

## Two new varieties in *Stipa* (Poaceae) from Central Asia

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Two new varieties in *Stipa* (Poaceae) from Central Asia. – Acta Mus. Siles. Sci. Natur. 65: 278-280, 2016.

**Abstract:** The paper presents descriptions of two new taxa, *Stipa* × *brevicallosa* var. *hissarensis* and *Stipa orientalis* var. *ladakhorum*. Both of them differ from the nominal varieties in having densely pubescent (not glabrous or scabrous) leaves of vegetative shoots. First of the above mentioned taxa occurs in Tajikistan (Pamir Alai Mts) whereas the second in India (Western Himalayas). Images of type specimens of both taxa are provided.

**Key words:** feather grasses, var. nov., Tajikistan, India, Pamir Alai, Himalayas

### Introduction

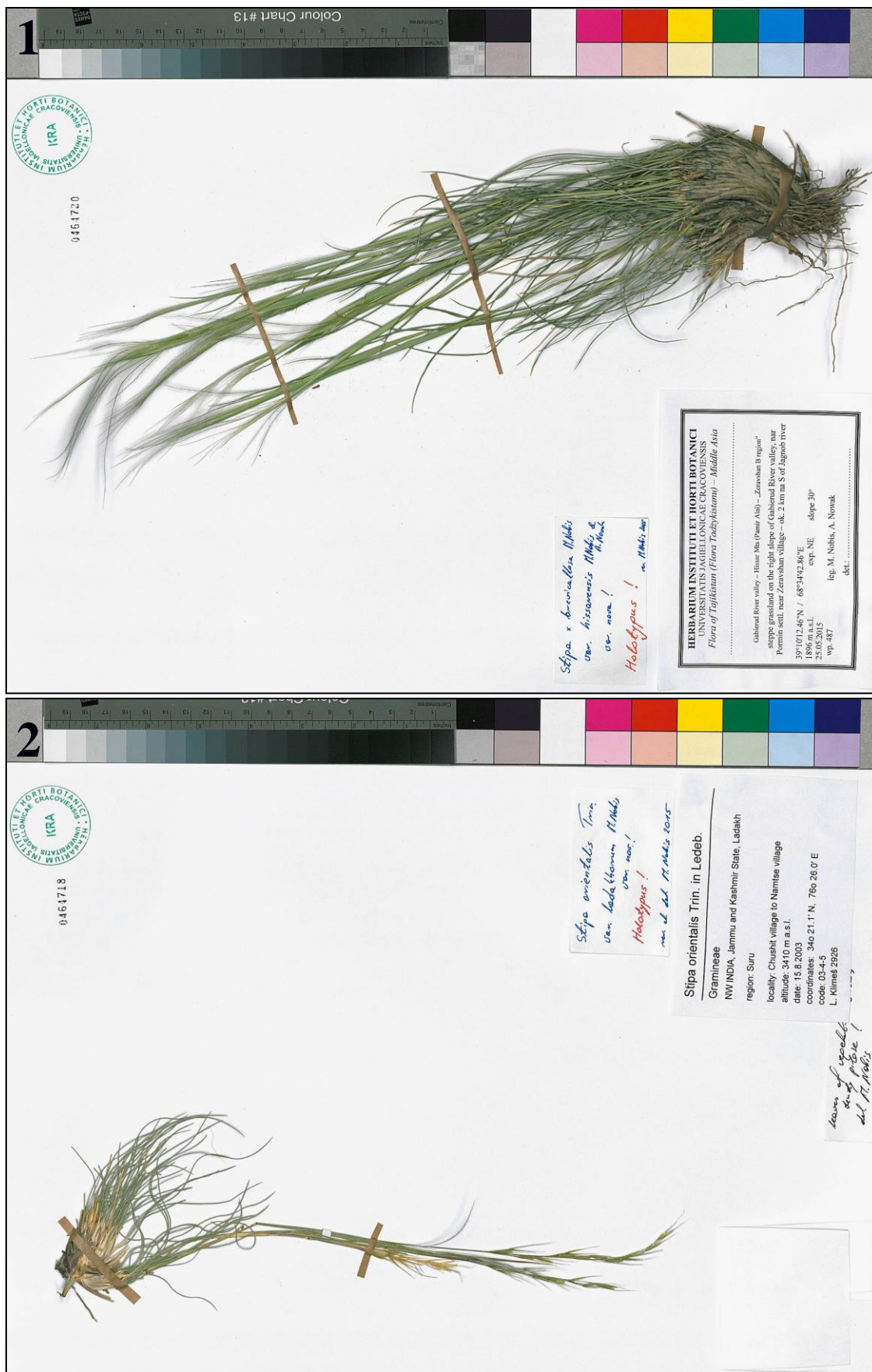
The genus *Stipa* L. is one of the largest genera in the family Poaceae in the Old World. It comprises over 150 species distributed in open grasslands and steppes, with species diversity in warm temperate regions over Europe, Asia and North Africa (Tzvelev 1976, Martinovský 1980, Nobis 2014, Nobis *et al.* 2016). It is worth noticing that species belonging to the genus that are new to science continue to be described. Approximately twenty species have been described in the last fifteen years from countries such as Bhutan, Spain, Morocco, Italy, Turkey, northern Africa, Kazakhstan, Kyrgyzstan, Mongolia, China, India and Tajikistan. Nevertheless, many regions, especially in mountains areas of Asia, still remain unexplored, and detailed studies are revealing new information on the distribution of feather grasses and new *Stipa* taxa (e.g. Noltie 1999, Kotukhov 2002, Nobis 2011, 2013, Nobis *et al.* 2014a, 2014b, 2014c, 2016). This paper is a result of revision of herbarium materials as well as field studies carried out in the mountains of Central Asia in 2007–2016. The aim of this paper is to describe two new taxa of *Stipa* which were found during our studies. Because both of them differ from the most similar taxa only in having densely pubescent (not glabrous or scabrous) leaves of vegetative shoots, we decided to described them in the rank of variety.

***Stipa* × *brevicallosa* M. Nobis (2013: 1340) var. *hissarensis* M. Nobis & A. Nowak var. nov.** (Fig. 1)

**Type:** Tajikistan, Hissar Mts (Pamir Alai) – “Zeravshan B region”, steppe grassland on the right slope of Gabierud River valley, near Pormin settl. near Zeravshan village – ca. 2 km S of Jagnob river, alt. 1896 m a.s.l., 39°10'12.46"N, 68°34'42.86"E, 25.05.2015, M. Nobis & A. Nowak *s.n.* (holotype: KRA464720; isotypes: KRA464721, KRA464722, KRA464723, KRA464708).

**Diagnosis:** *Stipa* × *brevicallosa* var. *hissarensis* differs from *Stipa* × *brevicallosa* var. *brevicallosa* in having densely pubescent leaves of vegetative shoots vs. leaves glabrous respectively.

**Distribution and ecology:** *Stipa* × *brevicallosa* var. *hissarensis* is a Middle Asiatic mountain taxon, endemic to the western Pamir Alai Mts, known only from Tajikistan (Hissar and Zeravshan Mts). It grows on loess substrate (pH 7.6), on high mountain feather grass steppes, mainly at exposures of W-SW-S and at an altitude of 1850–2350 m.



**Figs 1–2:** 1 – Holotype of *Stipa*  $\times$  *brevicallisa* var. *hissarensis* (above). 2 – Holotype of *Stipa orientalis* var. *ladakhorum* (below).

**Other specimens studied:** Tajikistan, Zeravshan Mts, high mountain steppe, between stones, on the left slope of the Iskanderdarya River valley, ca. 0.5 km E of Serimadarun lake (near Iskanderkul lake), alt. 2300-2350 m, incl. WSW, slope 5°, 10.06.2012, M. Nobis *s.n.* (paratype: KRA464719).

***Stipa orientalis* Trinius (1829: 83) var. *ladakhorum* M. Nobis var. nov.** (Fig. 2)

**Type:** NW India, Jammu and Kashmir State, Ladakh, Suru region, Chsshit village to Namtse villaeg, alt. 3410 m a.s.l., 34°21.1'N, 76°26.0'E, 15.08.2003, L. Klimeš 2926 (holotype: KRA464718).

**Diagnosis:** *Stipa orientalis* var. *ladakhorum* differs from *Stipa orientalis* var. *orientalis* in having densely pubescent leaves of vegetative shoots vs. leaves scabrous respectively.

**Distribution and ecology:** *Stipa orientalis* var. *ladakhorum* is known only from Jammu and Kashmir State in northern India (Western Himalayas). It is probable that the species may be found in the neighboring areas of Tibet, where similar habits occur. The species grows on rocks and in high mountain steppes, at elevation over 3000 m a.s.l.

**Acknowledgements:** This research was supported by the National Science Center (Poland), grant no. DEC-2013/09/B/NZ8/03287.

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