

Bromopsis kresnaense (Poaceae) – a new species from Bulgaria

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Received: May 21, 2021 ▷ Accepted: September 07, 2021

Abstract. A description is provided of a new perennial plant species *Bromopsis kresnaense* (Poaceae) from a polyploid group, formerly traditionally treated within *Bromus* sect. *Pnigma* Dumort. This article includes a diagnosis and a photo of the holotype of the species. Morphological comparison with the most similar congeneric taxa – *B. cappadocica* subsp. *lacmonica* and *B. cappadocica* subsp. *sclerophylla*, is also provided.

Key words: *Bromus* s.l., Gramineae, natural habitats, new taxon, Valley of River Struma

Introduction

The genus *Bromopsis* Fourr. (Poaceae) has been separated from *Bromus* s.l. It comprises perennial species, formerly traditionally treated within *Bromus* sect. *Pnigma* Dumort., with narrow and more or less parallel-sided spikelets with 1–3 nerved lower and 3–5-nerved upper glume and the awn usually shorter than the lemma (Valdés & Scholz 2006). *Bromopsis* is represented in the Bulgarian flora by seven species: *B. benekenii* (Lange) Holub, *B. cappadocica* (Boiss. & Balansa) Holub, *B. erecta* (Huds.) Fourr., *B. inermis* (Leyss.) Holub, *B. moesiaca* (Velen.) Holub, *B. ramosa* (Huds.) Holub and *B. riparia* (Rehmann) Holub (Valdés & al. 2009). *Bromopsis cappadocica* is a polymorphic species, part of a polyploid complex, and is represented in the Bulgarian flora with *B. c.* subsp. *lacmonica* (Hauskn.) H. Scholz & Valdés. The latter taxon is a Balkan endemic, distributed in Albania, Bulgaria and Greece (Valdés & al. 2009). In Bulgaria, it is spread in the following floristic regions: Vitosha Region, Znepole Region, West Frontier Mts, Mt Slavyanka, Pirin Mts, Mt Sredna Gora (Western) and the Rhodopi Mts (Western and Central), at 1600–2000 m a.s.l. (Assyov & Petrova 2012, sub *Bromus lacmonicus* Hauskn.).

Plant material, morphologically similar to *Bromopsis cappadocica* s.l., has been collected in the Valley of River Struma, SW Bulgaria. However, it has a distinctive morphology and apparently represents a yet undescribed taxon. Therefore, the aim of the present article is to describe a new to science species.

Material and methods

Morphological characters were noted from the holotype specimen and from herbarium material of the closely related species stored in the Bulgarian herbaria (SO, SOM). Relevant taxonomic literature was also consulted, e.g. Smith (1985) and Valdés & Scholz (2006).

Results

Bromopsis kresnaense D. Dimitrov, **sp. nov.** (Fig. 1)

Holotypus: Valley of River Struma (Southern): Melo Hill over Kresna town, sandy limestone hills, 232 m a. s. l., FM82, 18.05.2014, leg. et det. D. Dimitrov (SOM 177 428).

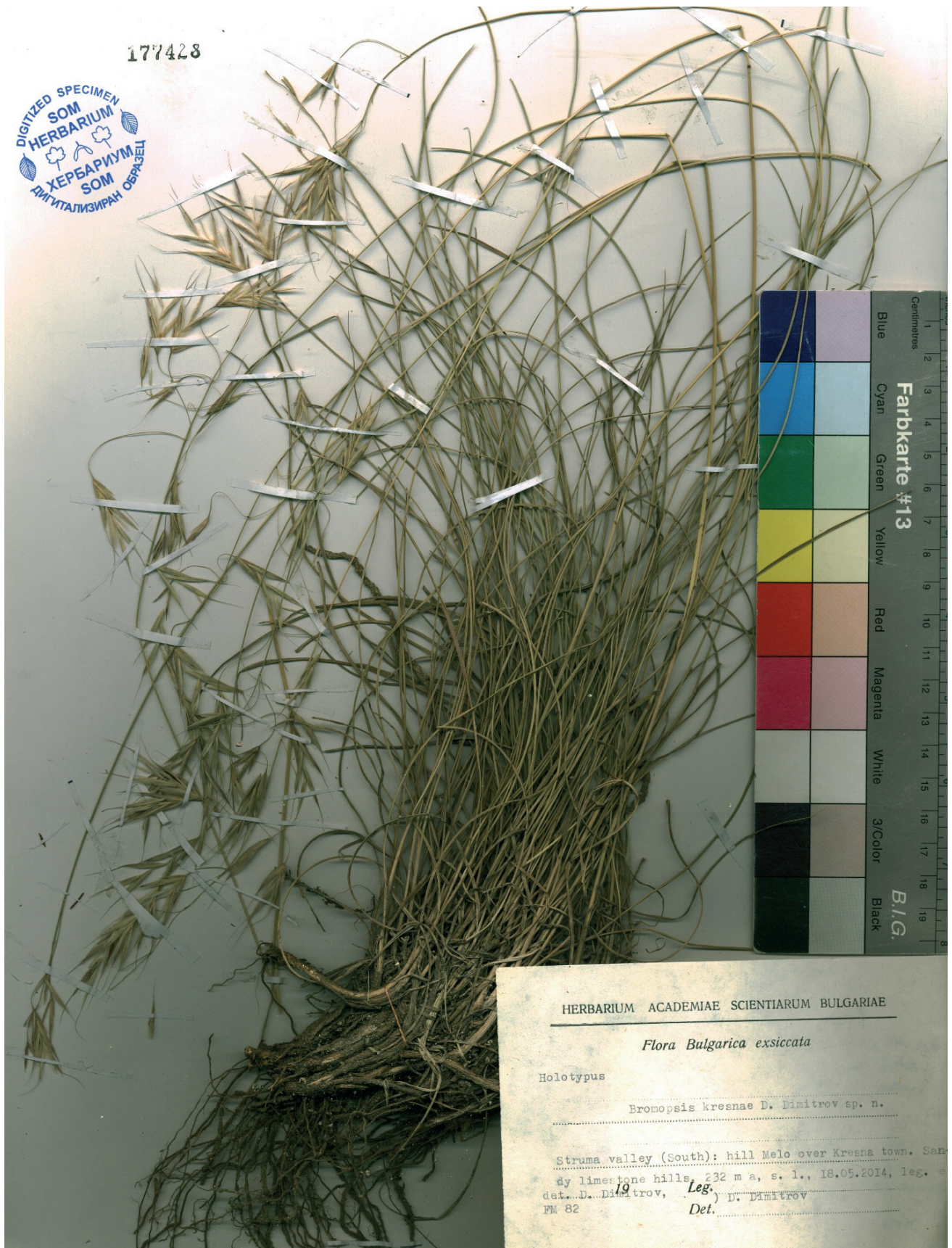


Fig. 1. A photograph of the holotypus of *Bromopsis kresnaense*.

Table 1. Comparison of the morphological characters of the examined taxa

Organs	<i>Bromopsis kresnaense</i>	<i>Bromopsis cappadocica</i> subsp. <i>lacmonica</i>	<i>Bromopsis cappadocica</i> subsp. <i>sclerophylla</i>
Rhizome	Caespitose or absent	Densely caespitose, occasionally short	Caespitose or absent
Culmus	60 cm, erect	25–45 cm, slender erect	25–40 cm, erect
Panicle	narrow-ovate, 9.5 cm long, 3.5 cm wide, with 3 branches at the lowest node	5–6 cm long, with 5 erect or ascending branches at the lowest node	3–9 cm long, with 5 slender flexuous branches
Number of spikelets	Solitary spikelet	1–2 spikelets, often greenish purple	Solitary spikelet
Spikelets length	27 mm	11–15 mm	14–25 mm, lanceolate
Lower glume length	7 mm	7–8 mm	7–8 mm
Upper glume length	13 mm	5–7 mm	5–7 mm
Fertile lemma length	14 mm, dense long-haired	8–10 mm, lanceolate	8–10 mm, without keel
Palea length	11.2 mm, without keel	8–10 mm, short-haired	8–10 mm, long-haired
Awn length	9 mm	5–8 mm	4–6 mm
Number of florets	7	3–5	5–6
Anther length	6.7 mm	2–2.5 mm	2–2.75 mm

Diagnosis

Planta perennis. Caulis ad 60 cm altus. Folia basalia involutus, 0.8 mm lati et 14 cm longa. Panicula angusta ovata, 9.5 cm longa et 3.5 cm lata. Rami paniculae scabri cum una spicula, spiculae longiorem. Spiculae septem flores, superior flower sterilis. Spicula 27 mm longa et 8 mm lata. Gluma inferior 7 mm longa et 0.8 mm lata, lanceolate pilosa. Glumella inferior 14 mm longa dense long pilosa. Arista affix sub apicem glumellae inter due denti, 9 mm longa. Glumella superior 11.2 mm longa, sine arista. Pilosa cum brevi densi pilosae et sine carina. Anthers 6.7 mm. Floret V – VI, fructet VI – VII.

Description

Perennial. Stems up to 60 cm. Lower leaves involute, 0.8 mm wide and 14 cm long. Panicle narrow oval, 9.5 cm long and 3.5 cm wide. Branches scabrid, with 1 spikelet, longer than the spikelet. Spikelets 27 mm long and 8 mm wide, with seven florets, upper flower sterile. Lower gluma 7 mm long and 0.8 mm wide, lanceolate, hairy. Fertile lemma 14 mm long, dense, hairy. Awn affix under apex of lemma between two teeth, 9 mm long. Palea 11.2 mm long, without awn. Pilose, with short dense hairs and without keel. Anthers 6.7 mm. Flowering May-June, fruiting June-July.

This new species differs from the closest to it *Bromopsis cappadocica* subsp. *sclerophylla* and *B. c.* subsp. *lacmonica* in size and in the indumentum of their vegetative and generative organs.

In *B. kresnaense*, the lower leaves are 14 cm long, involute and about 0.8 mm wide. In *B. c.* subsp. *sclerophylla*, the lower leaves are involute, 2–3.5 cm long and 1.5 mm wide. Leaf-blade surface is pilose, sparsely hairy. *Bromopsis cappadocica* subsp. *lacmonica* has lower leaves, which are 10 cm long and 1.5 mm wide. Leaf sheaths are covered with long patent hairs.

The panicle of *B. kresnaense* is narrowly ovate, 9.5 cm long and 3.5 cm wide, with three branches at the lowest node, panicle branches are scabrid. In *B. c.* subsp. *sclerophylla*, the panicle is 3–9 cm long and erect, with slender flexuous branches; and in *B. c.* subsp. *lacmonica* it is 5–6 cm long, with five erect or ascending branches at the lowest node.

The spicules of *B. kresnaense* are with seven florets and the upper flower is sterile. The spicules are 27 mm long and 8 mm wide. The spicules of *B. c.* subsp. *sclerophylla* are with 5–6 fertile florets, 14–25 mm long and 3–5 mm wide, lanceolate and laterally compressed. The spicules of *B. c.* subsp. *lacmonica* are 11–15 mm long, with 3–5 florets, densely hairy. The lowest glume of the new species is 7 mm long, with one vein. The upper glume is 13 mm long, with three veins, short-

ly hairy. The lower glume of *B. c.* subsp. *sclerophylla* is 5–7 mm long, the upper one has an awn that is 4–6 mm long. *Bromopsis cappadocica* subsp. *lacmonica*'s lower glume is 5–7 mm long, while the upper one's length is 7–8 mm. The lemma of the new species is 14 mm long, with dense long hairs. The awn here is attached under the top of the lemma, between two denticulae. The length of the awn is 9 mm. The palea is 11.2 mm, without an awn. The lemma of *B. c.* subsp. *sclerophylla* is 8–10 mm long, puberulous. The awn is 4.6 mm long. *Bromopsis cappadocicus* subsp. *lacmonica*'s paleas are 8–10 mm long, short-haired. The awn is 5–8 mm long.

The anthers of *B. kresnaense* are 6.7 mm long, of *B. c.* subsp. *sclerophylla* are 2–2.75 mm, while of *B. c.* subsp. *lacmonica* are 2–2.5 mm long (Table 1).

Key to the new species and the most similar taxa

1. Leaf sheaths with long patent hairs
 *B. cappadocica* subsp. *lacmonica*
- 1*. Leaf sheaths without long patent hairs 2
2. Lower leaves involute, 14 cm long, 0.8 mm wide,
 leaf blade surface glabrous
 *B. kresnaense*
- 2*. Lower leaves involute, 2–3.5 cm long, 1.5 mm wide,
 leaf blade surface hairy
 *B. cappadocica* subsp. *sclerophylla*

Habitat

Bromopsis kresnaense inhabits habitat H3.1B2 Bare siliceous inland cliffs (EUNIS). In Bulgaria, it has been assessed as 'Vulnerable [B2 D2 H2 I J]' (Rousakova 2015, as '14H3. Pyramids in sand-clay rocks'). The accompanying species are: *Centaurea immanuelis-loewii*, *Juniperus excelsa*, *Ficus carica*, and *Juniperus oxycedrus*. There is a great probability that this species could also be found on the territory of Melnik Pyramids.

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