

NEW TAXA OF THE GENUS *ELYMUS* FROM THE QING-ZANG PLATEAU

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Abstract

Two new species and one new variety of the genus *Elymus* L. from the Qing-Zang Plateau are reported. They are *E. molliusculus* L. B. Cai, *E. alpinus* L. B. Cai and *E. sibiricus* L. var. *erectiuculus* L. B. Cai.

Key words: *Elymus*; New taxa; The Qing-Zang (Tibet) Plateau

***Elymus molliusculus* L. B. Cai, sp. nov. Fig. 1: 1~9**

Species nova *E. tangutoro* (Nevski) Hand.-Mazz. Similis, sed spicis mollibus, viridulis; spiculis 2~5 vulgo natis e nodo; glumis 3~4-nervibus, margine membranaceis; aristis lemmatum gracilibus, 3~5 mm longis; vaginis foliorum superioribus internodiis evidenter longioribus differt.

Herba perennis, fibris crassiusculis longiusculis. Culmi solitarii vel laxe caespitosi, basi leviter geniculati, glabri, 55~110 cm alti, 3~5 mm diam., saepe 5-nodes. Vaginae foliorum glabrae, superiores internodiis evidenter longiores; ligulae papyraceae, apice truncatae vel rotundatae, 0.4~1mm longae; laminae complanatae, 9~25 cm longae, 5~12 mm latae, utrinque glabrae. Spica erecta, conferta, mollis, viridula, 8~13 cm longa, 8~12 mm lata; rhachis dorso glabra vel scaberula, secus acies breviter ciliata, internodiis generatim 4~8 mm longis; spiculae 2~5 vulgo natae e nodo, 9~15 mm longae (aristis exclusis), 3~5 -florae, rhachillis dense puberulis; glumae lineari-lanceolatae, 3~4 -nerves, secus nervos scabrae, margine membranaceae, duae subaequales, 8~9 mm longae, apice acuminatae vel mucronibus 1~2 mm longis praeditae; lemmata lanceolata, dorso glabra vel sparse spinulosa, superne distincte 5~nervia, id primum 8~9 mm longum, apice aristatum, arista gracili 3~5mm longa; paleae lemmataaequantas, vel eis leviter longiores, apice retusae, superne ad carinas sparse breviter spinosae, inter carinas saepe glabrae; antherae flavae, 2~2.6mm longae; ovaria apice pubentia.

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Xizang: Changdu, in pratis clivorum, alt, 3950 m, Jul. 16, 1997, P. C. Kuo et W. Y. Wang 21559 (holotypus, HNWP); **Qinghai:** Yushu, alt. 3700 m, Jul. 12, 1964, Y. C. Yang 0359.

This species resembles *E. tangutorus* (Nevski) Hand. -Mazz. , but differs by the viridescent, gentle and agreeable spikes, the spikelets usually in twos to fives at each node of the spike-axis, the 3- to 4-nerved glumes, with membranous margins, the lemma awns thin, delicate, 3~5mm long, and the leaf sheaths at upper part of culm being obviously longer than the internodes.

Perennial grasses, fibrous roots comparatively thick, long. Culms solitary or loosely caespitose, slightly geniculate at lower part, glabrous, 55~110 cm tall, 3~5mm in diameter, usually with 5 nodes. Leaf sheaths glabrous, the upper ones obviously longer than the internodes; ligules papyraceous, truncate or rotundate at the top, 0.4~1mm long; leaf blades flat, 9~25 cm long, 5~12mm broad, both surfaces glabrous. Spike erect, dense, viridescent, gentle and agreeable, 8~13 cm long, 8~12mm broad; back of rachis glabrous or slightly scabrous, margin breviciliate, internodes generally 4~8mm long; spikelets usually in twos to fives at each node of the rachis, 9~15mm long (excluding awn), 3- to 5-flowered, rachilla densely puberulent; glumes linear-lanceolate, 3- to 4-nerved, with scabrous nerves, with membranous margins, nearly equal, 8~9mm long, with acuminate tip or apex ending in a 1~2mm long mucronation; lemmas lanceolate, glabrous or sparsely spinulate on the back, obviously with 5 veins at upper part, first lemma 8~9mm long and with a thin delicate 3~5mm long awn at the apex; palea equal to or slightly longer than lemma, with slightly emarginate apex, with sparsely spinuliferous keels at upper part, usually glabrous between keels; anthers yellow, 2~2.6mm long; ovary with a puberulous tip.

Elymus alpinus L. B. Cai, sp. nov. Fig. 1: 10~18

Species nova *E. nutanti* Griseb. Affinis, sed spicis erectis vel leviter flexis, viridulis; glumis anguste lanceolatis, 1~3-nervibus, 3~4mm longis; aristis lemmatum gracilibus, 3~7mm longis; paleis lemmatibus leviter longioribus, apice emarginatis; culmis saepe 5-nodibus; vaginis foliorum internodiis longioribus different.

Herba perennis, radicibus fibrosis. Culmi erecti, solitarii vel laxe caespitosi, 25~35 cm alti, saepe 5-nodes. Vaginae foliorum glabrae, internodiis longiores; ligulae breves, circ. 0.3mm longae, apice truncatae; laminae complanatae vel leviter involutae, 6~10 cm longae, 3~5mm latae, superne et inferne glabrae, sed margine ciliatae. Spica conferta, erecta vel leviter flexa, viridula, 4~6cm longa, circ. 9mm lata; rhachis dorso glabra, secus acies breviter ciliata, internodiis vulgo 2~3mm longis; spiculae binae vel superiores solitariae, pedicellis brevissimis, 10~12mm longae (aristis exclusis), 3~4-florae, rhachillis dense puberulis; glumae anguste lanceolatae, 1~3-nerves, nervo medio scabro, duae subaequales, 3~4mm longae, apice acuminatae; lemmata lanceolata, dorso pubescentia, su-

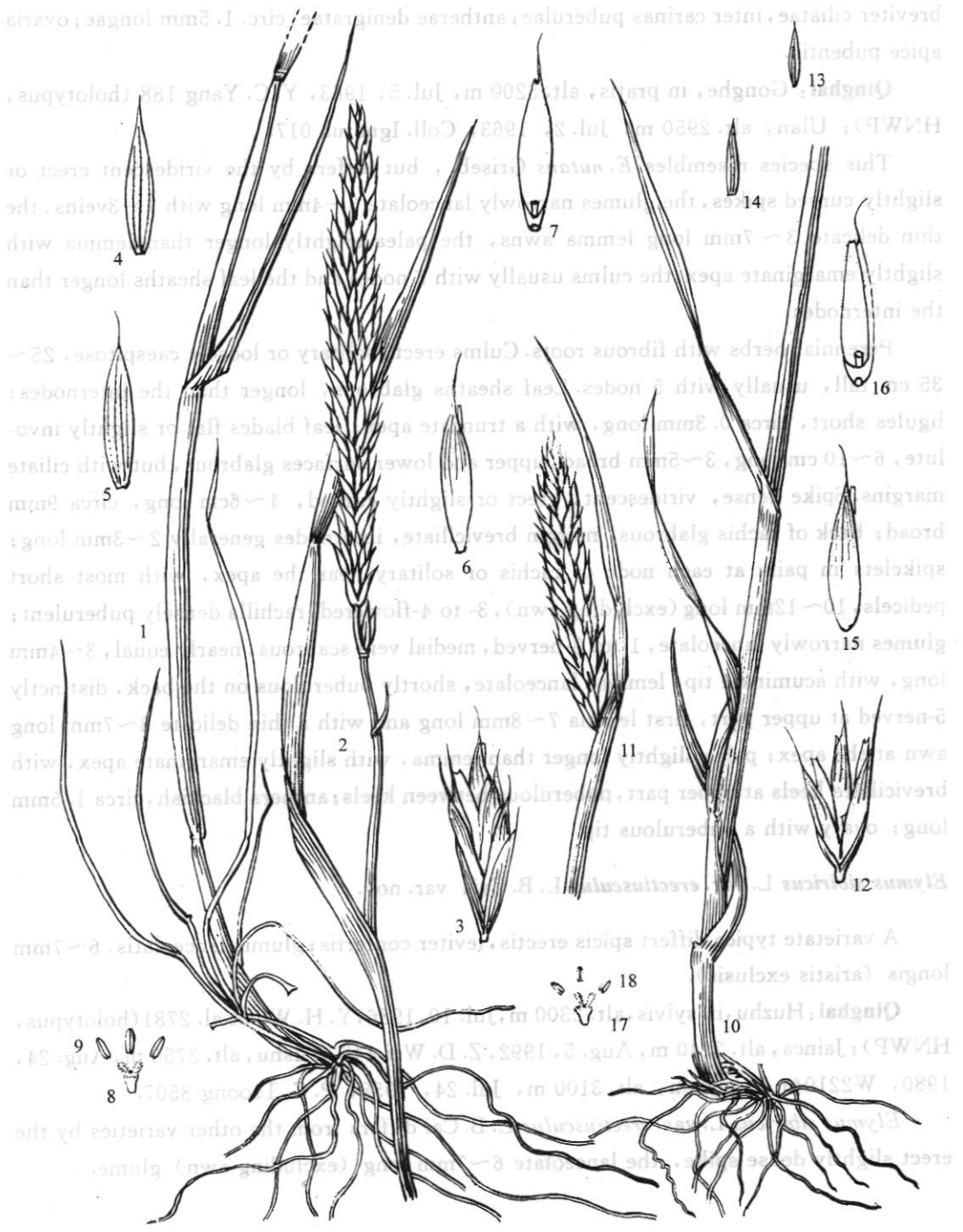


Fig. 1 1~9. *Elymus molliusculus* L. B. Cai; 10~18. *Elymus alpinus* L. B. Cai. 1, 10. Lower portion of the plant; 2, 11. Spike; 3, 12. Spikelet; 4, 13. First glume; 5, 14. Second glume; 6, 15. Dorsal view of the first floret; 7, 16. Ventral view of the first floret; 8, 17. Pistil; 9, 18. Anthers. (drawn by Y. Wang)

perne distincte 5-nervia, id primum 7~8mm longum, apice aristatum, arista gracili, 3~7mm longa; paleae lemmatibus leviter longiores, apice emarginatae, superne ad carinas

breviter ciliatae, inter carinas puberulae; antherae denigratae, circ. 1.5 mm longae; ovaria apice pubentia.

Qinghai: Gonghe, in pratis, alt. 3200 m, Jul. 5, 1963, Y. C. Yang 188 (holotypus, HNWP); Ulan, alt. 2950 m, Jul. 2, 1963, Coll. Ignotus 017.

This species resembles *E. nutans* Griseb., but differs by the viridescens erect or slightly curved spikes, the glumes narrowly lanceolate 3~4 mm long with 1~3 veins, the thin delicate 3~7 mm long lemma awns, the palea slightly longer than lemma with slightly emarginate apex, the culms usually with 5 nodes and the leaf sheaths longer than the internodes.

Perennial herbs with fibrous roots. Culms erect, solitary or loosely caespitose, 25~35 cm tall, usually with 5 nodes. Leaf sheaths glabrous, longer than the internodes; ligules short, circa 0.3 mm long, with a truncate apex; leaf blades flat or slightly involute, 6~10 cm long, 3~5 mm broad, upper and lower surfaces glabrous, but with ciliate margins. Spike dense, viridescens, erect or slightly curved, 4~6 cm long, circa 9 mm broad; back of rachis glabrous, margin breviciliate, internodes generally 2~3 mm long; spikelets in pairs at each node of rachis or solitary near the apex, with most short pedicels, 10~12 mm long (excluding awn), 3- to 4-flowered, rachilla densely puberulent; glumes narrowly lanceolate, 1- to 3-nerved, medial vein scabrous, nearly equal, 3~4 mm long, with acuminate tip; lemmas lanceolate, shortly puberulous on the back, distinctly 5-nerved at upper part, first lemma 7~8 mm long and with a thin delicate 3~7 mm long awn at the apex; palea slightly longer than lemma, with slightly emarginate apex, with breviciliate keels at upper part, puberulous between keels; anthers blackish, circa 1.5 mm long; ovary with a puberulous tip.

Elymus sibiricus L. var. *erectiusculus* L. B. Cai, var. nov.

A varietate typica differt spicis erectis, leviter confertis; glumis lanceolatis, 6~7 mm longis (aristis exclusis).

Qinghai: Huzhu, in sylvis, alt. 2300 m, Jul. 10, 1986, Y. H. Wu et al. 2781 (holotypus, HNWP); Jainca, alt. 2140 m, Aug. 5, 1992, Z. D. Wei 443; Yushu, alt. 3750 m, Aug. 24, 1980, W22104; Monyuan, alt. 3100 m, Jul. 24, 1958, P. C. Tsong 8507.

Elymus sibiricus L. var. *erectiusculus* L. B. Cai differs from the other varieties by the erect slightly dense spike, the lanceolate 6~7 mm long (excluding awn) glume.