

## 94. PHLEUM Linnaeus, Sp. Pl. 1: 59. 1753.

梯牧草属 *ti mu cao shu*

Lu Shenglian (卢生莲); Sylvia M. Phillips

Annual or perennial, often shortly rhizomatous. Leaf blades linear, flat. Inflorescence a spikelike, cylindrical panicle, elongate to ovoid or capitate; branches short, sometimes adnate to axis, spikelets densely crowded, subsessile. Spikelets strongly laterally compressed, floret 1, disarticulating above glumes; rachilla extension present or absent; glumes equal, oblong or obovate in side view, longer than and enclosing floret, herbaceous, 3-veined, strongly keeled, keel often pectinate-ciliate, margins overlapping but not connate, apex truncate to acute, with stout mucro or short stiff awn; lemma broadly oblong or ovate, thinly membranous, dorsally convex, 3–7-veined, apex truncate to subacute, awnless or mucronate; palea slightly shorter than lemma, ciliate along keels; lodicules 2; stamens 3. Caryopsis ellipsoid to ovoid.

Sixteen species: temperate and cold regions of the N hemisphere, extending southward in America along mountain chains into Chile; four species in China.

- 1a. Annual, lacking non-flowering shoots at anthesis; spikelets obovate-cuneate; glumes firm, inflated ..... 1. *P. paniculatum*  
1b. Perennial, with non-flowering shoots at anthesis; spikelets oblong; glumes membranous, not inflated.  
2a. Panicle broadly cylindrical or ovoid; glumes with 1.5–3 mm awns; spikelets purplish ..... 2. *P. alpinum*  
2b. Panicle narrowly cylindrical; glumes with 0.3–1.5 mm awns; spikelets gray-green.  
3a. Glumes pectinate-ciliate along keel; culms swollen at base ..... 3. *P. pratense*  
3b. Glumes scabrid along keel; culms not swollen at base ..... 4. *P. phleoides*

### 1. *Phleum paniculatum* Hudson, Fl. Angl. 23. 1762.

鬼蜡烛 *gui la zhu*

*Chilochloa paniculata* (Hudson) P. Beauvois; *Phleum asperum* Jacquin; *P. japonicum* Franchet & Savatier.

Annual, tufted. Culms erect or geniculate at base, slender, 3–45 cm tall, 3–5-noded. Leaf sheaths glabrous, upper slightly inflated; leaf blades soft, 1.5–15 cm, 2–6 mm wide, glabrous, margins scabrid, apex acute; ligule 2–4 mm, obtuse. Panicle narrowly cylindrical, 1–10 × 0.4–0.8 cm, yellowish green; branches free from central axis. Spikelets obovate-cuneate, 2–3 mm; rachilla extension present; glumes inflated toward apex, narrowed toward base, deeply channeled between veins, scabrid, keel glabrous or shortly pectinate, apex truncate, cuspidate into a hard 0.3–0.6 mm mucro; lemma 1.3–2 mm, 5-veined, sparsely appressed-pubescent, apex subobtuse; anthers 0.4–0.8 mm. Caryopsis ca. 1 mm. Fl. and fr. Apr–Aug.  $2n = 28$ .

Mountain slopes, riversides, field margins, roadsides; ca. 1800 m. Anhui, Gansu, Henan, Hubei, Jiangsu, Shaanxi, Shanxi, Sichuan, Xinjiang, Zhejiang (Lin'an) [Afghanistan, Kazakhstan, Kyrgyzstan, NW India, Japan, Kashmir, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; SW Asia, Europe].

### 2. *Phleum alpinum* Linnaeus, Sp. Pl. 1: 59. 1753.

高山梯牧草 *gao shan ti mu cao*

*Phleum commutatum* Gaudin.

Perennial, shortly rhizomatous. Culms loosely tufted, erect or decumbent at base, 5–40(–60) cm tall, 3–4-noded. Leaf sheaths glabrous, upper slightly inflated; leaf blades broadly linear, 2–13 cm, 2–9 mm wide, the upper shorter than the lower, glabrous, apex acute; ligule 2–3 mm, obtuse. Panicle broadly cylindrical to ovoid, 1–6 × 0.6–1.2 cm, usually purplish; branches adnate to central axis. Spikelets oblong, 3–4 mm (excluding awns); rachilla extension absent; glumes oblong, membranous, scaberulous, lower softly hairy on margins, keel con-

spicuously pectinate-ciliate, apex truncate, cuspidate into a stiff, 1.5–3 mm, glabrous or ciliate awn; lemma ca. 2 mm, 5-veined, veins puberulent, apex truncate; anthers 1–1.5 mm. Caryopsis ca. 1.5 mm. Fl. and fr. Jun–Oct.  $2n = 14, 28$ .

Wet alpine meadows, damp soil around bushes, riversides; 2500–3900 m. Gansu, Heilongjiang, Henan, Hubei, Shaanxi, Sichuan, Taiwan, Xinjiang, Xizang, Yunnan [Afghanistan, Bhutan, India (Sikkim), Japan, Kashmir, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russia, Tajikistan; SW Asia, N Europe, North America, South America (Andes)].

This is a species of arctic and alpine regions of the N hemisphere, extending down the Andes in South America as far as Chile.

### 3. *Phleum pratense* Linnaeus, Sp. Pl. 1: 59. 1753.

梯牧草 *ti mu cao*

Perennial forming loose or dense tussocks. Culms erect or geniculately ascending, 40–120 cm tall, 5–6-noded, lowest nodes usually swollen and cormlike. Leaf sheaths glabrous, loose; leaf blades 10–50 cm, 3–8 mm wide, glabrous, both surfaces and margins scabrid, apex acuminate; ligule 2–5 mm, rounded. Panicle narrowly cylindrical, 4–15 × 0.5–1 cm, gray-green; branches adnate to central axis. Spikelets obovate-oblong, 3–3.5 mm; rachilla extension absent; glumes oblong, membranous, scaberulous, lower softly hairy on margins, keel conspicuously pectinate-ciliate, apex truncate with stout, 0.5–1.5 mm, scabrid awn; lemma ca. 2 mm, 7-veined, puberulent, especially along veins, apex obtuse; anthers 1.5–2 mm. Caryopsis ca. 1 mm. Fl. and fr. Jun–Aug.  $2n = 28, 42$ .

Grasslands, steppe, forest margins; ca. 1800 m. Anhui, Hebei, Heilongjiang, Henan, Shaanxi, Shandong, Xinjiang (Zhaosu), Yunnan [Russia; Europe].

This is a native of Europe and Russia, now widely introduced in temperate regions of the world as a pasture grass (Timothy Grass).

### 4. *Phleum phleoides* (Linnaeus) H. Karsten, Deut. Fl. 374.

1880.

假梯牧草 *jiā tí mù cǎo*

*Phalaris phleoides* Linnaeus, Sp. Pl. 1: 55. 1753.

Perennial, densely tufted. Culms erect or often geniculate

at base, 15–75 cm tall, 2–4-noded. Leaf sheaths smooth, loose; leaf blades 2–20 cm, 1–5 mm wide, the upper shorter than the lower, adaxial surface and margins scabrid, apex acuminate; ligule 1–3 mm, obtuse. Panicle narrowly cylindrical, gradually tapering to apex, 2.5–10 × 0.4–0.7 cm, gray-green; branches free from central axis. Spikelets oblong, 2–3 mm; rachilla extension present; glumes oblong, membranous, keel scabrid, apex obtuse, abruptly narrowed into a stout, 0.3–0.7 mm, scabrid mucro; lemma 1.5–2 mm, 5-veined, glabrous or puberulent, apex obtuse; anthers 1–1.5 mm. Caryopsis 1.3–1.5 mm. Fl. and fr. Jun–Sep.  $2n = 14$ .

Grassy mountain slopes, among shrubs, forest margins; 800–2600 m. Heilongjiang, Nei Mongol, N Xinjiang [Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Uzbekistan; NW Africa, SW Asia (Caucasus), Europe].

Flora of China 22: 367–368. 2006.