed, 5–7-veined; stamens more than 20. Pistillate flowers: smaller; perianth 2-lobed, apex obtuse. Fruit ovoid, ca. 5 mm. Fl. Apr–Jul, fr. Jun–Aug.

• Wet places in forests; 1800–2400 m. W Hubei, Sichuan, Zhejiang.

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