

3. SINAPIS Linnaeus, Sp. Pl. 2: 668. 1753.

白芥属 bai jie shu

Herbs annual or rarely perennial. Trichomes absent or simple. Stems erect or ascending, often branched apically, leafy. Basal leaves petiolate, not rosulate, simple, lyrate, pinnatifid, pinnatisect, bipinnatisect or/and dentate. Cauline leaves petiolate or sessile, not auriculate, entire, dentate, or shallowly lobed. Racemes ebracteate, elongated considerably in fruit. Fruiting pedicels slender or thickened, erect, ascending, divaricate, or reflexed. Sepals oblong or linear, spreading or reflexed, not saccate. Petals yellow, spreading; blade obovate, apex obtuse or emarginate; claw subequalling sepals. Stamens 6, tetradynamous; anthers oblong, obtuse at apex. Nectar glands 4, distinct; median pair ovoid; lateral pair prismatic, flat, or rarely lobed. Ovules 4–20 per ovary. Fruit dehiscent siliques, linear, lanceolate, or oblong, terete, somewhat 4-angled, or latiseptate, sessile, segmented; valvular segment dehiscent, few to many seeded, longer or shorter than terminal segment, torulose; valves with 3–7, prominent, longitudinal veins, thin or thick and obscurely veined; terminal segment indehiscent, seedless or 1- or 2-seeded, flattened and ensiform, or terete and conical or subulate, sometimes corky; replum rounded; septum complete, membranous; style distinct; stigma capitate, 2-lobed. Seeds uniseriate, wingless, globose, plump or rarely slightly flattened; seed coat reticulate, mucilaginous or not when wetted; cotyledons conduplicate.

Seven species: Mediterranean region, especially N Africa; two species in China.

- 1a. Fruit lanceolate, terminal segment strongly compressed, ensiform; fruiting pedicels divaricate; fruit valves hispid with subsetose trichomes mixed with much shorter, more slender ones 1. *S. alba*
- 1b. Fruit linear, terminal segment terete, conical or subulate; fruiting pedicels ascending or suberect; fruit valves glabrous or rarely sparsely pubescent with 1 kind of trichome 2. *S. arvensis*

1. *Sinapis alba* Linnaeus, Sp. Pl. 2: 668. 1753.

白芥 bai jie

Brassica alba (Linnaeus) Rabenhorst; *B. hirta* Moench.

Herbs (15–)25–100(–220) cm, retrorsely hispid, rarely glabrescent. Stems erect, often branched above. Petiole of basal and lower cauline leaves 1–3(–6) cm; leaf blade oblong, ovate, or lanceolate in outline, lyrate, pinnatifid, pinnatisect, (3.5–)5–14(–16) × 2–6(–8) cm; terminal lobe broadly ovate, (1–)3–6 cm, usually 3-lobed, margin dentate; lateral lobes 1–3 on each side of midvein, oblong, ovate, or lanceolate, 1.5–2.5 cm, margin dentate, repand, or rarely pinnatifid. Upper cauline leaves shortly petiolate; leaf blade ovate or oblong-ovate, 2–4.5 cm, margin coarsely dentate, rarely subentire. Fruiting pedicels divaricate, stout, (3–)6–12(–17) mm. Sepals yellow or green, narrowly oblong, (3.8–)4–7(–8) × 1–1.8 mm, spreading or reflexed. Petals pale yellow, obovate, (0.7–)0.8–1.2(–1.4) cm × (3–)4–6(–7) mm. Filaments (3–)4–7(–8) mm; anthers oblong, 1.2–1.5 mm. Fruit lanceolate, (1.5–)2–4.2(–5) cm × (2–)3–5.5(–6.5) mm; valvular segment (0.5–)0.7–1.7(–2) cm, 2–5-seeded in each locule, 3–5(–7)-veined, torulose, terete or slightly compressed, hispid with subsetose trichomes mixed with much shorter and more slender ones; terminal segment ensiform, strongly compressed, (1–)1.5–2.5(–3) cm, straight or curved upward, seedless or 1(or 2)-seeded. Seeds gray, pale brown, or reddish brown, globose, (1.7–)2–3(–3.5) mm in diam., finely reticulate. Fl. and fr. May–Sep. $2n = 24^*$.

Roadsides, fields, pastures, disturbed sites. Anhui, Gansu, Hebei, Liaoning, Qinghai, Shandong, Shanxi, Sichuan, Xinjiang [India, Kashmir, Russia, Tajikistan, Turkmenistan, Vietnam; N Africa, SW Asia, Europe; naturalized elsewhere].

The seeds are used for the manufacture of table mustard and also for the extraction of oils, which are used for cooking and making soap and mayonnaise. The species is a cosmopolitan, naturalized weed.

2. *Sinapis arvensis* Linnaeus, Sp. Pl. 2: 668. 1753.

新疆白芥 xin jiang bai jie

Brassica arvensis (Linnaeus) Rabenhorst; *B. kaber* (de Candolle) L. C. Wheeler; *B. sinapistrum* Boissier; *B. xinjiangensis* Y. C. Lan & T. Y. Cheo; *Sinapis kaber* de Candolle.

Herbs (5–)20–100(–210) cm, retrorsely or spreading hirsute or hispid, rarely glabrous. Stems erect, often branched above. Petiole of basal and lower cauline leaves 1–4(–7) cm; leaf blade oblong, ovate, or lanceolate in outline, lyrate, pinnatifid, or undivided and dentate, (3–)4–18(–25) × 1.5–5(–7) cm; terminal lobe broadly ovate, obovate, to elliptic, margin dentate; lateral lobes 1–4 on each side of midvein, oblong, ovate, or lanceolate, smaller than terminal one, margin dentate. Upper cauline leaves shortly petiolate; leaf blade ovate or lanceolate, often undivided, margin dentate or subentire, apex acute. Fruiting pedicels ascending or suberect, stout, (2–)3–7(–15) mm. Sepals yellow or green, narrowly oblong, (4.5–)5–6(–7) × 1–1.8 mm, spreading or reflexed. Petals bright or pale yellow, obovate, (0.8–)0.9–1.2(–1.7) cm × (3–)4–6(–7.5) mm. Filaments (3–)4–6 mm; anthers oblong, 1.2–1.5 mm. Fruit linear, (1.5–)2–4.5(–5.7) cm × (1.5–)2.5–3.5(–4) mm; valvular segment (0.6–)1.2–3.5(–4.3) cm, (2–)4–8(–12)-seeded in each locule, 3–5(–7)-veined, torulose,

terete, glabrous or pubescent with 1 kind of trichome; terminal segment conical or subulate, terete, (0.7–)1–1.6 cm, straight or curved upward, seedless or 1- or 2-seeded. Seeds blackish to dark brown, globose, (1–)1.5–2 mm in diam., finely reticulate. Fl. and fr. May–Sep. $2n = 18^*$.

Roadsides, waste places, fields, pastures; 400–1800 m. Xinjiang [Afghanistan, Kazakstan, Kyrgyzstan, Mongolia, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; N Africa, SW Asia, Europe; naturalized elsewhere].

