

50. ARABIDOPSIS Heynhold in Holl & Heynhold, Fl. Sachsen 1: 538. 1842, nom. cons.

鼠耳芥属 shu er jie shu

Cardaminopsis (C. A. Meyer) Hayek; *Hylandra* Á.. Löve.

Herbs annual, biennial, or perennial with stolons or woody caudex. Trichomes simple, mixed with stalked, 1–3-forked ones. Stems erect or decumbent, often several from base, usually glabrous above. Basal leaves rosulate, entire, toothed, or pinnately lobed. Cauline leaves petiolate or sessile, entire, dentate, or rarely lyrate. Racemes few to several flowered, ebracteate. Fruiting pedicels ascending or divaricate or slightly reflexed. Sepals oblong, erect or ascending, glabrous or pubescent, base of lateral pair subsaccate or not. Petals white, pink, or purple; blade obovate, spatulate, or oblanceolate, apex obtuse or emarginate; claw distinct or not. Stamens 6, erect, slightly tetradynamous; filaments not dilated basally; anthers oblong, obtuse. Nectar glands confluent, subtending bases of filaments. Ovules 15–80 per ovary. Fruit dehiscent siliques, linear or cylindrical, terete or flattened and latiseptate, shortly stipitate or sessile; valves papery, veinless or midvein distinct, glabrous, smooth or somewhat torulose; replum rounded; septum complete; style obsolete or to 1 mm; stigma capitate, entire. Seeds numerous, uniseriate, wingless or margined, oblong or ellipsoid, plump or flattened; seed coat minutely reticulate, mucilaginous or not when wetted; cotyledons accumbent or rarely incumbent.

Nine species: E and N Asia, Europe, North America; three species in China.

- 1a. Fruit terete; annuals; petals 2–3.5 mm; seeds usually plump; cotyledons incumbent 1. *A. thaliana*
- 1b. Fruit strongly flattened; biennials or perennials; petals 4–6.5 mm; seeds usually flattened; cotyledons accumbent.
 - 2a. Plants stoloniferous perennials; fruit valves not veined; basal leaves orbicular or pinnate with orbicular to suborbicular terminal lobes 2. *A. halleri*
 - 2b. Plants non-stoloniferous biennials or perennials; fruit valves with a prominent midvein; basal leaves spatulate or oblanceolate, rarely obovate, without orbicular terminal lobes 3. *A. lyrata*

1. Arabidopsis thaliana (Linnaeus) Heynhold in Holl & Heynhold, Fl. Sachsen 1: 538. 1842.

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Arabidopsis thaliana Linnaeus, Sp. Pl. 2: 665. 1753; *Sisymbrium thalianum* (Linnaeus) J. Gay & Monnard; *Stenophragma thalianum* (Linnaeus) Celakovsky.

Herbs annual, (2–)5–30(–50) cm tall. Stems erect, 1 or few from base, simple or branched above, basally with predominantly simple trichomes, apically glabrous. Basal leaves shortly petiolate; leaf blade obovate, spatulate, ovate, or elliptic, 0.8–3.5(–4.5) cm × (1–)2–10(–15) mm, adaxially with predominantly simple and stalked 1-forked trichomes, margin entire, repand, or dentate, apex obtuse. Cauline leaves sessile, usually few; blade lanceolate, linear, oblong, or elliptic, (0.4–)0.6–1.8(–2.5) cm × 1–6(–10) mm, entire or rarely few toothed. Fruiting pedicels slender, divaricate, straight, 3–10(–15) mm. Sepals 1–2(–2.5) mm, glabrous or distally sparsely pubescent with simple trichomes, lateral pair not saccate. Petals white, spatulate, 2–3.5 × 0.5–1.5 mm, base attenuate to a short claw. Filaments white, 1.5–2 mm. Ovules 40–70 per ovary. Siliques linear, terete, smooth, (0.8–)1–1.5(–1.8) cm × 0.5–0.8 mm; valves with a distinct midvein; style to 0.5 mm. Seeds ellipsoid, plump, light brown, 0.3–0.5 mm; cotyledons incumbent. Fl. and fr. Jan–Jun(–Oct). $2n = 10^*$.

Plains, mountain slopes, river banks, roadsides; near sea level to 2000 m. Anhui, Gansu, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Xinjiang, Xizang, Yunnan, Zhejiang [India, Japan, Kazakstan, Korea, Mongolia, Russia, Tajikistan, Uzbekistan; Africa, SW Asia, Europe, North America].

Arabidopsis thaliana is the most widely used flowering plant as a model organism for studies in genetics, development, physiology, biochemistry, and related fields. It is also a naturalized weed throughout much of the world.

2. Arabidopsis halleri (Linnaeus) O’Kane & Al-Shehbaz subsp. **gemmifera** (Matsumura) O’Kane & Al-Shehbaz, Novon 7: 325. 1997.

叶芽鼠耳芥 ye ya shu er jie

Cardamine gemmifera Matsumura, Bot. Mag. (Tokyo) 8: 49. 1899; *Arabidopsis coronata* Nakai; *A. gemmifera* (Matsumura) Makino; *A. gemmifera* var. *alpicola* H. Hara; *A. greatrexii* (Miyabe & Kudo) Miyabe & Tatewaki; *A. halleri* Linnaeus var. *senanensis* Franchet & Savatier; *A. maximowiczii* N. Busch; *A. senanensis* (Franchet & Savatier) Makino; *Cardamine greatrexii* Miyabe & Kudo; *Cardaminopsis gemmifera* (Matsumura) Berkutenko.

Herbs perennial, stoloniferous, (10–)20–45(–60) cm tall. Stems decumbent, few from base, simple or branched above, basally with simple and 1-forked trichomes, apically glabrous. Basal leaves with a petiole (5–)1–2.5(–5) cm; leaf blade orbicular, broadly ovate, or spatulate, (1–)2–4.5(–9) × (0.5–)1–1.5(–2.5) cm, adaxially with a mixture of simple and stalked, 1- or 2-forked trichomes, margin lyrate-pinnatifid and with (1

or)2–4(–6) lateral lobes on each side; terminal lobe suborbicular, much larger than lateral ones, sometimes coarsely dentate, rarely entire or repand, apex obtuse. Cauline leaves shortly petiolate, several; blade of middle ones ovate, oblanceolate, oblong, or elliptic, (0.5–)1–2.5(–8) × (0.2–)0.5–1.5(–3) cm, coarsely toothed or rarely lobed, gradually reduced in size upward. Fruiting pedicels slender, divaricate or slightly reflexed, straight, (0.5–)0.8–1.3(–2) cm. Sepals 1.5–2 mm, glabrous or apically with few simple trichomes, lateral pair saccate. Petals white or pale purple, obovate, 4–5(–6.5) × 2–2.5(–3.5) mm; claw 1–2 mm. Filaments white, 2–2.5 mm. Siliques linear, flattened, torulose, (0.9–)1–1.5(–1.8) cm × 0.5–0.8 mm; valves without a distinct midvein; style to 0.7 mm. Seeds oblong, flattened, light brown, 0.5–0.7 mm; cotyledons accumbent. Fl. Jun–Jul, fr. Jul–Aug.

Gravelly or grassy slopes, forests; 1500–2600 m. Heilongjiang, Jilin, Liaoning, Taiwan [Japan, Korea, Russia (Far East, E Siberia)].

The record of *Arabidopsis halleri* subsp. *halleri* in FRPS (as *Arabis halleri*) is based on misidentified plants of subsp. *gemmifera*; true subsp. *halleri* is distributed in E and S Europe.

3. *Arabidopsis lyrata* (Linnaeus) O’Kane & Al-Shehbaz subsp. ***kamchatica*** (Fischer ex de Candolle) O’Kane & Al-Shehbaz, *Novon* 7: 326. 1997.

琴叶鼠耳芥 qin ye shu er jie

Arabis lyrata Linnaeus var. *kamchatica* Fischer ex de Candolle, *Syst. Nat.* 2: 231. 1821; *A. kamchatica* (Fischer ex de Candolle) Ledebour; *A. kawasakiana* Makino; *A. lyrata* subsp. *kamchatica* (Fischer ex de Candolle) Hultén; *A. morrisonensis* Hayata; *Cardaminopsis kamchatica* (Fischer ex de Candolle) O. E. Schulz.

Herbs biennial or perennial with a caudex, (5–)10–30(–45) cm tall. Stems erect or decumbent, 1 to many from base, usually branched above, basally with simple and 1-forked trichomes, apically glabrous. Basal leaves with a petiole 0.5–2(–6) cm; leaf blade oblanceolate or ovate, (0.5–)1–3(–8) × (0.3–)0.5–1.5 cm, adaxially with a mixture of simple and stalked, 1-forked trichomes, rarely glabrous, margin dentate or lyrate, with 1–3 lateral lobes on each side, apex obtuse. Cauline leaves shortly petiolate, several; blade of middle ones oblanceolate, (0.5–)1–3(–4) cm × (1–)2–7 mm, entire, repand, or obscurely toothed, rarely lobed, gradually reduced in size upward. Fruiting pedicels slender, divaricate, straight, (0.5–)0.8–1.2 cm. Sepals 2–3 mm, glabrous or densely pubescent, lateral pair saccate. Petals white, spatulate or obovate, 4–5(–6) × 1.5–2(–2.5) mm; claw to 1 mm. Filaments white, 2–3 mm. Siliques linear, flattened, torulose, (1.5–)2–3.5(–4.5) cm × 0.5–0.8 mm; valves with a distinct midvein extending full length; style to 0.5 mm. Seeds oblong, flattened, light

brown, 0.9–1.2 mm; cotyledons accumbent. Fl. Mar–Jul, fr. Jun–Oct. $2n = 16, 32$.

Gravelly slopes, forests, alpine regions, roadsides; 1700–3400 m. Jilin, Taiwan [Japan, Korea, Russia (Far East, E Siberia); NW North America].

Arabidopsis lyrata subsp. *lyrata* is restricted to North America.

