

96. **LITLEDALEA** Hemsley, Hooker's Icon. Pl. 25: t. 2472. 1896.

扇穗茅属 shan sui mao shu

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Perennials, often rhizomatous. Leaf sheaths with free margins overlapping almost to the base. Panicle open or loosely contracted, composed of few spikelets. Spikelets large, wedge-shaped to oblong, flat, florets few to several; glumes unequal, membranous or scarios, shorter than florets, lower glume 1–3-veined, upper glume 3–5-veined; floret callus small, rounded; lemmas elliptic-oblong, usually papery, rounded on back, 7–9-veined, glabrous or puberulous, apex obtuse to truncate and erose, awnless or infrequently mucronate; palea shorter and narrower than lemma, scabrid to ciliate along keels, apex 2-toothed. Anthers 3, usually nearly as long as palea.

Four species: China, Kazakhstan, Kyrgyzstan, ?Nepal, Tajikistan; four species (three endemic) in China.

This is a small genus of decorative, mountain grasses with large, usually papery spikelets, almost endemic to China.

- 1a. Culms 15–25 cm; panicle contracted, branches erect, much shorter than spikelets ..... 1. *L. alaica*  
1b. Culms 25–70 cm; branches flexuously spreading, longer than spikelets.  
2a. Lemma apex narrowly obtuse or emarginate and mucronate; palea 2/3–7/8 lemma length, keels ciliate ..... 2. *L. przewalskyi*  
2b. Lemma apex rounded, sometimes erose; palea 1/2–2/3 lemma length, keels scabrid-ciliolate.  
3a. Lemmas puberulous, lowest 1.2–1.5 cm; leaf blades pubescent; pedicels scabrid; if panicle branch  
2-spiculate, lower spikelet sessile ..... 3. *L. tibetica*  
3b. Lemmas almost smooth, lowest 1.4–2.7 cm; leaf blades subglabrous; pedicels smooth; if panicle branch 2-  
spiculate, both spikelets on long pedicels ..... 4. *L. racemosa*

1. **Littledalea alaica** (Korshinsky) Petrov ex Nevski, Fl. URSS 2: 553. 1934.

帕米尔扇穗茅 pa mi er shan sui mao

*Bromus alaicus* Korshinsky, Zap. Imp. Akad. Nauk Fiz.-Mat. Otd. 4: 101. 1896.

Culms erect, 15–25 cm tall. Leaf sheaths pubescent, auriculate, auricles linear, reflexed; leaf blades gray-green, usually convolute, abaxial surface smooth, adaxial surface scabrid; ligule densely puberulous. Panicle contracted, racemose; branches erect, 1–1.5 cm, much shorter than spikelets. Spikelets 2.5–3.5 cm, florets 5–11; lower glume 8–10 mm, 1–3-veined, upper glume 10–13 mm, 3–5-veined; lemmas elliptic-lanceolate, lowest 1.5–1.7 cm, purple with brown apex, faintly 7–13-veined, back glabrous, margins ciliolate toward apex, apex obtuse or emarginate; palea 2/3 lemma length. Fl. and fr. Jun–Aug.

Stony mountain slopes, scree and sand. Qinghai, Xizang [Kazakhstan, Kyrgyzstan (Alai Mountains), Tajikistan (Pamirs)].

2. **Littledalea przewalskyi** Tzvelev, Rast. Tsentr. Azii 4: 173. 1968.

泽沃扇穗茅 ze wo shan sui mao

Perennial, rhizomatous, basal sheaths papery, in tight bunches, eventually becoming fibrous. Culms solitary or tufted, 25–70 cm tall, ca. 2 cm in diam. Leaf sheaths glabrous, scaberulous toward ligule; leaf blades convolute, gray-green, 9–20 cm × 0.8–3 mm, abaxial surface smooth, adaxial surface scabrid, apex acute; ligule 1–2.5 mm. Panicle 5–19 cm, lax, racemose, few-spiculate; branches mostly unbranched, flexuous, scabrid or almost smooth, bearing 1 or rarely 2 spikelets. Spikelets wedge-shaped, 1.6–3 cm, florets 5–11; rachilla scabrid; glumes lanceolate to oblong, apex obtuse to acute with ciliolate

margin, lower glume 4–9 mm, upper glume 6–14 mm; lemmas elliptic-oblong, lowest 1.1–1.8 cm, herbaceous with scarios margins and apex, back scabrid on lateral veins and toward apex, otherwise smooth, apex narrowly obtuse or emarginate, often with mucro to 2.5 mm from sinus; palea 2/3–7/8 lemma length, longer than anthers, keels ciliate. Anthers 4–6.7 mm.

- Steep clay slopes; 2200–5700 m. Gansu, Qinghai, Xizang.

The name "*Littledalea tibetica* var. *paucispica*" (Keng, Claves Gen. Sp. Gram. Prim. Sin. 173. 1957) belongs here, but was not validly published because no Latin description was provided.

3. **Littledalea tibetica** Hemsley, Hooker's Icon. Pl. 25: t. 2472. 1896.

藏扇穗茅 zang shan sui mao

Perennial, rhizomatous. Culms tussocky, 40–70 cm tall, ca. 1.5 mm in diam. Leaf sheaths glabrous or lower pubescent; leaf blades usually convolute, 2–10(–15) cm × 0.2–4 mm, both surfaces pubescent or abaxial surface glabrous, subacute; ligule 1–4 mm. Panicle 7–11 cm, lax, sometimes reduced to a few-spiculate raceme; branches mostly unbranched, flexuous, scabrid, lower often binate, each bearing 1 spikelet or a close pair, lateral spikelet on ca. 1 mm pedicel, slightly narrower than terminal spikelet. Spikelets oblong to wedge-shaped, 1.3–2.5 cm, purple and golden brown, florets 2–8; rachilla scabrid or smooth; glumes variable, apex obtuse with ciliolate margin, lower glume oblong to oblanceolate, 2.5–9 mm, upper glume broadly oblong to oblanceolate, 5–11 mm; lemmas elliptic-oblong, lowest 1.2–1.5 cm, papery becoming membranous toward apex, veins scaberulous, back scaberulous-puberulous especially lower flanks, apex rounded, minutely ciliolate; palea 1/2–2/3 lemma length, keels scabrid-ciliolate. Anthers 4–5 mm. Fl. and fr. Jul–Aug.

• Rocky slopes, river gravel; 5000–5500 m. Xizang, Yunnan [?Nepal].

This species is very close to *Littledalea racemosa*, but the spikelets are slightly smaller and, when paired, more bunched on the panicle branches. The leaf blades are also hairier.

Hara et al. (Enum. Fl. Pl. Nepal 1: 137. 1978) cited *Stainton 4356* and *Stainton 4357* from Nepal.

**4. *Littledalea racemosa*** Keng, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 9: 136. 1934.

扇穗茅 shan sui mao

Perennial, rhizomatous. Culms solitary or tufted, 25–40 cm tall, ca. 2 mm in diam. Leaf sheaths loose, papery, smooth, glabrous; leaf blades flat or loosely convolute, 3.5–22 cm × 2–5 mm, abaxial surface glabrous, adaxial surface puberulous, subacute; ligule 1–5 mm. Panicle 7–16 cm, usually reduced to a lax raceme of 3–9 spikelets; branches unbranched, flexuous, smooth, lower binate, each bearing 1 or 2 spikelets, lateral spikelets on pedicels ca. 1 cm or more long. Spikelets wedge-shaped, 2.2–3.2 cm, purple and golden brown, florets 5–8; rachilla smooth; glumes narrowly lanceolate to elliptic, apex acute to erose, lower glume lanceolate, (3–)7–9 mm, upper glume broadly lanceolate or elliptic, 12–15 mm; lemmas narrowly elliptic-oblong, lowest 1.4–2.7 cm, papery, membranous, smooth or scaberulous near margins and apex, apex rounded or erose; palea 1/2 lemma length or less, keels scabrid-ciliolate. Anthers 4.5–7.5 mm. Fl. and fr. Jul–Aug.

• Stony mountainsides, alpine steppe, river gravel; 2700–5000 m. Qinghai, Sichuan, Xizang, Yunnan.

The spikelets are variable in size, but always striking because of their colorful, conspicuously papery texture and very obtuse lemmas.

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