

**100. HORDEUM** Linnaeus, Sp. Pl. 1: 84. 1753.

大麦属 da mai shu

*Critesion* Rafinesque.

Plants annual or perennial. Culms usually erect. Leaf sheath of culine leaves split almost to base; ligule membranous or leathery-membranous; auricles present or absent; leaf blade usually flat. Spike dense, usually without a terminal spikelet; rachis short, brittle, rarely flexible. Spikelets usually 3 per node, in regular rows, with 1(or 2) florets; lateral spikelets usually pedicellate, rarely sessile, often reduced and much smaller than central spikelet; central spikelet usually sessile, rarely pedicellate, perfect. Glumes narrow, subulate-setaceous, sometimes lanceolate dilated at base, inconspicuously 1–3-veined, not keeled. Lemma subrounded abaxially, leathery, rarely leathery-membranous, 5-veined, not keeled, awned or awnless. Palea almost equaling lemma, glabrous, scabrous, or ciliate along keels. Lodicules broadly lanceolate or lanceolate-ovate. Caryopsis usually adnate to lemma and palea, rarely free, oblong, concave furrowed on inner side, apex hairy.  $x = 7$ .

Between 30 and 40 species: temperate regions, also on subtropical mountains; ten species (one endemic, two introduced) in China.

In addition to the species treated below, *Hordeum bulbosum* Linnaeus has been recorded as cultivated in China (FRPS 9(3): 30. 1987).

All species when young are used for forage.

- 1a. Plants perennial; glumes subulate-setaceous, not lanceolate dilated at base.  
2a. Glumes much (usually more than  $10 \times$ ) longer than floret ..... 5. *H. jubatum*  
2b. Glumes shorter to slightly longer than floret.  
3a. Nodes of culms glabrous.  
4a. Central spikelet with 2 florets, distal floret usually sterile; anthers 2–2.3 mm ..... 1. *H. innermongolicum*  
4b. Central spikelet usually with 1 floret; anthers 1–1.7 mm ..... 3. *H. roshewitzii*  
3b. Nodes of culms pubescent.  
5a. Central spikelet lemma apex acute, acuminate, or with short awn usually shorter than lemma body; anthers 2–4 mm ..... 2. *H. brevisubulatum*  
5b. Central spikelet lemma apex with awn 5–10 mm and usually longer than lemma body; anthers 1.1–2 mm ..... 4. *H. bogdanii*  
1b. Plants annual; glumes lanceolate dilated at base.  
6a. Spike distichous.  
7a. Rachis of spike brittle ..... 6. *H. spontaneum*  
7b. Rachis of spike flexible ..... 7. *H. distichon*  
6b. Spike hexastichous.  
8a. Rachis of spike flexible ..... 10. *H. vulgare*  
8b. Rachis of spike brittle.  
9a. Lateral spikelets shortly pedicellate ..... 8. *H. lagunculiforme*  
9b. Lateral spikelets sessile ..... 9. *H. agriocriton*

**1. *Hordeum innermongolicum*** P. C. Kuo & L. B. Cai, Acta Biol. Plateau Sin. 6: 223. 1987.

内蒙古大麦 nei meng gu da mai

Plants perennial, laxly tufted. Culms 80–140 cm tall, 3–5-noded, glabrous throughout. Leaf sheath glabrous; ligule 0.5–1 mm, membranous; leaf blade  $6–15 \times 0.4–0.6$  cm, abaxial surface subglabrous, adaxial surface pubescent. Spike reddish brown,  $7–16 \times 0.5–0.7$  cm; rachis slightly brittle. Lateral spikelets: pedicellate, usually sterile; pedicel 0.5–1 mm; glumes setaceous, 6–8 mm; lemma lanceolate, 5–7 mm, awn 3–4 mm. Central spikelet: sessile, usually with 2 florets; proximal floret fertile, distal one sterile; glumes lanceolate-setaceous, 6–9 mm, obscurely 2- or 3-veined; lemma lanceolate, 7–10 mm, pubescent, awn 6–8 mm. Anthers yellow, 2–2.3 mm. Caryopsis 2.5–3.5  $\times$  ca. 2 mm. Fl. and fr. Jul–Aug.

• Mountain slopes; ca. 1200 m. Nei Mongol, Qinghai.

**2. *Hordeum brevisubulatum*** (Triniius) Link, Linnaea 17: 391. 1844.

短芒大麦 duan mang da mai

Plants perennial, tufted or with short rhizomes. Culms usually erect, glabrous or densely pubescent at nodes. Leaf sheath usually fibrous at base, sometimes membranous, ± pubescent; ligule 0.2–0.7 mm; auricles present or absent; leaf blade flat or sometimes involute,  $(3–)5–150(–175) \times (0.2–)0.6–5(–7.1)$  cm, abaxial surface glabrous to scabrous or densely pilose, epidermis with straight or sinuous long cells, with or without silica cells, adaxial surface scabrous or densely pubescent or pilose. Spike pale glaucous to greenish or grayish violet,  $(2.3–)3–8.5(–9.6) \times 0.4–0.8$  cm; rachis brittle. Lateral spikelets: usually developed, sometimes rudimentary, pedicellate; pedicel 0.9–2.3 mm. Central spikelet: sessile or subsessile, lanceolate; glumes setaceous, equal, 5.5–6.5(–7) mm; lemma glabrous, subglabrous, pubescent, or densely pinkish violet pilose or long spinulose, apex acute-acuminate to shortly awned, awn usually

shorter than lemma body; palea apex ± acute. Lodicules (0.6–) 0.8–1.4(–1.6) mm, ± pubescent distally and at margin, apex acute to acuminate. Anthers yellow to violet, (2–)2.5–4 mm. Caryopsis yellow-brown to dark violet. Fl. and fr. summer.

Steppe valleys at timberline, wet meadows, saline meadows, stream banks, salt steppes, dry valleys, dry stony slopes and other dry habitats, rarely as a weed; 1400–5000 m. Gansu, Hebei, Heilongjiang, Nei Mongol, Ningxia, Qinghai, Shaanxi, Xinjiang, Xizang [C and N Afghanistan, Kashmir, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Turkmenistan, Uzbekistan].

- 1a. Lemma of central spikelet glabrous or subglabrous; culms glabrous throughout; leaf blade abaxial epidermis without silica cells ..... 2a. subsp. *brevisubulatum*
- 1b. Lemma of central spikelet pubescent, pilose or long spinulose; culms usually densely pubescent at nodes; leaf blade abaxial epidermis with or without silica cells.
  - 2a. Lemma of central spikelet densely pinkish violet pilose or long spinulose; leaf blade abaxial epidermis without silica cells ..... 2c. subsp. *turkestanicum*
  - 2b. Lemma of central spikelet pubescent, but hairs usually sparser and shorter; leaf blade abaxial epidermis with very dense silica cells ..... 2b. subsp. *nevskianum*

**2a. *Hordeum brevisubulatum* subsp. *brevisubulatum***

短芒大麦(原亚种) duan mang da mai (yuan ya zhong)

*Hordeum secalinum* Schreber var. *brevisubulatum* Trinius, Sp. Gram. 1: pl. 4. 1828; *Critesion brevisubulatum* (Trinius) Å. Löve; *H. macilentum* Steudel; *H. secalinum* subsp. *brevisubulatum* (Trinius) Krylov.

Culms glabrous throughout. Leaf blade abaxial epidermis with straight long cells, without silica cells. Lemma of central spikelet glabrous or subglabrous; awn less than 3 mm. Fl. and fr. summer.  $2n = 14^*, 28^*$ .

Steppe valleys at timberline, saline meadows, stream banks; 1400–3000 m. Gansu, Nei Mongol, Ningxia, Qinghai, Shaanxi, Xinjiang, Xizang [Mongolia, Pakistan, Russia (SE Siberia); C Asia].

**2b. *Hordeum brevisubulatum* subsp. *nevskianum* (Bowden) Tzvelev, Novosti Sist. Vyssh. Rast. 8: 66. 1971.**

拟短芒大麦草 ni duan mang da mai cao

*Hordeum nevskianum* Bowden, Canad. J. Genet. Cytol. 7: 396. 1965; *Critesion brevisubulatum* subsp. *nevskianum* (Bowden) Å. Löve; *C. nevskianum* (Bowden) Tzvelev; *H. brevisubulatum* var. *nevskianum* (Bowden) Tzvelev.

Culms densely pubescent at nodes. Leaf blade abaxial epidermis with sinuous long cells, silica cells very dense. Lemma of central spikelet pubescent, but hairs usually sparser and shorter than in subsp. *turkestanicum*. Fl. and fr. summer.  $2n = 14, 28^*$ .

Saline meadows, salt steppes, dry valleys, rarely as a weed; 1500–5000 m. Qinghai, Shaanxi, Xinjiang [N Afghanistan, Kashmir, Nepal, Russia (W Siberia)].

**2c. *Hordeum brevisubulatum* subsp. *turkestanicum* Tzvelev, Novosti Sist. Vyssh. Rast. 8: 66. 1971.**

糙稃大麦草 cao fu da mai cao

*Hordeum turkestanicum* Nevski, Trudy Sredne-Aziatsk. Gosud. Univ., Ser. 8b, Bot. 17: 45. 1934, not R. E. Regel (1914); *Critesion brevisubulatum* subsp. *turkestanicum* Å. Löve; *C. turkestanicum* Tzvelev; *H. brevisubulatum* var. *turkestanicum* P. C. Kuo.

Culms to 50 cm tall, usually densely pubescent at nodes. Leaf blade 5–8 × 0.2–0.4 cm, both surfaces densely pilose or scabrous, abaxial epidermis with straight long cells, without silica cells. Spike dense, usually grayish violet. Lemma densely pinkish violet pilose or long spinulose, apex acuminate in lateral spikelets, awned in central spikelet. Fl. and fr. summer.  $2n = 28, 42$ .

Mainly dry stony slopes and other dry habitats, but also wet meadows and stream banks; 2000–4600 m. Xinjiang, Xizang [C and NE Afghanistan, Kashmir, Kazakhstan, Kyrgyzstan, Nepal, Russia, Turkmenistan, Uzbekistan].

**3. *Hordeum roshevitzii* Bowden, Canad. J. Genet. Cytol. 7: 395. 1965.**

紫大麦草 zi da mai cao

*Hordeum sibiricum* Roshevitz, Izv. Glavn. Bot. Sada SSSR 28: 385. 1929, not Link ex Steudel (1840), nor (Linnaeus) Schenck (1907); *Critesion californicum* (Covas & Stebbins) Å. Löve subsp. *sibiricum* Å. Löve; *C. roshevitzii* (Bowden) Tzvelev.

Plants perennial, usually laxly tufted. Culms erect, 40–70 cm tall, 3- or 4(–6)-noded, smooth, glabrous. Ligule membranous; auricles usually absent; leaf blade flat, 3.5–15 × 0.3–0.4 cm, both surfaces glabrous but scabrous, epidermis without silica cells. Spike green or purplish green to blackish purple, 5–8 × 0.3–0.6 cm; rachis slightly brittle near base, very brittle distally, margin scabrous to ciliate. Lateral spikelets rudimentary, rarely male; glumes setaceous, 0.5–0.9(–1) cm, scabrous; lemma and palea ca. 4.2 mm; lemma awn ca. 2.3 mm. Central spikelet usually with 1 floret; glumes setaceous, 6–8 mm; lemma lanceolate, 5–7 mm, glabrous, awn (2–)4–8 mm; palea slightly shorter than or equaling lemma. Anthers yellow, 1–1.7 mm. Fl. and fr. Jun–Aug.  $2n = 14^*, 28$ .

Alkaline or saline meadows, lake shores, river banks, streamsides, pebbles; 500–3500 m. Gansu, Nei Mongol, Ningxia, Qinghai, Shaanxi, Sichuan, Xinjiang [Japan, Korea, Mongolia, Russia].

The record in FRPS (9(3): 28. 1987) of *Hordeum violaceum* Boissier & Hohenacker, native to SW Asia, is referable to *H. roshevitzii*.

**4. *Hordeum bogdanii* Wilensky, Trudy Glavn. Bot. Sada 40: 248. 1928 ["*bogdani*"].**

布顿大麦草 bu dun da mai cao

*Critesion bogdanii* (Wilensky) Å. Löve.

Plants perennial, tufted. Culms 40–80(–100) cm tall, ca. 2 mm in diam., (2 or)3–5(or 6)-noded, densely appressed hairy at nodes. Leaf sheath membranous or fibrous, smooth, but those of lower leaves sometimes hairy; ligule 0.2–0.6 mm, membranous; auricles usually absent; leaf blade glaucous green, flat, 6–15 × 0.3–0.8(–1) cm, stiff, both surfaces scabrous or adaxial surface pilose. Spike pale whitish glaucous or greenish violet to somewhat dark violet, 4–10 × (0.3–)0.5–0.7 cm; rachis usually tough except apically, margin scabrous hairy. Lateral spikelets: pedicellate, male or perfect and setting seeds; glumes setaceous, rarely somewhat flattened at base, equal or proximal one slightly shorter (6–10 mm); lemma 5–7 mm, pubescent, awn 4–9 mm; palea usually equaling lemma. Central spikelet: sessile, lanceolate; glumes setaceous, 5–10 mm; lemma 5–7 mm, densely shortly hairy, awn 5–10 mm; palea subequaling lemma, apex truncate or acute. Anthers usually yellow, 1.1–2 mm. Fl. and fr. Jun–Sep.  $2n = 14$ .

Alkaline or saline moist meadows, riverside sands, pebbles; 1000–3800 m. Gansu, Qinghai, Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Russia (W Siberia), Turkmenistan, Uzbekistan].

**5. *Hordeum jubatum* Linnaeus, Sp. Pl. 1: 85. 1753.**

芒颖大麦 mang ying da mai

*Critesion geniculatum* Rafinesque, nom. illeg. superfl.; *C. jubatum* (Linnaeus) Nevski; *Elymus jubatus* (Linnaeus) Link.

Plants perennial, tufted, smooth and glabrous. Culms erect or decumbent at base, 30–60 cm tall, ca. 2 mm in diam., 3–5-noded. Leaf blade flat, 6–12 × 0.15–0.4 cm. Spike green or purplish green, nodding, 5–10 cm including awns, soft; rachis brittle. Lateral spikelets: reduced to 1–3 spreading awns, rarely male. Central spikelet: perfect; glumes spreading, awnlike, 2.5–6.5 cm, much longer than floret; lemma lanceolate 5–6(–8) mm, awn to 7 cm; palea equaling lemma. Fl. and fr. May–Aug.  $2n = 28^*$ .

Meadows, moist land. Heilongjiang, Liaoning [temperate regions of the world].

**6. *Hordeum spontaneum* K. Koch, Linnaea 21: 430. 1848.**

钝稃野大麦 dun fu ye da mai

Plants annual. Culms 40–50 cm tall, 5- or 6-noded, glabrous. Leaf sheath glabrous; ligule yellowish brown, ca. 1 mm, apex truncate; auricles present, 2–3 mm; leaf blade 5–10 × 0.4–0.6 cm. Spike distichous, greenish to dark brown, slightly compressed, 4–6 × ca. 1 cm; rachis ca. 3 mm, brittle, densely pubescent. Lateral spikelets: pedicellate, sterile; pedicel ca. 2 mm; lemma apex rounded-obtuse, cuspidate, very shortly awned, or with awn 6–10 mm. Central spikelets: sessile, 1–1.4 cm; glumes linear-lanceolate, densely hairy, apex tapering into slender, scabrous awn; lemma broadly elliptic, glabrous, apex prolonged into flat, very scabrous awn 5–17 cm. Fl. and fr. Apr–Jun.

Thickets, stony scree, pebbles, roadsides, waste places, often as a weed in cultivated fields of *Hordeum* and other crops; 3500–4000 m. Sichuan, Xizang, Yunnan [Afghanistan, India, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Turkmenistan, Uzbekistan; NE Africa, SW Asia].

1a. Apex of lemma of lateral spikelets rounded-obtuse ..... 6a. var. *spontaneum*

- 1b. Apex of lemma of lateral spikelets cuspidate or awned.  
2a. Apex of lemma of lateral spikelets cuspidate or with very short awn ..... 6b. var. *proskowetzii*  
2b. Apex of lemma of lateral spikelets with awn 6–10 mm ..... 6c. var. *ischnatherum*

**6a. *Hordeum spontaneum* var. *spontaneum***

钝稃野大麦(原变种) dun fu ye da mai (yuan bian zhong)

*Hordeum ithaburense* Boissier; *H. vulgare* Linnaeus subsp. *spontaneum* (K. Koch) Ascherson & Graebner.

Lateral spikelets: lemma apex rounded-obtuse. Fl. and fr. Apr–Jun.  $2n = 14$ .

Thickets, stony scree, pebbles, roadsides, waste places, often as a weed in cultivated fields of *Hordeum* and other crops; 3500–4000 m. Sichuan, Xizang [Afghanistan, India, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Turkmenistan, Uzbekistan; NE Africa, SW Asia].

**6b. *Hordeum spontaneum* var. *proskowetzii* Nábělek, Spisy Přír. Fak. Masarykovy Univ. 111: 32. 1929.**

芒稃野大麦 mang fu ye da mai

Lateral spikelets: lemma apex cuspidate or with very short awn. Fl. and fr. Apr–Jun.

Roadsides, waste places, as a weed in cultivated fields of *Hordeum*. Sichuan, Xizang [C and SW Asia].

**6c. *Hordeum spontaneum* var. *ischnatherum* (Cosson) Thellung, Fl. Adv. Montpellier, 161. 1912.**

尖稃野大麦 jian fu ye da mai

*Hordeum ithaburense* var. *ischnatherum* Cosson, Bull. Soc. Bot. France 11: 163. 1864; *H. ischnatherum* (Cosson) Schweinfurth.

Lateral spikelets: lemma apex with awn 6–10 mm. Fl. and fr. Apr–Jun.

Roadsides, as a weed in cultivated fields of *Hordeum*. Sichuan, Xizang [C and SW Asia].

**7. *Hordeum distichon* Linnaeus, Sp. Pl. 1: 85. 1753.**

二棱大麦 er leng da mai

Plants annual. Culms erect, 60–80 cm tall, 5- or 6-noded, smooth, glabrous. Leaf sheath usually shorter than internode; ligule membranous; auricles present, surrounding culm; leaf blade 15–20 × 0.6–0.7 cm. Spike erect, distichous, 10–20 × 0.7–0.8 cm; rachis flexible, margin pubescent. Lateral spikelets: pedicellate, sterile; pedicel ca. 2 mm; glumes ca. 5 × 0.5 mm, awn slender, ca. 5 mm; lemma ca. 8 mm. Central spikelet: fertile; glumes ca. 5 mm, awn slender, ca. 5 mm; lemma ca. 10 mm, awn to 15 cm; caryopsis adherent to or free from lemma and palea. Fl. and fr. Jul–Aug.

Cultivated as a fodder plant, or a weed in fields of *Hordeum vulgare*. Anhui, Fujian, Hebei, Henan, Qinghai, Xizang; perhaps other provinces [widely cultivated in temperate regions].

- 1a. Caryopsis of central spikelet adherent to lemma and palea ..... 7a. var. *distichon*  
1b. Caryopsis of central spikelet free from lemma and palea ..... 7b. var. *nudum*

**7a. *Hordeum distichon* var. *distichon***

二棱大麦(原变种) er leng da mai (yuan bian zhong)

*Hordeum vulgare* Linnaeus convar. *distichon* (Linnaeus) Alefeld; *H. vulgare* subsp. *distichon* (Linnaeus) Koernicke; *H. vulgare* var. *distichon* (Linnaeus) J. D. Hooker.

Central spikelet: caryopsis adherent to lemma and palea. Fl. and fr. Jul–Aug.  $2n = 14$ .

Cultivated as a fodder plant, or a weed in fields of *Hordeum vulgare*. Hebei, Qinghai, Xizang [widely cultivated in temperate regions].

**7b. *Hordeum distichon* var. *nudum* Linnaeus, Sp. Pl. 1: 85. 1753.**

裸麦 luo mai

*Hordeum distichon* convar. *nudum* (Linnaeus) Tzvelev; *H. distichon* subsp. *nudum* (Linnaeus) Rothmaler; *H. nudum* (Linnaeus) Arduino; *H. sativum* Jessen var. *nudum* (Linnaeus) Vilimorin; *H. vulgare* var. *nudum* (Linnaeus) J. D. Hooker.

Central spikelet: caryopsis free from lemma and palea. Fl. and fr. Jul–Aug.  $2n = 14$ .

Cultivated as a fodder plant, or a weed in fields of *Hordeum vulgare*. NW and SW China [widely cultivated in temperate regions].

**8. *Hordeum lagunculiforme* Bachteev, Kungl. Lantbrukskōgskolans Ann. 23: 309. 1957.**

瓶大麦 ping da mai

*Hordeum spontaneum* K. Koch var. *lagunculiforme* (Bachteev) Bachteev.

Plants annual. Culms erect, smooth, glabrous. Leaf sheath usually glabrous; ligule membranous; auricles present; leaf blade flat. Spike hexastichous; rachis brittle. Lateral spikelets: pedicellate, fertile; pedicel 1.5–2 mm. Central spikelet: sessile, fertile. Fl. and fr. Jun–Sep.  $2n = 14$ .

Field margins, roadsides. Qinghai, Sichuan, Xizang [Kashmir, Russia, Turkmenistan].

**9. *Hordeum agriocriton* A. E. Åberg, Lantbrukskōgskolans Ann. 6: 160. 1938.**

六棱大麦 liu leng da mai

*Hordeum vulgare* Linnaeus subsp. *agriocriton* (A. E. Åberg) Å. Löve.

Plants annual. Culms erect, 60–90 cm, smooth, glabrous. Leaf sheath usually glabrous; ligule 1–2 mm, membranous; auricles present, lanceolate; leaf blade flat, 10–15(–20) × 1–1.5 cm. Spike hexastichous, dense; rachis brittle. Spikelets all sessile, fertile, and similar. Glumes 5–6 × ca. 1 mm, densely puberulent; awn slender, ca. 10 mm. Lemma to 14 mm; awn ca. 15 mm. Caryopsis oblong, ca. 12 mm. Fl. and fr. Jun–Sep.  $2n = 14$ .

Usually a weed in fields of *Hordeum vulgare*. Qinghai, Sichuan,

Xizang [C and SW Asia, E Mediterranean region].

**10. *Hordeum vulgare* Linnaeus, Sp. Pl. 1: 84. 1753.**

大麦 da mai

Plants annual. Culms erect, 50–100 cm tall, smooth, glabrous. Leaf sheath usually glabrous; auricles present; ligule 1–2 mm, membranous; leaf blade 9–25 × 0.6–2 cm. Spike hexastichous, dense; rachis flexible. Spikelets all sessile, fertile, and

similar. Glumes linear-lanceolate at base, puberulent; awn 8–14 mm. Lemma apex with long awn 8–15 cm or 3-forked appendage. Palea equaling lemma. Caryopsis adherent to or free from lemma and palea. Fl. and fr. Jun–Aug.

Commonly cultivated as a food and fodder plant. Anhui, Fujian, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Taiwan, Xinjiang, Xizang, Yunnan, Zhejiang [cultivated worldwide in all non-tropical countries and in montane areas of tropics].

- 1a. Caryopsis adherent to lemma and palea ... 10a. var. *vulgare*
- 1b. Caryopsis free from lemma and palea.
  - 2a. Apex of lemma with long awn  
8–15 cm ..... 10b. var. *coeleste*
  - 2b. Apex of lemma with 3-forked  
appendage ..... 10c. var. *trifurcatum*

**10a. *Hordeum vulgare* var. *vulgare***

大麦(原变种) da mai (yuan bian zhong)

*Hordeum sativum* Jessen, nom. illeg. superfl.; *H. sativum* var. *vulgare* (Linnaeus) K. Richter; *Triticum vulgare* (Linnaeus) Salisbury (1796), not Villars (1787).

Lemma apex with long awn 8–15 cm. Caryopsis adherent to lemma and palea. Fl. and fr. Jun–Aug.  $2n = 14$ .

Commonly cultivated as a food and fodder plant in China [cultivated worldwide in all non-tropical countries and in montane areas of tropics].

**10b. *Hordeum vulgare* var. *coeleste*** Linnaeus, Sp. Pl. 1: 85. 1753.

青稞 qing ke

*Hordeum coeleste* (Linnaeus) P. Beauvois; *H. sativum* var. *coeleste* (Linnaeus) Vilmorin.

Lemma with long awn 8–15 cm. Caryopsis free from lemma and palea. Fl. and fr. Jun–Sep.  $2n = 14$ .

Sometimes cultivated in NW and SW China [cultivated in other non-tropical countries].

**10c. *Hordeum vulgare* var. *trifurcatum*** (Schlechtendal) Alesfeld, Landw. Fl. 341. 1866.

藏青稞 zang qing ke

*Hordeum coeleste* var. *trifurcatum* Schlechtendal, Linnaea 11: 543. 1837; *H. aegiceras* Nees ex Royle; *H. sativum* var. *trifurcatum* Schlechtendal ex Orlov & A. E. Åberg; *H. trifurcatum* (Schlechtendal) Wender; *H. vulgare* subsp. *aegiceras* (Nees ex Royle) Å. Löve; *H. vulgare* var. *aegiceras* (Nees ex Royle) Aitchison.

Lemma apex with 3-forked appendage. Caryopsis free from lemma and palea. Fl. and fr. Jun–Jul.  $2n = 14$ .

Sometimes cultivated. Gansu, Qinghai, Sichuan, Xizang [cultivated in other non-tropical countries].

