



Bromus diandrus (Poaceae): A new record for North India

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Abstract

Bromus diandrus Roth, a grass species is reported for the first time from North India from the hills of Kalpa to Reckong Peo in the district Kinnaur of Himachal Pradesh. A brief description and illustration of the species are provided here for easy identification.

Keywords: *Bromus*, Kalpa, Kinnaur, North India, Poaceae

Introduction

While inventorying the grasses of Himachal Pradesh, the authors collected an interesting species of the genus *Bromus* L. (Poaceae), for the first time from Kalpa and Reckong Peo hills of the district Kinnaur of Himachal Pradesh. On critical examination with the help of relevant literature (Bor, 1960; Chawla et al., 2012; Hooker, 1896; Edgar & Connor, 2000 and Clayton et al., 2006), it has been identified as *Bromus diandrus* Roth.

In India, this species has been collected earlier from Ootacamund (Nilgiris, Tamil Nadu) by C. McCann in 1920 and this specimen is available in the Blatter Herbarium (Bor, 1960). It is reported here for the first time from Northern India. Description and illustration are provided to facilitate easy identification.

Bromus diandrus Roth, Bot. Abh. Beobacht 44. 1787; Bor, Grasses of Burma, Ceylon, India and Pakistan 454. 1960. *Bromus gussonii* Parl., Pl. Nov. 66. 1842.

Fig. 1

Annual grass, 20–90 cm high, loosely tufted or consisting of a solitary culm; culms erect or ascending; internodes with very short hairs below nodes and below panicles. Leaf-blade 30 × 0.2–0.7 cm, with short scattered hairs, scabrid near acute tip; ligule 1.5–4 mm, denticulate to lacerate; leaf-sheath connate along margins and with soft, short, spreading hairs; upper sheaths mostly glabrous near base. Panicle 10–30 cm long, very lax and nodding, branches spreading, slender, scabrid, tipped by 1–(3) spikelets. Spikelets 3.8–4 cm long,

5–8-flowered, oblong-lanceolate to later wedge-shaped and gaping, grayish green to purplish. Glumes unequal, very narrow, acuminate, membranous, glabrous, but sparsely scabrid on keels and nerves in upper $\frac{1}{2}$ to $\frac{3}{4}$; lower 13–18 mm long; 1–(3)-nerved; upper 20–26 mm, 3–(5)-nerved. Lemma 20–30 mm long, 7-nerved, rounded, lanceolate, minutely scabrid, acute to acuminate and 2 lobed at apex, hyaline, lobes 4–5 mm long; awn 30–60 mm long. Palea c. $\frac{2}{3}$ length of lemma or nearly equal to lower glumes; keels sparsely ciliate, adhering to caryopsis. Callus with minute hairs. Rachilla 4–6 mm, finely, minutely scabrid. Stamens 2 or rarely 3; anther c. 1.3 mm long. Caryopsis 11–13 × 1.5–2.8 mm.

Flowering & Fruiting: May – July.

Habitat & Ecology: This species is seen on open hill slopes and in the exposed rocky areas of open grasslands in Kalpa and Reckong Peo Forests of the district Kinnaur in Himachal Pradesh. The associated species in both localities are *Bromus inermis* Leyss., *B. pectinatus* Thunb., *B. catharticus* Vahl., *Avena fatua* L. and *Oryzopsis aequiglumis* Duthie.

Distribution: Native of Mediterranean region and South and Central Western Europe, but widely introduced and naturalized in many other countries.

Specimens examined: INDIA, Himachal Pradesh, Kinnaur District, Kalpa, 31.5333° N, 78.2500° E,

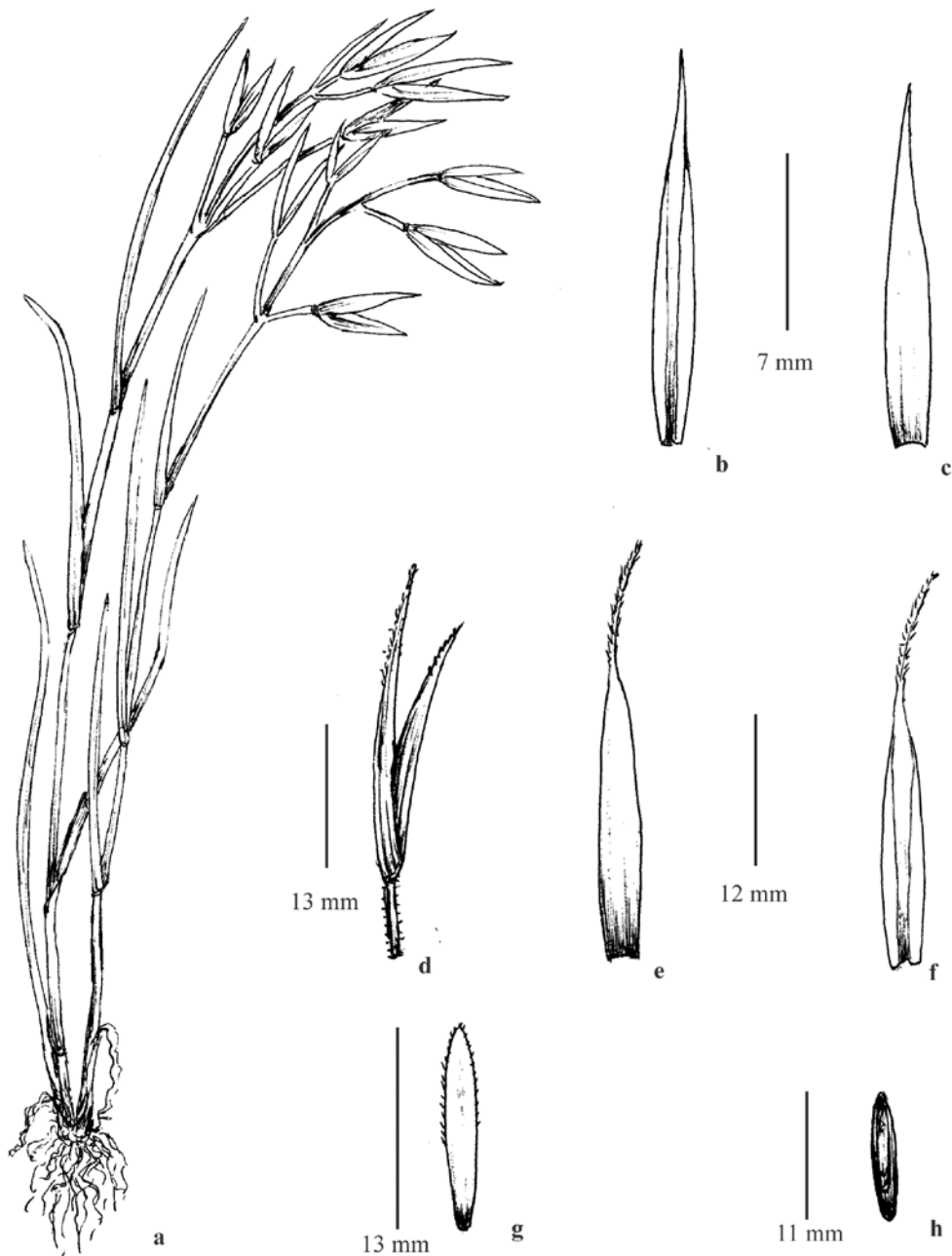


Fig.1. *Bromus diandrus* Roth: **a.** Habit; **b.** Lower glume; **c.** Upper glume; **d.** Lower lemma; **e-f.** Upper lemma, **e.** Dorsal view, **f.** Ventral view; **g.** Palea; **h.** Caryopsis.

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Notes: *Bromus diandrus* can be distinguished from other annual *Bromus* species by its length of lower and upper glumes, wedge-shaped spikelets, lower and upper glumes scarios on mid-nerves and acute to acuminate at tips. The lemmas are 7-

nerved and outer 2 nerves are narrower, dominant and hairy above the middle.

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