

### 3. ALETRIS Linnaeus, Sp. Pl. 1: 319. 1753.

粉条儿菜属 *fen tiao er cai shu*

Liang Songyun (梁松筠 Liang Song-jun); Nicholas J. Turland<sup>1</sup>

*Stachyopogon* Klotzsch.

Herbs perennial. Indumentum (if present) usually glandular. Roots usually fibrous, sometimes thickened and fleshy, or a mixture of both. Rhizome short, rarely cormlike. Leaves basal, tufted, grasslike, lanceolate to linear, with a conspicuous midvein. Scape simple, erect, usually with a few small, bractlike leaves. Inflorescence a terminal raceme, densely capitate or shortly cylindrical to laxly elongate, sometimes viscid; rachis pubescent, puberulent, or glabrous. Flowers bisexual, small, distinctly pedicellate or sessile. Pedicel bearing a bract and bracteole toward either base or apex, pubescent, puberulent, or glabrous; bracteole similar to bract but smaller. Perianth 6-lobed distally, pubescent, puberulent, or glabrous; tube proximally adnate to ovary; lobes erect, spreading, recurved, or revolute. Stamens 6; filaments short; anthers basifixed. Ovary semi-inferior, 3-loculed; ovules many per locule. Style simple, sometimes indistinct; stigma obscurely 3-lobed. Fruit a loculicidal capsule enveloped by persistent perianth, terminating in persistent style and stigma. Seeds numerous, brown, fusiform, to 1.5 mm.

Twenty-one species: Bhutan, China, India, Indonesia, Japan, Kashmir, Korea, Malaysia, Myanmar, Nepal, Philippines, Sikkim; E North America; 15 species (nine endemic) in China.

In measurements given in this account, the scape includes the raceme, the flower includes the pedicel, and the capsule includes the persistent style and stigma.

- 1a. Perianth pubescent, sometimes sparsely or minutely so.
  - 2a. Leaves 1–1.5 cm wide; perianth 7–10 mm ..... 15. *A. megalantha*
  - 2b. Leaves less than 1 cm wide; perianth less than 7 mm.
    - 3a. Bracts 2–5 × flower length ..... 14. *A. glandulifera*
    - 3b. Bracts shorter than or subequaling flower length, sometimes a few bracts near base of raceme to 2 × flower length.
      - 4a. Flowers usually sessile, pedicels absent to 1(–2) mm, bract and bracteole borne on distal 1/2 of pedicel (often near apex); perianth lobes linear-lanceolate or narrowly oblong-lanceolate to linear; capsule turbinate, oblong-obovoid, obovoid, or ovoid.
        - 5a. Capsule turbinate, oblong-obovoid, or obovoid, distinctly angular, 3–5 × 2–3 mm, abruptly contracted distally when dehiscent; leaves 2–4(–5) mm wide ..... 2. *A. spicata*
        - 5b. Capsule ovoid, not angular, 4–6 × 3–4.5 mm, not or only slightly contracted distally when dehiscent; leaves (2–)3–5(–8) mm wide ..... 3. *A. stenoloba*
      - 4b. Flowers distinctly pedicellate, pedicels 0.5–3.5 mm, bract and bracteole borne on proximal 1/2 of pedicel (often near base); perianth lobes ovate to lanceolate; capsule subglobose.
        - 6a. Leaves 1–5, laxly tufted; rhizome cormlike, 3–7 mm in diam. .... 13. *A. scopulorum*
        - 6b. Leaves numerous, densely tufted; rhizome not cormlike.
          - 7a. Perianth lobes oblong-lanceolate, 2–3 mm ..... 11. *A. pedicellata*
          - 7b. Perianth lobes ovate, ca. 1 mm ..... 12. *A. yaanica*
  - 1b. Perianth glabrous, rarely papillose.
    - 8a. Raceme rachis and pedicels glabrous; bract and bracteole borne on proximal 1/2 of pedicel (often near base).
      - 9a. Raceme covered with viscid secretion; perianth tube urceolate, strongly constricted at apex, lobes erect ..... 1. *A. glabra*
      - 9b. Raceme not covered with viscid secretion; perianth tube broadly funnelform, lobes strongly recurved or revolute.
        - 10b. Rhizome surrounded by mass of fibers from disintegrated leaf bases; capsule with persistent stigma conspicuously thickened and capitate ..... 5. *A. gracilis*
        - 10a. Rhizome not surrounded by mass of fibers but sometimes by persistent, dead leaves; capsule with persistent stigma not or only slightly thickened ..... 6. *A. cinerascens*
    - 8b. Raceme rachis and pedicels pubescent or puberulent; bract and bracteole usually borne on distal 1/2 of pedicel (often near apex).
      - 11a. Rhizome often surrounded by mass of fibers from disintegrated leaf bases; roots thickened, fleshy; leaves usually rather few (5–10) and laxly tufted; capsule ovoid-ellipsoid or ovoid-conical ..... 7. *A. pauciflora*
      - 11b. Rhizome not surrounded by mass of fibers; roots fibrous; leaves numerous and densely tufted; capsule narrowly ovoid to subglobose.
        - 12a. Raceme densely capitate or oblong-capitate; bract and bracteole borne on proximal 1/2 of pedicel

<sup>1</sup> Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.

- (often near base) ..... 8. *A. capitata*  
 12b. Raceme elongate and lax to short and dense but not capitate; bract and bracteole usually borne at or near apex of pedicel.  
 13a. Perianth 4–7.5 mm, lobes 2–5.5 mm, erect, spreading, recurved, or revolute, 1–5 × tube length ..... 4. *A. laxiflora*  
 13b. Perianth 3–4.5 mm, lobes 1–2 mm, erect or recurved, 0.3–1 × tube length.  
 14a. Scape very slender, wiry, often somewhat flexuous, 7–20 cm; bract shorter than perianth; perianth often densely papillose, lobes recurved ..... 10. *A. alpestris*  
 14b. Scape relatively stout, not wiry, straight and erect, 1.5–10 cm; bract equaling or longer than perianth; perianth not or scarcely papillose, lobes erect or slightly recurved ..... 9. *A. nana*

**1. *Aletris glabra*** Bureau & Franchet, J. Bot. (Morot) 5: 156. 1891.

无毛粉条儿菜 wu mao fen tiao er cai

*Aletris dickinsii* Franchet; *A. foliata* (Maximowicz) Bureau & Franchet var. *glabra* (Bureau & Franchet) Yamamoto; *A. foliata* var. *sikkimensis* (J. D. Hooker) Franchet; *A. formosana* (Hayata) Sasaki; *A. sikkimensis* J. D. Hooker; ?*A. tavelii* H. Léveillé; *Metanartheceum formosanum* Hayata.

Plants glabrous throughout. Rhizome stout. Leaves usually rather few (4–10) and laxly tufted, sometimes more numerous and dense, linear-lanceolate to linear, 5–30 cm × 5–18 mm. Scape 15–100 cm. Raceme 7–45 cm, covered with viscid secretion (to which dust, fibers, seeds, etc. adhere), laxly to densely 15–120-flowered. Flowers subsessile to distinctly pedicellate; pedicel 0.5–3(–4.5) mm; bract borne at or near base of pedicel, linear-lanceolate, 2–16 mm, slightly shorter than flower to 2.5 × flower length, apex obtuse; bracteole borne on proximal 1/2 of pedicel above bract. Perianth yellowish green or cream (with green or greenish brown midvein on lobes), 3–6 mm, sometimes sparsely papillose; tube urceolate, abruptly constricted at apex; lobes erect, oblong-lanceolate or narrowly so, 1.5–3 × 0.5–1 mm, 0.6–1 × tube length, apex obtuse. Capsule obovoid to subglobose, angular or ± so, 4–6 × 3–4.5 mm, apex of valves gradually narrowed; style to 0.7 mm; stigma not or only slightly thickened. Fl. May–Aug, fr. Aug–Nov.  $2n = 26$ .

*Abies*, *Pinus*, and *Quercus* forests, thickets, moist meadows, flood lands, alpine grasslands, rocky slopes; 1200–4000 m. Fujian, Gansu, Guizhou, Hubei, Jiangxi, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, Sikkim].

*Aletris glabra* is very similar to, and overlaps morphologically with, the Japanese *A. foliata* (Maximowicz) Bureau & Franchet (J. Bot. (Morot) 5: 156. 1891). The latter species tends to have a larger perianth (5–7 mm), with lobes 0.75–1.2 × tube length, and capsule ovoid to obovoid-subglobose. If the two were considered synonymous, the name *A. foliata* would have priority because it is based on *Metanartheceum foliatum* Maximowicz (in Trautvetter et al., Decas Pl. Nov. 10. 1882). In making their new combination in *Aletris*, Bureau and Franchet misspelled the names as “*A. foliosa*” and “*M. foliosum*,” respectively, and were followed by several other authors. *Aletris fauriei* H. Léveillé & Vaniot (in H. Léveillé, Repert. Spec. Nov. Regni Veg. 5: 283. 1908), described from Korea, seems slightly closer to *A. foliata* than to *A. glabra* judging from the only specimens seen by the present authors (the type collection).

**2. *Aletris spicata*** (Thunberg) Franchet, J. Bot. (Morot) 10: 199. 1896.

粉条儿菜 fen tiao er cai

*Hypoxis spicata* Thunberg in Murray, Syst. Veg., ed. 14, 326. 1784; *Aletris japonica* Lambert (1811), nom. illeg. (including *Hypoxis spicata*), not Houttuyn (1780) nor Thunberg (1780); *A. spicata* var. *micrantha* Satake.

Leaves numerous, densely tufted, linear, 5–30 cm × 2–4 (–5) mm. Scape 15–70 cm. Raceme 5–35 cm, laxly 10–80-flowered; rachis densely pubescent. Flowers subsessile; pedicel absent to 1(–2) mm, densely pubescent; bract and bracteole borne on distal part of pedicel, linear-lanceolate, proximally pubescent; bract 4–8 mm, shorter than or equaling flower (sometimes a few bracts at base of raceme to 2 × flower length, rarely all bracts exceeding flowers), apex acute. Perianth white, yellowish white, or yellowish green, sometimes striped or apically tinged pink, 4–7 mm, densely pubescent, rarely sparsely so; tube oblong-urceolate; lobes ± erect, linear-lanceolate, 1.5–3 × ca. 0.5 mm, usually ca. 1 × tube length or shorter, apex acute. Capsule turbinate, obovoid, or oblong-obovoid, distinctly angular, 3–5 × 2–3 mm, abruptly constricted distally when dehiscent, apex of valves ± gradually narrowed; style ca. 1 mm; stigma not or only slightly thickened. Fl. Mar–Aug, Nov, fr. May–Aug.  $2n = 26, 52^*$ .

Forests, thicket margins, scrub, grasslands, streamsides, roadsides; 100–2900 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan (including Ryukyu Islands), ?N Malaysia, Philippines (Luzon)].

**3. *Aletris stenoloba*** Franchet, J. Bot. (Morot) 10: 203. 1896.

狭瓣粉条儿菜 xia ban fen tiao er cai

*Aletris longibracteata* T. L. Xu; *A. spicata* (Thunberg) Franchet var. *fargesii* Franchet.

Leaves numerous, densely tufted, linear, 5–35 cm × (2–)3–5(–8) mm. Scape 25–80 cm. Raceme 5–35 cm, laxly 10–60-flowered; rachis pubescent. Flowers subsessile; pedicel absent to 1(–2) mm, pubescent; bract and bracteole borne on distal part of pedicel, linear-lanceolate, proximally pubescent; bract 4–8 (–11) mm, shorter than or equaling flower (sometimes a few bracts at base of raceme to 2 × flower length), apex acute. Perianth white or pale yellow, sometimes apically tinged pink, 4–7 mm, sparsely pubescent, rarely densely so; tube urceolate; lobes ± erect, narrowly oblong lanceolate to linear, 2.5–4 × 0.5–1 mm, usually ca. 1 × tube length or longer, apex obtuse to acute. Capsule ovoid, not angular, 4–6 × 3–4.5 mm, not or only slightly constricted distally when dehiscent, apex of valves abruptly narrowed; style 1–2 mm; stigma not or only slightly thickened. Fl. Mar–Jul, fr. May–Sep.

• Forests, *Pinus* plantations, pastures, grassy slopes, hillsides, streamsides, wet hollows, moist shaded cliffs; 300–3300 m. Gansu, Guangdong, Guangxi, Guizhou, Hubei, Shaanxi, Sichuan, Yunnan.

*Aletris stenoloba* is very similar to *A. spicata*, and the two species may easily be confused in the absence of fruiting material; the capsule shape is the most reliable distinguishing character. Fruiting material of *A. stenoloba* and *A. laxiflora* may also be confused, although the latter differs in its glabrous perianth with lobes  $1-5 \times$  tube length.

**4. *Aletris laxiflora*** Bureau & Franchet, J. Bot. (Morot) 5: 155. 1891.

疏花粉条儿菜 shu hua fen tiao er cai

*Aletris elata* F. T. Wang & Tang; *A. gracilipes* F. T. Wang & Tang; *A. revoluta* Franchet; *Mondo cavaleriei* (H. Léveillé) Farwell; *Ophiopogon cavaleriei* H. Léveillé.

Leaves numerous, densely tufted, linear, 3–25(–35) cm  $\times$  1.5–6(–10) mm. Scape 10–70 cm. Raceme 2–30 cm, somewhat densely to very laxly 4–60-flowered; rachis pubescent or puberulent. Flowers subsessile to distinctly pedicellate; pedicel 0.5–6(–10) mm, pubescent or puberulent; bract and bracteole usually borne at or near apex of pedicel (rarely at middle or base); bract lanceolate to narrowly so, 3–12 mm, shorter than flower (sometimes a few bracts at base of raceme to  $2 \times$  flower length), glabrous, apex acute. Perianth white to pink, 4–7.5 mm, glabrous (but sometimes slightly puberulent at base of tube); tube very short, broadly funnelform; lobes erect, spreading, recurved, or revolute, narrowly oblong or narrowly lanceolate,  $2-5.5 \times 0.8-1.5$  mm,  $1-5 \times$  tube length, apex obtuse to acute. Capsule narrowly ovoid to subglobose,  $4-8 \times 2-4$  mm, apex of valves abruptly narrowed; style 1–3 mm; stigma thickened or not. Fl. Mar–Aug, fr. Apr–Aug.

• Forests, river banks, stream beds, rocks; 1100–2900 m. Guizhou, Sichuan, E Xizang (Bomi Xian).

Typical *Aletris laxiflora* from C Sichuan and E Xizang has short, usually erect perianth lobes, while plants from C and E Sichuan and Guizhou have longer, often recurved or revolute perianth lobes, and have been called *A. revoluta*. Intermediate plants occur where the two entities overlap in C Sichuan. All are here regarded as a single, variable species. The type of *A. gracilipes*, from C Sichuan, also belongs here and not under *A. stelliflora* (i.e., *A. gracilis*) as given in FRPS; it is unusual in having 6–10 mm long pedicels with a basal bract and bracteole.

**5. *Aletris gracilis*** Rendle, J. Bot. 44: 41. 1906.

星花粉条儿菜 xing hua fen tiao er cai

*Aletris stelliflora* Handel-Mazzetti.

Plant glabrous throughout. Rhizome surrounded by a dense collar of persistent fibers from disintegrated leaf bases. Leaves 5 to numerous, usually laxly tufted, linear, 2–20 cm  $\times$  2–7(–9) mm. Scape 7–40 cm. Raceme 2–15 cm, not covered with viscid secretion, laxly 5–40-flowered. Flowers distinctly pedicellate; pedicel 1–10 mm; bract borne at or near base of pedicel, narrowly lanceolate, 3–9(–16) mm, shorter than flower (rarely a few bracts at base of raceme slightly longer than flower), apex obtuse to subacute; bracteole borne on proximal 1/2 of pedicel above bract. Perianth yellowish, whitish, or pinkish, 4–5 mm; tube broadly funnelform; lobes strongly recurved

or revolute, narrowly oblong or oblong,  $2-3 \times$  ca. 1 mm,  $1.5-2 \times$  tube length, apex obtuse to rounded or truncate. Capsule narrowly ovoid,  $4.5-7 \times 2.5-3.5$  mm, apex of valves abruptly narrowed; style 0.5–2 mm; stigma conspicuously thickened, capitate. Fl. Jul–Sep, fr. Sep–Oct.

Alpine swamps, alpine grasslands, bamboo thickets, thicket margins, grassy cliffs, rocks; 2500–3900 m. SE Xizang, NW Yunnan [Bhutan, NE India, N Myanmar, Sikkim].

The type of *Aletris gracilis* corresponds with *A. stelliflora*, not *A. laxiflora* as given in FRPS, so the name *A. gracilis* has priority over *A. stelliflora*, which was described in 1936. *Aletris gracilis* is easily distinguished from *A. laxiflora* by its completely glabrous raceme rachis and pedicels.

**6. *Aletris cinerascens*** F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 254. 1978.

灰鞘粉条儿菜 hui qiao fen tiao er cai

Plants glabrous throughout. Rhizome not surrounded by a dense collar of fibers but sometimes by persistent, dead leaves. Leaves somewhat numerous, densely tufted, linear-lanceolate, 4–13 cm  $\times$  3–12.5 mm. Scape 8–35 cm. Raceme 2.5–19 cm, not covered with viscid secretion, laxly 10–23(or more)-flowered. Flowers distinctly pedicellate; pedicel 1–10 mm; bract borne at or near base of pedicel (sheathing, so sometimes appearing apical on very short pedicels), lanceolate, 3–7 mm, shorter than flower, apex obtuse; bracteole borne on proximal 1/2 of pedicel above bract. Perianth yellowish,  $4-6 \times 2-2.5$  mm; tube very short, broadly funnelform; lobes strongly recurved or revolute, narrowly lanceolate,  $3-4.5 \times 1-1.5$  mm, ca.  $3 \times$  tube length, apex obtuse. Capsule oblong-ovoid or  $\pm$  ellipsoid,  $5-7 \times 3-3.5$  mm, apex of valves abruptly narrowed; style 1.5–2.5 mm; stigma not or only slightly thickened. Fl. and fr. Jun–Nov.

• Grassy hilltops, dry slopes, forests; 2700–3100 m. Guangxi, WC Yunnan (Jingdong Xian).

**7. *Aletris pauciflora*** (Klotzsch) Handel-Mazzetti, Symb. Sin. 7: 1220. 1936.

少花粉条儿菜 shao hua fen tiao er cai

Roots thickened, fleshy. Rhizome stout, sometimes clump-forming, often surrounded by a dense collar of persistent fibers from disintegrated leaf bases. Leaves usually rather few (5–10) and laxly tufted, sometimes more numerous and dense, linear-lanceolate to linear, 3–25 cm  $\times$  1–10 mm. Scape 3.5–40 cm. Raceme 1–20 cm, densely to laxly 4–40-flowered, rachis pubescent. Flowers distinctly pedicellate; pedicel 1–12 mm, pubescent; bract and bracteole borne at or near apex of pedicel; bract lanceolate to narrowly linear-lanceolate, 3–20 mm,  $1-4 \times$  flower length, glabrous, apex obtuse to rounded. Perianth dark red, red, pink, orange, yellow, greenish yellow, or white, 3.5–6 mm, glabrous; tube campanulate; lobes usually recurved, sometimes erect, oblong-ovate to lanceolate,  $1.5-2.5 \times 0.8-1.5$  mm,  $0.6-1 \times$  tube length, apex obtuse to rounded. Capsule ovoid-ellipsoid or ovoid-conical,  $4-6 \times 2.5-4$  mm, apex of valves gradually narrowed; style to 0.5 mm; stigma thickened. Fl. Apr–Aug, fr. Jun–Oct.

Mixed, coniferous, and broad-leaved forests, scrub, bamboo scrub,

swamps, marshes, bogs, stream banks, wet flushes, damp meadows, grassy alpine slopes, open stony pastures, exposed ridges, river gravels, moraines, rocks; 1500–4900 m. Sichuan, Xizang, Yunnan [Bhutan, India, Kashmir, N Myanmar, Nepal, Sikkim].

Two varieties may be recognized, although intermediate plants and mixed collections occur. In FRPS, they were distinguished, in addition to bract length, by having racemes laxly flowered (var. *pauciflora*) or densely flowered (var.  *khasiana*). However, raceme density seems to indicate the developmental stage of the inflorescence (i.e., denser is younger) rather than correlate with bract length.

- 1a. Bract obviously longer than flower, to  
4 × flower length ..... 7a. var. *pauciflora*
- 1b. Bract subequaling flower ..... 7b. var.  *khasiana*

**7a. *Aletris pauciflora* var. *pauciflora***

少花粉条儿菜(原变种) shao hua fen tiao er cai (yuan bian zhong)

*Stachyopogon pauciflorus* Klotzsch in Klotzsch & Garcke, Bot. Ergebn. Reise Waldemar, 49. 1862; *Aletris mairei* H. Léveillé; *A. nepalensis* J. D. Hooker, nom. illeg. (included *S. pauciflorus* and *S. spicatus* Klotzsch); *A. nepalensis* var. *delavayi* Franchet; *A. pauciflora* f. *minuscula* Handel-Mazzetti.

Bract obviously longer than flower, to 4 × flower length.

Grassy alpine slopes; 3400–4100 m. Sichuan, Xizang, Yunnan [Bhutan, India, Kashmir, N Myanmar, Nepal, Sikkim].

**7b. *Aletris pauciflora* var.  *khasiana* (J. D. Hooker) F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 172. 1978.**

穗花粉条儿菜 sui hua fen tiao er cai

*Aletris khasiana* J. D. Hooker, Fl. Brit. India 6: 265. 1892; *A. lanuginosa* Bureau & Franchet; *A. lanuginosa* var.  *khasiana* (J. D. Hooker) Franchet; *Stachyopogon spicatus* Klotzsch.

Bract subequaling flower.

Forests, bamboo scrub, swamps, shady rocks; 1500–4900 m. Sichuan, Xizang, Yunnan [NE India].

**8. *Aletris capitata* F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 254. 1978.**

头花粉条儿菜 tou hua fen tiao er cai

Leaves numerous, densely tufted, linear, 2–15 cm × 1–3 mm. Scape 10–35 cm. Raceme capitate or oblong-capitate, 0.5–1.5 cm, densely 7–11-flowered; rachis pubescent. Flowers distinctly pedicellate; pedicel 0.5–3 mm, pubescent; bract and bracteole borne on proximal 1/2 of pedicel, often near base, lanceolate; bract 2.5–5 mm, slightly shorter than flower, glabrous, apex obtuse to subacute. Perianth white, 4–5 mm, glabrous; tube campanulate; lobes spreading or recurved, oblong, 2–4 × ca. 1 mm, 1–1.5 × tube length, apex obtuse-rounded. Capsule ovoid, 3.5–4 × ca. 2.5 mm, apex of valves gradually narrowed; style ca. 1 mm; stigma slightly thickened. Fl. Jun, fr. Aug.

• Shady rocks, grasslands, forests; 2400–3500 m. C Sichuan (Baoping Xian, Tianquan Xian).

**9. *Aletris nana* S. C. Chen, Acta Phytotax. Sin. 19: 503. 1981.**

矮粉条儿菜 ai fen tiao er cai

*Aletris alpestris* Diels var. *occidentalis* H. Hara.

Leaves numerous, densely tufted, linear, 1–3.5 cm × 1–4 mm. Scape somewhat stout, not wiry, straight and erect, 1.5–10 cm. Raceme 0.5–3.5 cm, densely or somewhat laxly 3–14-flowered, becoming lax in fruit; rachis pubescent or puberulent. Flowers distinctly pedicellate; pedicel 1–4 mm, pubescent or puberulent; bract and bracteole borne at or near apex of pedicel; bract lanceolate, 2–6 mm, equaling or exceeding flower, glabrous, apex acute. Perianth white or pinkish white, 3–4 mm, glabrous, not or scarcely papillose; tube broadly funnelform; lobes erect or slightly recurved, triangular-ovate to lanceolate, 1–1.5 × 0.7–1 mm, 0.3–0.45 × tube length, apex obtuse. Capsule subglobose, 2.5–3 mm, apex of valves ± abruptly narrowed; style ca. 0.4 mm; stigma not or only slightly thickened. Fl. May–Jun, fr. Aug–Sep.

Wet grassy meadows, swamps, damp rock crevices, in moss, among boulders; 3200–4600 m. S Xizang, NW Yunnan (Yulongxue Shan) [Nepal].

Type material of *Aletris alpestris* var. *occidentalis*, described by Hara (J. Jap. Bot. 47: 276. 1972) from Nepal and Xizang, corresponds with *A. nana*.

**10. *Aletris alpestris* Diels, Bot. Jahrb. Syst. 36(Heft 5, No. 82): 20. 1905.**

高山粉条儿菜 gao shan fen tiao er cai

*Aletris dielsii* F. T. Wang & Tang.

Leaves numerous, densely tufted, linear, 1.5–8 cm × 2–4 mm. Scape very slender, wiry, often somewhat flexuous, 7–20 cm. Raceme 1–4 cm, laxly 4–10-flowered; rachis puberulent. Flowers distinctly pedicellate; pedicel 2–4 mm, puberulent; bract and bracteole borne at or near apex of pedicel; bract lanceolate, 1.5–4 mm, shorter than flower, glabrous, apex acute. Perianth white or pinkish white, 3.5–4.5 mm, glabrous but often densely papillose; tube cupular or campanulate; lobes recurved, lanceolate, 1.5–2 × 0.5–1 mm, 0.6–1 × tube length, apex of valves obtuse to acute. Capsule ovoid-globose, ca. 3 × 2.5 mm, apex abruptly narrowed; style ca. 0.3 mm; stigma not or only slightly thickened. Fl. Apr–Jul, fr. Aug–Sep.

• Cliffs, rocks in forests; 800–3900 m. Guizhou, Shaanxi, Sichuan, NE Yunnan (Yiliang Xian).

**11. *Aletris pedicellata* F. T. Wang & Tang, Bull. Fan Mem. Inst. Biol., n.s., 1: 109. 1943.**

长柄粉条儿菜 chang bing fen tiao er cai

Leaves numerous, densely tufted, linear-lanceolate to linear, 2–8 cm × 1.5–5 mm. Scape 7–30 cm. Raceme 2–12 cm, somewhat laxly 8–45-flowered; rachis pubescent. Flowers distinctly pedicellate; pedicel 1.5–7 mm, pubescent; bract and bracteole borne on proximal 1/2 of pedicel; bract linear-lanceolate, 2–7 mm, shorter than flower, pubescent at least proximally, apex acute. Perianth white or pink, 3–6 mm, pubescent; tube cupular; lobes ± erect, oblong-lanceolate, 2–3 × 0.5–0.8 mm, ca. 1 × tube length, apex obtuse. Capsule subglobose, 2–3.5 × 2–3 mm, apex of valves abruptly narrowed; style ca. 0.5

mm; stigma not or only slightly thickened. Fl. and fr. May–Jun.

- About 800 m. Sichuan.

**12. *Aletris yaanica*** G. H. Yang, Acta Phytotax. Sin. 25: 237. 1987.

雅安粉条儿菜 *ya an fen tiao er cai*

Leaves numerous, densely tufted, linear-lanceolate, rarely lanceolate, 2–3 cm × 2–4 mm. Scape 7–10 cm. Raceme 1–2 cm, 7–9-flowered; rachis pubescent. Flowers distinctly pedicellate; pedicel 1–2.5 mm, pubescent; bract and bracteole borne on proximal part of pedicel, often at or near base; bract linear-lanceolate, ca. 4 mm, slightly shorter than flower, base pubescent, apex acute. Perianth creamy white, 1.5–2.5 mm, pubescent; tube campanulate; lobes erect, ovate, ca. 1 × 0.7 mm, ca. 1 × tube length, apex obtuse. Ovary subglobose. Capsule unknown. Fl. May.

- About 800 m. C Sichuan (Ya'an Xian).

*Aletris yaanica* is known only from the type collection. The protologue illustrates a plant at early anthesis which seems very similar to *A. pedicellata*. Further gatherings are needed to establish whether or not it is distinct.

**13. *Aletris scopulorum*** Dunn, J. Linn. Soc., Bot. 38: 370. 1908.

短柄粉条儿菜 *duan bing fen tiao er cai*

*Aletris makiyataroi* Naruhashi.

Rhizome cormlike, subglobose, 3–7 mm in diam. Leaves 1–5, laxly tufted, linear, 3–15 cm × 2–4.5 mm. Scape 10–35 cm, slender, often wiry. Raceme 2.5–12.5 cm, laxly 4–17-flowered, rachis pubescent. Flowers shortly pedicellate; pedicel 0.5–3.5 mm, pubescent; bract and bracteole borne on proximal 1/2 of pedicel; bract linear-lanceolate, 2–5.5 mm, shorter than or equaling flower, ± glabrous, apex acute. Perianth white, 3–5 mm, sparsely pubescent or glabrescent; tube campanulate; lobes erect or slightly recurved, narrowly oblong-lanceolate to linear, 1.5–2.5 × 0.3–0.7 mm, ca. 1 × tube length or slightly longer, apex obtuse to rounded. Capsule subglobose, 3–3.5 × 2.5–3 mm, apex of valves abruptly narrowed; style ca. 0.5 mm or indistinct; stigma not or only slightly thickened. Fl. Mar–Apr, fr. Apr.

Roadside scrub, grassy slopes, moist places on steppes, wastelands; near sea level to 400 m. Fujian, Guangdong, Hunan, Jiangxi, Zhejiang [Japan].

The type of *Aletris makiyataroi*, described from Japan in 1973, corresponds with that of *A. scopulorum*, which was formerly considered endemic to China.

**14. *Aletris glandulifera*** Bureau & Franchet, J. Bot. (Morot) 5: 156. 1891.

腺毛粉条儿菜 *xian mao fen tiao er cai*

*Aletris biondiana* Diels; *A. lactiflora* Franchet.

Leaves 5–10, laxly tufted, linear, 5–18 cm × 2–6 mm. Scape 10–30 cm. Raceme 2–7.5 cm, laxly 5–25-flowered; rachis pubescent. Flowers distinctly pedicellate; pedicel 0.5–3 mm, pubescent; bract and bracteole borne at or near apex of pedicel; bract narrowly linear-lanceolate, 5–15 mm, 2–5 × flower length, base pubescent, apex subacute. Perianth white, 2.5–4.5 mm, pub-

escent; tube urceolate; lobes ± erect, ovate to lanceolate, 1–2 × ca. 0.7 mm, 0.6–0.8 × tube length, apex obtuse. Capsule ovoid to subglobose, 3–3.5 × 2.5–3 mm, apex of valves abruptly narrowed; style ca. 0.5 mm; stigma not or only slightly thickened. Fl. Jul.

- Forested slopes, grassy places, herb communities; 3300–4300 m. Gansu, Shaanxi, Sichuan.

**15. *Aletris megalantha*** F. T. Wang & Tang, Acta Phytotax. Sin. 1: 119. 1951.

大花粉条儿菜 *da hua fen tiao er cai*

Leaves rather few (ca. 10), laxly tufted, linear-lanceolate to linear, 15–40 cm × 10–15 mm. Scape to 40 cm. Raceme 9–12 cm, somewhat laxly 15–20-flowered; rachis pubescent. Flowers distinctly pedicellate; pedicel 2–3 mm, stout, densely pubescent; bract and bracteole borne near apex of pedicel; bract lanceolate to narrowly so, 6–18 mm, slightly longer than to 2 × as long as flower, base pubescent, apex obtuse. Perianth pink, 7–10 mm, densely pubescent; tube urceolate; lobes erect, deltoid-ovate, 2–3 × ca. 1.5 mm, 0.3–0.5 × tube length, apex obtuse-rounded. Capsule unknown. Fl. Jul.

- Grassy slopes; 2800–3400 m. W Yunnan (Zhenkang Xian).

