

6. HAPLOPHYLLUM A. Jussieu, *Mém. Mus. Hist. Nat.* 12: 464. 1825 [*“Aplophyllum”*],
nom. cons., not *Aplophyllum* Cassini (1824).

拟芸香属 ni yun xiang shu

Zhang Dianxiang (张奠湘); Thomas G. Hartley

Herbs, perennial [or sometimes low shrubs]. Leaves alternate, simple [occasional leaves 3- or 5-parted]. Inflorescences terminal, cymose and often corymbiform, (1- or) few to many flowered. Flowers bisexual, actinomorphic. Sepals 5, distinct or connate to ± half their length. Petals 5, imbricate in bud, margin entire. Stamens 10, distinct [or monadelphous]. Disk pulvinate. Gynoecium (2 or)3–5-carpelled; ovaries connate in ± their basal half, otherwise contiguous; ovules few or several per locule; style lateral, of (2 or)3–5 contiguous or connate styler elements; stigma punctiform or capitellate. Fruit a (2 or)3–5-carpelled loculicidal capsule or rarely indehiscent, with carpels connate as in gynoecium; endocarp thinly cartilaginous, adnate to mesocarp in dehiscent fruit. Seeds reniform; seed coat leathery, rugose; endosperm copious; embryo curved; cotyledons elliptic-oblong, flattened; hypocotyl superior.

About 65 species: N Africa, Asia, S Europe; three species (one endemic) in China.

- 1a. Leaf blade ovate to lanceolate, 5–20 mm wide, secondary veins prominent 2. *H. acutifolium*
1b. Leaf blade elliptic, lanceolate, or linear, 1–5 mm wide, secondary veins not prominent.
2a. Inflorescences many flowered; gynoecium 2- or 3-carpelled 1. *H. dauricum*
2b. Inflorescences 1-flowered; gynoecium 4- or 5-carpelled 3. *H. tragacanthoides*

1. *Haplophyllum dauricum* (Linnaeus) G. Don, *Gen. Hist.* 1: 781. 1831.

北芸香 bei yun xiang

Peganum dauricum Linnaeus, *Sp. Pl.* 1: 445. 1753; *Haplophyllum lineare* (Candolle) G. Don; *Ruta daurica* (Linnaeus) Candolle.

Herbs, perennial. Underground part woody, above-ground part many branched; branchlets slender, 10–20 cm, puberulent when young. Leaves subsessile; leaf blade lanceolate to linear, 5–20 × 1–5 mm, grayish green, with oil glands, base attenuate, apex acute. Inflorescences many flowered or very rarely 3-flowered; bracts linear, small. Sepals ca. 1 mm, basally connate, margin pubescent. Petals yellowish to pale yellowish white, oblong, 6–8 mm, with scattered semipellucid oil glands. Staminal filaments enlarged in ± their basal half; anthers elongately ellipsoid; connective with an apical oil gland. Ovary globose, (2 or)3(or 4)-loculed; style slender; stigma slightly enlarged. Fruiting carpels 2-seeded. Seeds brownish black, 2–2.5 × 1–1.5 mm. Fl. Jun–Jul, fr. Aug–Sep.

Hill slopes; low elevations. Gansu, Hebei, Heilongjiang, Jilin, Nei Mongol, Ningxia, Shaanxi, Xinjiang [Mongolia, Russia].

2. *Haplophyllum acutifolium* (Candolle) G. Don, *Gen. Hist.* 1: 780. 1831.

大叶芸香 da ye yun xiang

Ruta acutifolia Candolle, *Prodr.* 1: 711. 1824; *Haplophyllum flexuosum* Boissier; *H. perforatum* Karelin & Kirilov; *H. sieversii* Fischer & C. A. Meyer; *R. flexuosa* (Boissier) Engler; *R. perforata* M. Bieberstein; *R. sieversii* (Fischer & C. A. Meyer) B. Fedtschenko.

Herbs, perennial, to 80 cm tall. Stem many branched; branches stout, spreading, glabrous, with oil glands; branchlets angular. Leaves glabrous; petiole 4–6 mm or leaf subsessile; leaf blade ovate to rhombic but on basal part of branches lanceolate and on apical part of branches narrowly elliptic, 3–5 × 0.5–2 cm, thickly papery, with oil glands. Inflorescences

many flowered; rachis pubescent when young; bracts linear to narrowly elliptic, margin ciliate. Flowers pedicellate. Sepals triangular-ovate, to 1 mm, basally connate. Petals yellow, ca. 3 × 1.5 mm, with scattered semipellucid oil glands. Staminal filaments flattened in ± their basal half. Ovary globose; style ca. 0.5 mm; stigma slightly enlarged. Capsule 4- or 5-carpelled, 3–4 mm in diam. when mature, with protruding oil glands when young, 2-seeded. Fl. May, fr. Sep.

Fl. China 11: 73–74. 2008.

Grassy areas, riversides; ca. 700 m. Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Tajikistan, Turkmenistan, Uzbekistan; SW Asia].

C. C. Huang (Fl. Reipubl. Popularis Sin. 43(2): 87. 1997) mistakenly called this species *Haplophyllum perforatum* (M. Bieberstein) Karelin & Kirilov. The *H. perforatum* Karelin & Kirilov (1841) is based a different type than *Ruta perforata* M. Bieberstein (1800), and a combination of the *R. perforata* in *Haplophyllum* is a later homonym. The oldest specific epithet available for this species is *R. acutifolia* Candolle (1824).

3. *Haplophyllum tragacanthoides* Diels, Notizbl. Bot. Gart. Berlin-Dahlem 9: 1028. 1926.

针枝芸香 zhen zhi yun xiang

Herbs, perennial, 10–15 cm tall. Branches dichotomous from stem base. Leaves sessile; leaf blade shortly linear to narrowly elliptic, 3–9 × 1–3 mm, thickly papery, grayish green, with scattered oil glands, margin denticulate. Flowers terminal, solitary. Sepals ovate, to 1 mm, basally connate, margin ciliate. Petals yellow, oblong, 7–8 × ca. 3 mm, with scattered semipellucid oil glands, margin irregular. Staminal filaments flattened in ± their basal half, with trichomes. Ovary 4- or 5-carpelled; style ca. 2.5 mm; stigma slightly enlarged. Capsule 4- or 5-carpelled, with oil glands; carpels ca. 5 mm in diam., 1-seeded. Seeds reniform, 2–2.5 × ca. 1.5 mm; seed coat shrunken. Fl. May–Jun, fr. Jul–Aug.

- Dry hill slopes; ca. 1500 m. Gansu, Nei Mongol, Ningxia.

Townsend (Hooker's Icon. Pl. 40: 35, t. 3902. 1986) placed *Haplophyllum tragacanthoides* in synonymy of *H. dauricum* (Linnaeus) G. Don.

Fl. China 11: 73–74. 2008.