

15. PUGIONIUM Gaertner, Fruct. Sem. Pl. 2: 291. 1791.

沙芥属 sha jie shu

Herbs annual. Trichomes absent. Stems erect, simple at base, paniculately branched above. Basal leaves petiolate, not rosulate, 1–3-pinnatisect. Cauline leaves attenuate or auriculate at base, subentire, dentate, pinnatifid, or pinnatisect. Racemes numerous flowered, ebracteate, elongated considerably in fruit; rachis flexuous. Fruiting pedicels stout, divaricate. Sepals narrowly oblong, united, rupturing basally at anthesis, unequal, base of lateral pair strongly saccate, margin membranous. Petals white or pink; blade linear or linear-lanceolate, apex subacute; claw subequaling sepals. Stamens 6, tetradynamous; filaments not dilated at base, filiform; anthers oblong, obtuse at apex. Nectar glands 2, lateral, ringlike; median glands absent. Ovules 2 per ovary, subapical. Fruit indehiscent, samaroid silicles, transversely oblong or ovoid, 1-seeded, thin walled, with woody and coarsely reticulate venation, angustiseptate, sessile, transversely 2-winged, 2–16-spined; wings prominent, longer or shorter than main part of fruit, with 3–20 subparallel veins extending full length; spines often unequal in length, at least some subparallel to pedicel, those on the seed-bearing fruit half longer; replum and valves margin united into a longitudinal vein; septum complete; style absent, obsolete, or conical and to 5 mm; stigma capitate, entire, long papillate. Seeds 1, wingless, oblong, plump; seed coat smooth, not mucilaginous when wetted; cotyledons incumbent or obliquely so.

Three species: China, Mongolia, adjacent Russia; two species (one endemic) in China.

1a. Fruit wings ensiform, longitudinally 3-veined, acuminate, ascending or divaricate-ascending; ultimate lobes of

basal and lower cauline leaves lanceolate or oblong, rarely lanceolate-linear 1. *P. cornutum*

1b. Fruit wing lanceolate, obovate, or oblong, longitudinally 5–10(–12)-veined, acute, obtuse, to truncate,

horizontal; ultimate segments of basal and lower cauline leaves filiform or linear 2. *P. dolabratum*

1. *Pugionium cornutum* (Linnaeus) Gaertner, Fruct. Sem. Pl. 2: 291. 1791.

沙芥 sha jie

Bunias cornuta Linnaeus, Sp. Pl. 2: 669. 1753;

Myagrum cornutum (Lamarck) Linnaeus.

Herbs annual, 50–100(–150) cm tall. Stems erect, many branched above. Basal leaves slightly fleshy; petiole 2–6 cm; leaf blade pinnatisect, 8–25 × 1.5–4.5 cm; lateral lobes 4–7 on each side of midvein, ultimate segments oblong, lanceolate, or rarely lanceolate-linear, 1–5 cm × 1–6 mm, entire or larger ones coarsely dentate or 3-fid, apex acute. Middle cauline leaves pinnatisect, auriculate; uppermost cauline leaves oblanceolate or linear, 3–6 cm × 2–4 mm, base attenuate, not auriculate, margin entire. Fruiting pedicels slightly stout, straight or curved upward, (1–)1.7–3 cm. Sepals 5–7 × 1.2–1.5 mm; sac of lateral pair 0.5–0.8(–1) mm. Petals whitish, linear to linear-lanceolate, 1.2–1.5 cm × 1.5–2.5 mm; claw 5–7 mm. Median filaments 6–8 mm; lateral filaments 4–5 mm; anthers oblong, 1.2–1.5 mm. Fruit transversely oblong or ovoid, excluding wings 0.7–1.2 × 1.5–2 cm; wings ensiform, straight, (2–)3–5(–6.5) cm, 3–5(–6) mm wide at base, longitudinally 3-veined, margin entire, apex acuminate; spines 8–10, to 2 cm × 2 mm, basal 4 pointing downward, subparallel to pedicel, much longer than the others, remaining 4 or 6 horizontal or erect; style absent. Seeds brown, oblong, 8–10 × 3–4 mm. Fl. Jun–Aug, fr. Jul–Sep.

• Desert dunes; 1000–1100 m. Nei Mongol, Ningxia, Shaanxi.

2. *Pugionium dolabratum* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, Sér. 3, 26: 426. 1880.

斧翅沙芥 fu chi sha jie

Pugionium calcaratum Komarov; *P. cristatum* Komarov; *P. dolabratum* var. *platypterum* H. L. Yang.

Herbs annual, (50–)60–100 cm tall. Stems erect, many branched above. Basal leaves slightly fleshy; leaf blade 2-pinnatisect, to 25 × 6.5 cm; ultimate lateral lobes filiform or linear, to 5.5 cm × 0.5–1.5 mm, apex subacute. Middle and upper cauline leaves similar to basal. Fruiting pedicels slightly stout, straight, (0.6–)0.8–2(–2.5) cm. Sepals 5–8 × 1.2–1.5 mm; sac of lateral pair 0.6–1.2 mm. Petals pink, linear or linear-lanceolate, 1.2–2 cm × 1.5–2.5 mm; claw 5–8 mm. Median filament pairs 5–8 mm, lateral pair 3–5 mm; anthers oblong, 1.2–1.5 mm. Fruit transversely oblong, excluding wings 0.7–1.2 × 1–2 cm; wings lanceolate, ovate, oblong, or obovate, 0.7–2.5(–3) cm, 4–8(–10) mm wide at base, margin entire, apex obliquely truncate, acute, or obtuse, toothless or toothed, 5–10(–12)-veined; spines absent, sometimes up to 16 and to 2 cm × 3 mm; style obsolete or to 1 mm. Seeds brown, oblong, 5–8 × 1.5–3 mm. Fl. Aug–Sep.

Sandy deserts, dunes; 1000–1400 m. Gansu, Nei Mongol, Ningxia, Shaanxi [Mongolia].

