

101. SMELOWSKIA C. A. Meyer in Ledebour, Icon. Pl. 2: 17. 1830.

芹叶芥属 qin ye qi shu

Chrysanthemopsis K. H. Rechinger.

Herbs perennial, often pulvinate, with well-developed caudex covered with petioles of previous years. Trichomes dendritic, sometimes mixed with simple and forked stalked ones. Stems erect or ascending, several from caudex, simple or branched apically. Basal leaves petiolate, rosulate, simple, 1- or rarely 2-pinnatisect, sometimes entire, densely pubescent. Cauline leaves shortly petiolate or sessile, not auriculate, entire or pinnatisect. Racemes ebracteate or basally bracteate, elongated in fruit. Fruiting pedicels suberect, ascending, or divaricate. Sepals ovate or oblong, ascending or spreading, base of lateral pair not saccate. Petals white, creamy white, or purplish, longer than sepals; blade suborbicular, obovate, or spatulate, apex rounded; claw subequaling or longer than sepals. Stamens 6, tetradynamous; filaments dilated at base; anthers ovate or oblong, obtuse at apex. Nectar glands confluent and subtending bases of all stamens. Ovules 6–30 per ovary. Fruit dehiscent siliques or silicles, linear, oblong, ovoid, obovoid, ellipsoid, or lanceolate, terete or slightly 4-angled, sometimes angustiseptate; valves with a prominent midvein, smooth; replum rounded; septum complete or perforated; style absent or short and to 1.5 mm; stigma capitate, entire. Seeds uniseriate, wingless, oblong, plump; seed coat minutely reticulate, not mucilaginous when wetted; cotyledons incumbent.

Seven species: three in C and E Asia, three in North America, and one in both areas; two species in China.

Smelowskia bifurcata (Ledebour) Botschantzev was recorded from Xinjiang in FRPS, but the present authors have seen no material to confirm that record.

1a. Fruit linear to linear-ellipsoid; seeds (or ovules) (12–)14–22 per fruit; fruiting pedicels divaricate; inflorescence often branched 1. *S. alba*

1b. Fruit ovoid, pyriform, ellipsoid, oblong, or rarely linear-ellipsoid; seeds (or ovules) 4–10(–12) per fruit; fruiting pedicels suberect, ascending, or rarely divaricate; inflorescence often simple 2. *S. calycina*

1. *Smelowskia alba* (Pallas) Regel, Bull. Soc. Imp. Naturalistes Moscou 34: 208. 1861.

灰白芹叶芥 hui bai qin ye qi

Sisymbrium album Pallas, Reise Russ. Reich. 3: 739.

1776; *Hutchinsia alba* (Pallas) Bunge; *Nasturtium album* (Pallas) Sprengel; *Smelowskia cinerea* C. A.

Meyer. Herbs (5–)15–40(–60) cm tall, canescent basally. Stems branched above, densely pubescent basally with simple trichomes to 2 mm and much smaller dendritic ones, often glabrescent above. Basal leaves with petioles (0.5–)1.5–4 cm, ciliate with simple trichomes; leaf blade 1- or 2-pinnatisect, oblong or ovate in outline, 1.5–6 × 0.7–3 cm; ultimate segments linear-oblong, oblong, or rarely ovate, 1.5–15 × 0.5–3 mm, apex obtuse or subacute. Middle and upper cauline leaves sessile or subsessile, smaller and less divided than basal ones. Inflorescence often branched. Fruiting pedicels divaricate, slender, (5–) 7–11(–15) mm, sparsely pubescent with crisped simple trichomes. Sepals ovate, 2–3 × 1–1.5 mm, caducous. Petals white, suborbicular, 3.5–5(–6.5) × 2–3(–5) mm, rounded at apex, abruptly narrowed to claw 1–1.5(–2) mm. Filaments 1.5–3 mm; anthers oblong, 0.7–0.8 mm. Ovules (12–)14–22 per ovary. Fruit linear to linear-ellipsoid, (5–)8–11(–15) × 1–2 mm, narrowly cuneate at both ends; valves with a prominent midvein; gynophore obsolete or to 0.5 mm; septum perforate, with a short midvein distally; style 0.5–1(–1.3) mm. Seeds reddish brown, oblong, 1–1.5 × 0.5–0.7 mm. Fl. Jun–Jul, fr. Jul–Aug.

Rocky crevices. Heilongjiang [Mongolia, Russia (Far East, Siberia)]. The above first record from Heilongjiang is based on *Sato 5672* (PE). Records of *Smelowskia alba* from Xinjiang in FRPS and Fl. Xinjiang. (2(2): 228. 1995) are likely based on misidentified plants of *S. calycina*. The present authors were unable to find collections of the former species from Xinjiang.

2. *Smelowskia calycina* (Stephan) C. A. Meyer in Ledebour, Fl. Altaic. 3: 170. 1831.

芹叶芥 qin ye qi

Lepidium calycinum Stephan in Willdenow, Sp. Pl. 3: 433. 1800; *Chrysanthemopsis koelzii* K. H. Rechinger;

Hutchinsia calycina (Stephan) Desvaux; *H. calycina* (Stephan) Desvaux var. *pectinata* (Bunge) Regel & Herder;

H. pectinata Bunge; *Smelowskia calycina* var. *pectinata* (Bunge) B. Fedtschenko; *S. koelzii* (K. H. Rechinger) K. H. Rechinger; *S. pectinata* (Bunge) Velichkin;

S. tianschanica Velichkin. Herbs (3.5–)7–30(–40) cm tall, canescent basally or throughout. Stems often simple above, densely pubescent with simple trichomes to 2 mm and/or much smaller dendritic ones, sometimes glabrescent. Basal leaves with petioles (0.5–)1–5 (–7) cm, ciliate with simple trichomes or not ciliate; leaf blade 1- or 2-pinnatisect, oblong, lanceolate, or ovate in outline, 1.5–8 × 0.4–1.5 cm; ultimate segments linear, oblong, or ovate, to 15 × 3 mm, apex obtuse or subacute. Middle and upper cauline leaves sessile or subsessile, smaller and less divided than basal ones, sometimes pectinate. Inflorescence often simple. Fruiting pedicels suberect or ascending, rarely divaricate, slender, 5–10(–14) mm,

pubescent with dendritic and/or simple straight trichomes. Sepals ovate, 2.5–4 × 1.5–2 mm, caducous or persistent. Petals white or pale yellow, suborbicular or obovate, (3.5–)5–7 × 2–4 mm, rounded at apex, narrowed to claw 1–2.5 mm. Filaments 1.5–3.5 mm; anthers oblong, 0.5–0.8 mm. Ovules 4–10(–12) per ovary. Fruit ellipsoid or oblong, rarely ovoid or linear-ellipsoid, (3–)5–9(–10) × 1.5–2.5 mm, cuneate at least at apex; valves with a prominent midvein; gynophore obsolete or to 0.5 mm; septum perforated or complete, with a midvein distally; style 0.5–1(–1.5) mm. Seeds brown, oblong or subovate, 1.1–1.8 × 0.8–1.1 mm. Fl. Jun–Aug, fr. Jul–Sep.

Rocky slopes, gravelly hills, rocky crevices, alpine meadows; 2500–4900 m. Xinjiang [Afghanistan, India, Kashmir, Kazakstan, Kyrgyzstan, Mongolia, Pakistan, Russia (Far East, Siberia), Tajikistan; North America].

Smelowskia calycina is highly variable and has been divided in both Asian and North American accounts into several, poorly defined species or varieties. In the absence of authoritative studies on the species throughout its range, it is better not to recognize any infraspecific taxa. The Chinese plants are a good match for the type collection of the species. Synonyms pertaining only to C Asia are listed above.

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