

57. **DESIDERIA** Pampanini, Boll. Soc. Bot. Ital. 1926: 111. 1926.

扇叶芥属 shan ye jie shu

Ermaniopsis H. Hara; *Oreoblastus* Suslova.

Herbs perennial, with a slender, rhizomelike caudex. Trichomes simple or mixed with short-stalked, forked ones. Stems simple, leafy or leafless, sometimes absent. Basal leaves petiolate, rosulate, simple, 3–9(–11)-toothed, rarely subentire, often palmately veined. Cauline leaves absent or similar to basal ones, entire or toothed, subsessile or petiolate. Racemes 3–30-flowered, bracteate or ebracteate, sometimes flowers solitary on pedicels originating from basal rosette. Sepals ovate or oblong, free or united, caducous or persistent, erect, base of lateral pair not saccate. Petals purple, purple-green, or rarely white, sometimes yellowish at base of blade; blade obovate or spatulate, apex obtuse or submarginate; claw subequaling or longer than sepals. Stamens 6, tetradynamous; filaments wingless or rarely winged and toothed, dilated at base; anthers ovate or oblong, obtuse at apex. Nectar glands 2 and lateral, or confluent and subtending bases of all stamens; median glands present or absent. Ovules 10–70 per ovary. Fruit dehiscent siliques, linear or lanceolate, latiseptate, rectangular in cross section, sessile; valves papery, with a prominent midvein and distinct marginal veins, not torulose, apex persistently united with replum; replum rounded; septum complete, perforated, or reduced to a rim, translucent, or absent; style obsolete; stigma capitate, 2-lobed or rarely subentire. Seeds uniseriate or biseriate, wingless, oblong or ovate, often flattened; seed coat minutely reticulate, not mucilaginous when wetted; cotyledons accumbent.

Twelve species: Himalayas and adjacent C Asia; eight species (two endemic) in China.

- 1a. Sepals connate, persistent till or after fruit dehiscence; septum absent or reduced to a rim 8. *D. mirabilis*
- 1b. Sepals free, caducous or rarely persistent till about fruit maturity; septum complete or rarely perforated apically.
 - 2a. Pedicels solitary from a basal rosette.
 - 3a. Fruit ovate or broadly lanceolate, 6–9 mm wide, prominently reticulate veined 7. *D. baiogoinensis*
 - 3b. Fruit linear to linear lanceolate, 2–5 mm wide, obscurely veined.
 - 4a. Leaf trichomes forked and simple; replum retrorsely ciliate; valves glabrous; sepals 3–4 mm; petals 6–7 mm 6. *D. pumila*
 - 4b. Leaf trichomes exclusively simple; replum spreading ciliate; valves pubescent; sepals 6–7 mm; petals 11–14 mm 5. *D. prolifera*
 - 2b. Pedicels on a distinct rachis of (3–)6–30-flowered racemes.
 - 5a. Racemes ebracteate 4. *D. flabellata*
 - 5b. Racemes bracteate throughout.
 - 6a. Stem and pedicel trichomes forked 2. *D. stewartii*
 - 6b. Stem and pedicel trichomes exclusively simple or absent.
 - 7a. Fruit lanceolate to linear-lanceolate, (3–)4–6 mm wide; petals (6–)6.5–8 × 3–4 mm; seeds biseriate, (1.5–)1.8–2(–2.3) × 1–1.4 mm 1. *D. himalayensis*
 - 7b. Fruit linear, (0.8–)1–1.7(–2) mm wide; petals 4–5(–5.5) × 1.5–2.5 mm; seeds uniseriate, 0.8–1.1 × 0.5–0.8 mm 3. *D. linearis*

1. *Desideria himalayensis* (Cambessèdes) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 555. 2001.

须弥扇叶芥 xu mi shan ye jie

Cheiranthus himalayensis Cambessèdes in Jacquemont, Voy. Inde 4(Bot.): 14. 1844; *Christolea himalayensis* (Cambessèdes) Jafri; *Ermania himalayensis* (Cambessèdes) O. E. Schulz; *Oreoblastus himalayensis* (Cambessèdes) Suslova.

Plants 4–20 cm tall, subglabrous or densely pilose throughout. Trichomes simple, to 1.5 mm. Stems simple, pilose or glabrous. Basal leaves not fleshy, pilose or glabrous, persistent; petiole 0.4–1.6(–3) cm, not ciliate; leaf blade broadly obovate or spatulate, 4–14 × 3–9 mm, base cuneate or attenuate, margin (3–)5-

toothed, apex acute. Cauline leaves similar to basal, or linear to lanceolate, 5–17 × 1–4 mm, often entire, shortly petiolate or subsessile. Racemes 6–25-flowered, bracteate throughout; bracts similar to cauline leaves but smaller, sometimes adnate to pedicel. Fruiting pedicels ascending, straight or curved, 3–10 mm, pilose or glabrous. Sepals free, oblong, 3–4 × 1.2–1.5 mm, caducous, pilose or with a terminal tuft of trichomes, base not saccate, margin membranous. Petals purple or lilac with yellowish center, broadly spatulate, (6–) 6.5–8 × 3–4 mm, apex submarginate; claw 3–4 mm. Filaments white, slightly dilated at base, median pairs 3–4 mm, lateral pair 2–4 mm; anthers ovate, ca. 0.6 mm. Ovules 14–24 per ovary. Fruit lanceolate to lanceolate-linear, (1.7–)2–3.5(–4) cm × (3–) 4–6 mm, strongly flattened; valves pilose or glabrous, distinctly veined;

septum complete, membranous; style obsolete; stigma 2-lobed. Seeds brown, ovate, (1.5–)1.8–2(–2.3) × 1–1.4 mm, biseriate, minutely reticulate. Fl. Jun–Aug, fr. Jul–Oct.

Alpine tundra, open hills, sandstone scree; 4300–5700 m. Qinghai, Xizang [India, Kashmir, Nepal].

This species was recorded from Xinjiang (Fl. Xinjiang. 2(2): 149. 1995, as *Christolea himalayensis*), but the present authors have seen no material from that autonomous region.

2. *Desideria stewartii* (T. Anderson) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 556. 2001.

少花扇叶芥 shao hua shan ye jie

Cheiranthus stewartii T. Anderson in J. D. Hooker, Fl. Brit. India 1: 132. 1872; *Christolea stewartii* (T. Anderson) Jafri; *Ermania stewartii* (T. Anderson) O. E. Schulz; *Oreoblastus stewartii* (T. Anderson) Suslova.

Plants 8–20 cm tall, densely pilose. Trichomes stalked, forked, rarely some simple near stem base. Stems simple, pilose or glabrous. Basal leaves subfleshy, pilose, persistent; petiole 2–10 mm, not ciliate; leaf blade broadly obovate or spatulate, 2–15 × 2–10 mm, base cuneate or attenuate, margin 3–5-toothed or entire, apex acute. Cauline leaves similar to basal or linear to lanceolate, often entire. Racemes 8–15-flowered, bracteate throughout; bracts similar to cauline leaves but smaller, often adnate to pedicel. Fruiting pedicels ascending, straight or slightly curved, 4–12 mm, pilose. Flowers not seen. Ovules 14–24 per ovary. Fruit lanceolate to lanceolate-linear, 1.7–3.5 cm × 3–5 mm, strongly flattened; valves pilose or glabrous, distinctly veined; septum complete, membranous; style obsolete; stigma 2-lobed. Seeds brown, ovate, 1.4–2.2 × 0.8–1.1 mm, biseriate, minutely reticulate. Fr. Aug.

Scree slopes; 4100–5300. Xizang [India, Kashmir].

3. *Desideria linearis* (N. Busch) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 556. 2001.

线果扇叶芥 xian guo shan ye jie

Christolea linearis N. Busch in Komarov, Fl. URSS 8: 636. 1939; *C. parkeri* (O. E. Schulz) Jafri; *Ermania kachrooi* Dar & Naqshi; *E. kashmiriana* Dar & Naqshi; *E. linearis* (N. Busch) Botschantzev; *E. parkeri* O. E. Schulz; *Oreoblastus linearis* (N. Busch) Suslova; *O. parkeri* (O. E. Schulz) Suslova.

Plants 4–15 cm tall, densely pilose throughout or subglabrous. Trichomes simple, to 1.5 mm. Stems simple, pilose or glabrous. Basal leaves not fleshy, pilose or glabrous, persistent; petiole 2–7(–12) mm, not ciliate; leaf blade broadly obovate or spatulate, 4–15 × 2–12 mm, base cuneate or attenuate, margin 3–5-toothed or rarely entire, apex acute. Cauline leaves similar to basal or linear to lanceolate, 5–10 × 1–3 mm, often entire, shortly petiolate or sessile. Racemes 8–20-flowered, bracteate throughout; bracts similar to cauline leaves but smaller, often adnate to pedicel. Fruiting pedicels ascending, straight, 2–8(–12) mm,

pilose or glabrous. Sepals free, oblong or ovate, 2–3 × 1–1.5 mm, caducous, pilose or with a terminal tuft of trichomes, base not saccate, margin membranous. Petals purple or lavender with paler base, narrowly spatulate, 4–5(–5.5) × 1.5–2.5 mm, apex rounded; claw 2–2.5 mm. Filaments white, slightly dilated at base, median pairs 2.5–3.5 mm, lateral pair 1.8–2.5 mm; anthers ovate, 0.4–0.5 mm. Ovules 16–26 per ovary. Fruit linear, (1.5–)2–3.5(–4.2) cm × (0.8–)1–1.7(–2) mm, flattened; valves pilose or glabrous, distinctly veined; septum complete, membranous; style obsolete; stigma 2-lobed. Seeds brown, ovate, 0.8–1.1 × 0.5–0.8 mm, uniseriate, minutely reticulate. Fl. Jun–Aug, fr. Jul–Sep.

Gravelly or sandy slopes, scree, gravelly moraine below glaciers; 3200–6200 m. Xinjiang [Kashmir, Nepal, Tajikistan].

4. *Desideria flabellata* (Regel) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 558. 2001.

长毛扇叶芥 chang mao shan ye jie

Parrya flabellata Regel, Bull. Soc. Imp. Naturalistes Moscou 43: 261. 1870; *Christolea flabellata* (Regel) N. Busch; *C. pinatifida* R. F. Huang; *Ermania flabellata* (Regel) O. E. Schulz; *Oreoblastus flabellatus* (Regel) Suslova.

Plants 4–15 cm tall. Trichomes simple, straight, to 1.5 mm. Stems distinct, simple, densely pilose. Basal leaves subfleshy; petiole 2–7 mm, pilose; leaf blade flabellate or broadly obovate, rarely spatulate, 0.6–2.5 × 0.3–2.5 cm, pilose, base cuneate or attenuate, margin (3–)5–9(–11)-toothed, rarely lowermost leaves entire, apex acute; teeth to 10 × 3 mm. Cauline leaves similar to basal. Racemes 7–12-flowered, ebracteate. Fruiting pedicels ascending, straight or curved, (0.5–)0.7–1.5 (–2.5) mm, spreading pilose. Sepals free, narrowly oblong, 5–8 × 1.5–2.5 mm, often persistent, pilose, base not saccate, margin membranous. Petals purple, broadly spatulate, 1.1–1.5 cm × 3.5–6 mm, apex subemarginate; claw 7–9 mm. Filaments white or mauve, slightly dilated at base, median pairs 4.5–6 mm, lateral pair 3–4 mm; anthers oblong, 0.9–1.3 mm. Ovules 14–24 per ovary. Fruit lanceolate to lanceolate-linear, (1.7–)2.5–3.5 (–4.5) cm × 2.5–5 mm, strongly flattened; valves pilose, distinctly veined; septum complete, membranous; style obsolete; stigma 2-lobed. Seeds brown, ovate, 1.3–2 × 0.9–1.2 mm, uniseriate, minutely reticulate. Fl. Jul–Aug, fr. Jul–Sep.

Alpine gravelly slopes, moraine slopes; 3300–5100 m. Xinjiang [Afghanistan, Kyrgyzstan, Tajikistan].

5. *Desideria prolifera* (Maximowicz) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 559. 2001.

丛生扇叶芥 cong sheng shan ye jie

Parrya prolifera Maximowicz, Fl. Tangut. 56. 1889; *Christolea prolifera* (Maximowicz) Ovczinnikov; *Ermania prolifera* (Maximowicz) O. E. Schulz; *Oreoblastus prolifera* (Maximowicz) Suslova.

Plants scapose, villous or pilose. Trichomes simple, straight, to 1.5 mm. Stems absent. Basal leaves subfleshy; petiole (0.2–)0.8–2(–3) cm, persistent, sparsely to densely pilose or villous, ciliate, somewhat papery at base; leaf blade broadly ovate, suborbicular, obovate, or spatulate, 2–10(–15) × 2–9 (–12) mm, villous or pilose, base obtuse or cuneate, margin (3–) 5–9-toothed, rarely subentire, apex subacute. Cauline leaves absent. Flowers solitary from basal rosette. Fruiting pedicels ascending-divaricate, straight, (0.2–)0.5–1.5(–2.5) cm, villous. Sepals free, oblong, 6–7 × 2–2.5 mm, usually persistent, pilose, base not saccate, margin membranous. Petals purplish green, broadly obovate, 1.1–1.4 cm × 4–5 mm, apex submarginate; claw 6–7 mm. Filaments white, dilated at base, toothless, median pairs 4–6 mm, lateral pair 3–4 mm; anthers 1.2–1.6 mm. Fruit linear to linear-lanceolate, (2.5–)4–6.5(–7.2) cm × (3–)4–5 mm, flattened, sessile, straight; valves obscurely veined; replum and valves pilose or villous; septum complete; style obsolete; stigma capitate, 2-lobed. Seeds oblong, 2.5–3.5 × 1.4–1.7 mm. Fl. Jul–Aug, fr. Jul–Sep.

• Scree slopes, siliceous schist; 4700–5900 m. Qinghai, Xizang.

6. *Desideria pumila* (Kurz) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 560. 2001.

矮扇叶芥 ai shan ye jie

Parrya pumila Kurz, Flora 55: 285. 1872; *Christolea pumila* (Kurz) Jafri; *Ermania bifaria* Botschantzev; *E. koelzii* O. E. Schulz; *Solms-laubachia pumila* (Kurz) Dvorák; *Vvedenskyella pumila* (Kurz) Botschantzev.

Plants scapose, pilose or tomentose. Trichomes simple, straight, to 0.5 mm, mixed on leaves with short-stalked, forked ones. Stems absent. Basal leaves fleshy; petiole 2–10 mm, persistent, densely pilose with simple trichomes, ciliate, expanded and papery at base; leaf blade broadly ovate, suborbicular, obovate, or spatulate, 2–14 × 1–11 mm, densely tomentose or pilose, base obtuse, margin 3–7-toothed or repand, apex obtuse. Cauline leaves absent. Flowers solitary from basal rosette. Fruiting pedicels ascending-divaricate, straight, 3–10 mm, pilose. Sepals free, oblong, 3–4 × 1.5–2 mm, caducous, pilose, base not saccate, margin membranous. Petals creamy white or purplish green, broadly obovate, 6–8 × 3–4.5 mm, apex submarginate; claw 3–4 mm. Filaments white, dilated at base, toothless, median pairs 3–4 mm, lateral pair 2–2.5 mm; anthers narrowly oblong, 0.9–1.2 mm. Ovules ca. 14 per ovary. Immature fruit oblong-linear or linear-lanceolate, 1–2 cm × 2–3 mm, flattened, sessile, straight, retrorsely pilose along replum; valves glabrous; septum complete; style obsolete; stigma capitate, 2-lobed. Seeds not seen. Fl. Jun–Jul.

Limestone, mica schist; 4200–5700 m. Xinjiang, Xizang [Kashmir].

7. *Desideria baiogoinensis* (K. C. Kuan & Z. X. An) Al-Shehbaz, Ann. Missouri Bot. Gard. 87: 561. 2001.

藏北扇叶芥 zang bei shan ye jie

Christolea baiogoinensis K. C. Kuan & Z. X. An in C. Y. Wu, Fl. Xizang, 2: 388. 1985.

Plants scapose, villous. Trichomes simple and short-stalked, forked, straight, to 1 mm. Stems absent. Basal leaves subfleshy; petiole 0.4–1.6 cm, persistent, villous, ciliate, somewhat papery at base; leaf blade broadly ovate, suborbicular, or obovate, 4–8 × 3–6 mm, villous, base obtuse or cuneate, margin 3–7-toothed, apex acute. Cauline leaves absent. Flowers solitary from basal rosette. Fruiting pedicels ascending-divaricate, straight, 0.5–2 cm, villous. Sepals free, oblong, 4–6 × 1.5–2.5 mm, usually persistent, pilose, base not saccate, margin membranous. Petals purplish, broadly obovate, 7–1.2 cm × 3.5–4.5 mm, apex submarginate; claw 4–6 mm. Filaments white, dilated at base, toothless, median pairs 3.5–5 mm, lateral pair 2–2.5 mm; anthers 1–1.2 mm. Ovules 30–40 per ovary. Fruit ovate or lanceolate, 1–2.5 cm × 6–9 mm, flattened, sessile, straight; valves prominently reticulate veined; replum and valves villous; septum complete; style 0.5–1 mm; stigma capitate, 2-lobed. Seeds oblong, 1.5–2 × 0.8–1.1 mm. Fl. Jun–Jul, fr. Jul–Aug.

• Open sand and gravel; 4700–5600 m. Qinghai, Xizang.

8. *Desideria mirabilis* Pampanini, Boll. Soc. Bot. Ital. 1926: 111. 1926.

扇叶芥 shan ye jie

Christolea karakorumsensis Y. H. Wu & Z. X. An; *C. mirabilis* (Pampanini) Jafri; *C. scaposa* Jafri; *C. suslovaiana* Jafri; *Desideria pamirica* Suslova.

Plants 2–10 cm tall. Trichomes simple, to 1.5 mm, rarely mixed with forked ones. Stems simple, densely pilose. Basal leaves subfleshy; petiole 3–15 mm, densely pilose, not expanded or papery at base; leaf blade flabellate or spatulate-orbicular, (2–)5–15 × 3–9(–15) mm, pilose, base cuneate, margin 8–10-toothed, apex acute; teeth to 8 mm. Cauline leaves similar to basal. Racemes 8–20-flowered, ebracteate. Fruiting pedicels ascending, straight or curved, 5–10 mm, spreading pilose. Sepals united, (2.5–)3.5–5.5 × 1.5–2.5(–3) mm, persistent, densely pilose, base not saccate; calyx lobes ovate, unequal, 0.5–2 mm, margin membranous. Petals purple or purplish green with yellowish base, obovate, 5–8 × (1.5–)2.5–3 mm, apex obtuse; claw 2.5–4 mm. Filaments white, slightly dilated at base, median pairs (3–)4–5 mm, lateral pair (2–)2.5–3.5 mm; anthers oblong, 0.5–0.8 mm. Ovules 12–18 per ovary. Fruit linear, 1–2(–3) cm × ca. 2 mm, slightly flattened or subterete; valves pilose, distinctly veined; septum perforate or reduced to a narrow rim,

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membranous; style obsolete to 0.7 mm; stigma 2-lobed.
Seeds oblong, 1.5–1.8 × 0.8–1 mm, papillate. Fl. Jul–
Aug, fr. Aug–Sep.
Gravelly slopes; 4000–5000 m. Xinjiang [Kashmir, Tajikistan].

