

### 51. PTILAGROSTIS Grisebach in Ledebour, Fl. Ross. 4: 447. 1852.

细柄茅属 xi bing mao shu

*Stipa* sect. *Ptilagrostis* (Grisebach) Hackel.

Perennials, densely tufted. Culms slender, erect. Leaf blades setaceous. Inflorescence an open or loosely contracted panicle. Spikelets with 1 floret, bisexual, disarticulating above glumes; rachilla extension absent; glumes lanceolate to elliptic-oblong, subequal, a little longer than floret, herbaceous to scariosus, 1–3-veined, apex obtuse to acuminate; callus short, obtuse, shortly bearded; lemma lanceolate, terete, papery, 3–5-veined, pubescent or pilose, margins not overlapping, apex minutely or distinctly 2-toothed, awned from between teeth; awn persistent, plumose throughout, 1(or 2)-geniculate, column twisted; palea midline exposed between lemma margins. Lodicules 3. Stamens 3, anthers glabrous or apex with hair tufts. Stigmas 2.

Eleven species: E Tajikistan (Pamirs) to Russia (NE Siberia), also W United States, on mountains; seven species (two endemic) in China.

*Ptilagrostis pelliottii* is a distinct and readily separable species, but most of the remainder of the genus comprises a complex of intergrading forms and local variants. The genus is weakly separated from *Stipa*, *S. subsessiliflora* being intermediate.

- 1a. Ligule truncate, ciliate; leaf blades fairly stiff; glumes lanceolate, sharply acuminate; gravelly and rocky places on desert plains ..... 1. *P. pelliottii*
- 1b. Ligule oblong or lanceolate, rounded, glabrous; leaf blades softer; glumes elliptic or oblong-lanceolate, obtuse to acute; alpine meadows and high hilly steppe.
  - 2a. Panicle open, 3–5 cm wide; branches up to 6 cm, spreading.
    - 3a. Glumes 2.6–3.5 mm; awn 0.6–1 cm ..... 2. *P. luquensis*
    - 3b. Glumes 4.5–7 mm; awn 1–3 cm.
      - 4a. Anthers 1–2 mm, with hair-tufts at apex; glumes gray-brown or purplish, whitish at apex; awn 1–2 cm ..... 3. *P. dichotoma*
      - 4b. Anthers 1.8–3 mm, glabrous; glumes dark-purple at base, otherwise whitish; awn 1.5–3 cm ..... 4. *P. mongholica*
  - 2b. Panicle contracted, 0.7–2 cm wide; branches 0.3–2.8 cm, suberect or narrowly ascending.
    - 5a. Spikelets 8–12 mm; glumes unequal ..... 5. *P. yadongensis*
    - 5b. Spikelets 4–7 mm; glumes subequal.
      - 6a. Panicle with sheathing membranous bract at base of lowest branches; spikelets purple; lemma 3.5–5 mm; awn 1–1.5 cm ..... 6. *P. concinna*
      - 6b. Panicle without membranous bract at base of lowest branches; spikelets brownish mauve; lemma 4.5–6 mm; awn 1.5–2 cm ..... 7. *P. junatovii*

**1. *Ptilagrostis pelliottii*** (Danguy) Grubov, Consp. Fl. Mongol. 62. 1955.

中亚细柄茅 zhong ya xi bing mao

*Stipa pelliottii* Danguy in Lecomte, Notul. Syst. (Paris) 2: 167. 1912.

Perennial, densely tufted from a short rhizome, old basal sheaths persistent. Culms 20–50 cm tall, 1–2 mm in diam., 2–3-noded. Leaf blades gray-green, fairly rigid, setaceous, (3–)6–10 cm, abaxial surface scabrid; ligule truncate, ca. 1 mm, margin ciliate. Panicle lax, up to 10 × 3–4 cm; branches usually paired, capillary, 2.5–4 cm, lower part bare. Spikelets yellowish; glumes lanceolate, 5–6 mm, 3-veined with lateral veins short, membranous, smooth, apex sharply acuminate; lemma 3–4 mm, 3-veined, veins convergent at apex, evenly pubescent throughout, apex minutely 2-toothed; awn 2–3 cm, strongly curved near base, column short, twisted, plumose; palea subequal to lemma, 1-veined. Anthers ca. 2.5 mm, apex glabrous. Fl. and fr. Aug–Oct.

Desert plains, rocky slopes, on rocks and gravel; 1100–3500 m. Gansu, Nei Mongol, Ningxia, Qinghai, Xinjiang [Mongolia (Gobi Desert)].

**2. *Ptilagrostis luquensis*** P. M. Peterson et al., Sida 21: 1356. 2005.

短花细柄茅 duan hua xi bing mao

Perennial, densely tufted. Culms 5–23 cm tall, 0.5–0.8 mm in diam., 1-noded. Leaf blades filiform, 2–6 cm, abaxial surface smooth or scaberulous; ligule oblong, 0.4–1.2 mm. Panicle open, ovate in outline, 2–5.2 × 1–3 cm; branches single or paired, loosely ascending or spreading, prominent axillary cushions present, capillary, bare in lower part; pedicels 3–12 mm. Spikelets whitish with purplish base; glumes oblanceolate to elliptic-oblong, 2.6–3.5 mm, lower glume 1–3-veined, upper glume 3–5-veined, apex scaberulous, obtuse; lemma 2.2–2.7 mm, pilose below middle, densely scaberulous above; awn 0.6–1 cm, column twisted, plumose, hairs 1.2–2 mm; palea subequal to lemma, 2-veined. Anthers 1–1.4 mm, bearded at apex. Fl. and fr. Jul–Sep.

• Grassy plains; 3300–4800. Gansu, Qinghai, Sichuan, Xizang.

**3. *Ptilagrostis dichotoma*** Keng ex Tzvelev, Rast. Tsentr. Azii 4: 43. 1968.

双叉细柄茅 shuang cha xi bing mao

Perennial, densely tufted. Culms 15–50 cm tall, 0.7–1 mm in diam., 1–2-noded. Leaf blades setaceous, up to 20 cm, abaxial surface smooth or scabrid; ligule triangular or lanceolate, 1–3 mm. Panicle open, ovate in outline, 6–10(–14) × 2–6 cm; branches usually single, rarely paired, dichotomously branched, sometimes with prominent axillary cushions, filiform, bare in lower part; pedicels slender, 5–15 mm. Spikelets purplish or gray-brown, whitish at apex; glumes elliptic, 4.5–

6.5 mm, 3-veined, apex usually smooth, obtuse to acute; lemma 3.6–5.2 mm, pilose below middle, scabrid or minutely pubescent above; awn 1–2 cm, column twisted, plumose, hairs 1.2–3 mm below bend, shorter above; palea equal to lemma, 2-veined. Anthers 1–2 mm, bearded at apex. Fl. and fr. Jul–Sep.

Alpine meadows, grassy mountain slopes, forests, under shrubs; 3000–4800 m. Gansu, Nei Mongol, Qinghai, Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, N India, Nepal].

Specimens from the southern slope of the Himalayas usually have smooth leaf blades, but those from further north generally have scabrid blades. An exceptionally tall specimen with small spikelets (3.2–4 mm) and very scabrid panicle branches, collected at 2800 m in Qinghai (Nanshan), has been separated as *Ptilagrostis dichotoma* var. *roshevitsiana* Tzvelev (Rast. Tsentr. Azii 4: 43. 1968). It seems likely that this will prove to be a different species when more material is available.

*Ptilagrostis dichotoma* is very indistinctly separable from *P. mongholica*, and specimens from the Himalayas have been identified as the latter. However, the presence of shorter, bearded anthers does seem to be correlated with a slightly different smaller habit and shorter awns. *Ptilagrostis dichotoma* is also very close to *P. concinna*, but it lacks the sheathing, membranous bract at the base of the panicle characteristic of that species.

**4. *Ptilagrostis mongholica*** (Turczaninow ex Trinius) Grisebach in Ledebour, Fl. Ross. 4: 447. 1852 [“1853”].

细柄茅 xi bing mao

*Stipa mongholica* Turczaninow ex Trinius, Mém. Acad. Imp. Sci. Saint-Petersbourg, Sér. 6, Sci. Math., Seconde Pt. Sci. Nat. 4, 2(1): 42. 1836; *Ptilagrostis tibetica* (Mez) Tzvelev; *Stipa tibetica* Mez.

Perennial, densely tufted. Culms 30–60 cm tall, 1–1.5 mm in diam., usually 2-noded. Leaf blades setaceous, up to 20 cm, abaxial surface scabrid; ligule obtuse, 1–3 mm. Panicle open, ovate in outline, 12–17 × 6–9 cm; branches single or paired, with prominent axillary cushions, widely spreading, capillary, lower part bare, pedicels long, capillary. Spikelets dark-purple or grayish at base, whitish scarious above; glumes elliptic-oblong, 4.5–6(–7) mm, 3–5-veined, apex scabrid, obtuse to acute; lemma 4–6 mm, pilose below middle, scabrid above; awn 1.5–3 cm, weakly geniculate, column slightly flexuous, plumose, hairs 1.2–1.5 mm; palea equal to lemma, 2-veined. Anthers 1.8–3 mm, glabrous at apex. Fl. and fr. Jul–Aug.

Alpine steppes; 2000–4600 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Yunnan [Bhutan, Kashmir, Mongolia, Nepal, Russia].

**5. *Ptilagrostis yadongensis*** P. C. Keng & J. S. Tang, J. S. W. Agric. Coll. 1985(4): 44. 1985.

大穗细柄茅 da sui xi bing mao

*Ptilagrostis macrospicula* L. B. Cai.

Perennial, forming small dense tussocks. Culms 8–18 cm tall, ca. 0.8 mm in diam., 1–2-noded. Leaf blades setaceous, 2–10 cm, abaxial surface glabrous; ligule lanceolate, 2.5–6 mm, denticulate. Panicle contracted, 4–8 × 0.7–1 cm, lowermost branches subtended by 2 ca. 5 mm membranous bracts; lower

branches paired, 0.3–2.8 cm, suberect, spikelets few. Spikelets brownish or purplish; glumes lanceolate, unequal, lower glume 8.5–12.5 mm, 3-veined, upper glume 8–9.5 mm, 1-veined, apex acute; lemma 5.5–8 mm, glabrous in middle part, gradually pubescent toward base and apex, apex 2-toothed; awn 14–16 mm, 1-geniculate, plumose below bend with ca. 1.5 mm hairs, pubescent above with ca. 0.4 mm hairs; palea shorter than lemma by 0.5–1.5 mm, 2-veined. Anthers 1.9–2.5 mm, glabrous at apex. Fr. Sep.

• Meadows on mountainsides; ca. 4000 m. Xizang.

**6. *Ptilagrostis concinna*** (J. D. Hooker) Roshevitz in Komarov, Fl. URSS 2: 75. 1934.

太毛细柄茅 tai bai xi bing mao

*Stipa concinna* J. D. Hooker, Fl. Brit. India 7: 230. 1896 [“1897”].

Perennial, densely tufted, old basal sheaths forming tight clusters. Culms 10–30 cm tall, 0.6–1 mm in diam., 2-noded. Leaf blades setaceous, 5–15 cm, abaxial surface smooth; ligule obtuse, 0.5–2 mm. Panicle contracted, 2–5 × 1–2 cm, lowest branches enclosed by a sheathing lanceolate membranous bract, smaller bracts present at base of some upper branches; branches usually paired, 1–2 cm, suberect, spikelets few. Spikelets dark purple or purplish red with white scarious apices; glumes elliptic, 4–6.3 mm, lower glume 1-veined, upper glume 3-veined, apex smooth, acute; lemma 3.5–5 mm, pilose below middle, scabrid above, apex 2-toothed, teeth 0.3–0.5 mm; awn 1–1.5 cm, plumose, hairs 1–1.5 mm, shorter toward apex, column loosely twisted; palea subequal to lemma, 2-veined. Anthers 1.5–2.2 mm, bearded at apex. Fl. and fr. Jul–Sep.

Alpine meadows, moist grassy places, under shrubs, swampy places, *Kobresia* moors; 3700–5400 m. Gansu, Qinghai, Shaanxi, Sichuan, Xinjiang, Xizang, Yunnan [India (Sikkim), Kashmir, Kyrgyzstan (Tien Shan), Tajikistan (Pamirs)].

**7. *Ptilagrostis junatovii*** Grubov, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 17: 3. 1955.

窄穗细柄茅 zhai sui xi bing mao

Perennial, tufted. Culms erect, 15–30 cm tall, ca. 1 mm in diam., 2-noded. Leaf blades setaceous, involute, 5–15 cm, abaxial surface smooth, prominently veined; ligule obtuse, 0.5–2 mm. Panicle contracted, 4–8(–10) × 1–1.5 cm, lowest branches without sheathing membranous bract; branches usually paired. Spikelets brownish mauve, usually purplish at base; glumes elliptic, (5–)6–7 mm, 3-veined, apex scabrid; lemma 4.5–6 mm, pilose below middle, shortly pubescent above, apex 2-toothed; awn (1–)1.5–1.7 cm, geniculate in a right angle, hairs longer on column, fewer toward apex; palea slightly shorter than lemma, 2-veined. Anthers ca. 1.2 mm, bearded at apex. Fl. and fr. Jul–Sep.

Alpine meadows, grassy mountain slopes, floodlands, forests, under shrubs; 3200–4500 m. Xinjiang, Xizang [Kazakhstan, Mongolia, Russia].

This species is very close to *Ptilagrostis concinna*, but lacks a sheathing bract at the base of the panicle.

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