

DACTYLIS GLOMERATA L. SUBSP. *SLOVENICA* (DOM.) DOM.,
A NEW TAXON TO CAUCASUS

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ABSTRACT

Dactylis glomerata L. subsp. *slovenica* (Dom.) Dom. has been recorded in Western Caucasus at southern slopes of the Abishira-Akhuba range (Karachay-Cherkessia Autonomous Republic belonging to the Russian Federation). This new information is very important supplement dealing with the distribution of this taxon, because the area of its known distribution was moved very strongly to the East.

KEY WORDS: *Dactylis glomerata* subsp. *slovenica*, Caucasus, distribution, new taxon.

INTRODUCTION

Dactylis glomerata L. subsp. *slovenica* (Dom.) Dom., first recorded by Domin in 1923 from Western Slovakia (type in PRC*, No. 809) is a tetraploid ($2n = 28$) representative of the polyploid complex of the genus *Dactylis* L. From long-term detailed population and experimental studies of morphological features (Mizianty 1988a), cytological, karyological (Mizianty 1991a) and chemotaxonomic analyses (Mizianty, Trela 1993) the authors conclude that *D. glomerata* subsp. *slovenica* is a genetically fixed taxon and should be assigned in the rank of subspecies.

The distribution of *D. glomerata* subsp. *slovenica*, first in Poland and adjacent areas, next in Italy and at the end in Europe, was given for the first time by Mizianty (1988b), Mizianty, Cenci (1996) and Mizianty (1997). According to their studies this subspecies occurs in the Carpathians (East, West and South), the Alps (East and West as well as southern alpine belts: Venetian, Apuan and Ligurian), the Foreland of the Alps, the Jura and the Northern Appenines. Apart from the above-mentioned mountain ranges, representing the same alpine system, *D. glomerata* subsp. *slovenica* also occurs in the Czech Massif (extending across the Sudeten Mts., Bohemian-Moravian Highlands, and Erzgebirge Mts.), as well as in such mountain ranges as the Bayerischer Wald, Frankenwald, Harz, Apuseni (Romania) and Kalnik (Croatia). Apart from this compact distribution area, single localities for *D. glomerata* subsp. *slovenica* were recorded from the Dinaric Alps, Olympus Massif and the environs of Kiev. It grows on limestone or dolomite, in the montane or subalpine belts, occasionally descending to lower elevations (Mizianty 1991b).

In general the area of distribution of this subspecies (up to the present knowledge) is enclosed within the distribu-

tion area of tetraploid *D. glomerata* subsp. *glomerata* and diploid *D. glomerata* subsp. *aschersoniana* (Graebn.) Thell. (Mizianty 1990, 1997). These two taxa probably contributed to the creation of *D. glomerata* subsp. *slovenica* (Mizianty 1991b).

Unfortunately, Mizianty during her detailed studies dealing with distribution of subsp. *slovenica* in Europe (Mizianty 1997) was unable at that time to obtain material from the Caucasus region (belonging also to the alpine mountain system, like the Carpathians and Alps). For this reason *Dactylis* collected lately by L. Wilk from Caucasus became the supplementary material for studies of distribution of *D. glomerata* subsp. *slovenica*.

MATERIAL

In 2001 the second author collected *D. glomerata* from Caucasus (Fig. 1) (KRAM*, No 460901-460908). Specimens were collected in Western Caucasus on the southern slopes of the Abishira-Akhuba range (lat. 43°35'N, long. 41°17'E), (Karachay-Cherkessia Autonomous Republic belonging to the Russian Federation). All plants grew along a stream, a tributary of the Bolshoy Zelenchuk river, just above Arkhyz village, by the path toward the Baritovy Pass. They occur in tall herb communities with addition of synanthropic plants, within the upper montane forest belt. The substratum of this part of the Abishira-Akhuba range consists of gneisses, metamorphic sandstones and schists, with presence of barite. Eight collected specimens grew in the locality near Baritovy waterfall (more than 1900 m a.s.l.), and groups of several individuals representing the taxon have been recorded between altitudes of 1600 and 2000 m a.s.l.

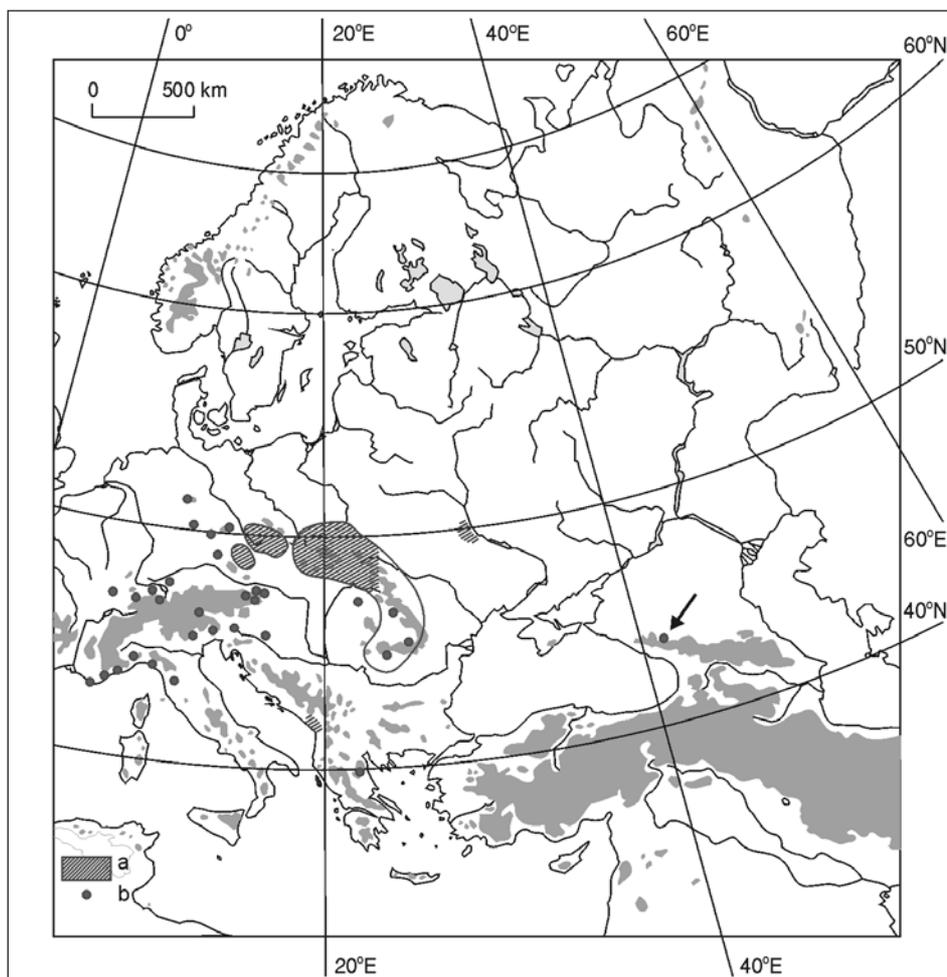


Fig. 1. Locality of *Dactylis glomerata* L. subsp. *slovenica* (Dom.) Dom. in Caucasus. (arrow): a – areas of distribution according to Mizianty (1988b); b – areas of distribution according to Mizianty (1997).

RESULTS

On the basis of morphological characters (Table 1) (Mizianty 1991b), it is evident that the collected plants from Caucasus (Fig. 2) represent *D. glomerata* subsp. *slovenica*.

It should be mentioned that this is only a general, not a statistical comparison, because there is not a sufficient number of plants from Caucasus for numerical studies and also, that not all plants were collected in the whole (completely). Mostly very tall specimens are in herbarium without the lower part of culm, so for these specimens there are no data in Table 1 for the characters: length of culm and maximum width of culm of the tallest plants.

Comparing values of characters for Caucasian plants with values of characters obtained from statistical analysis of the genus *Dactylis* from Poland (Mizianty 1988a), it can be concluded that the Caucasian specimens are enclosed within typical *D. glomerata*, subsp. *slovenica* (Table 1).

D. glomerata, subsp. *slovenica* has hitherto not been known in Caucasus (Grossgeim 1939, 1949; Karyagin 1950; Dmitrieva 1959; Prokudin 1977). Tzvelev (1984) distinguished from this area: *Dactylis glomerata*: (1) subsp. *lobata* (Drej.) Lindb. = subsp. *aschersoniana* (Graebn.) Thell.; (2) subsp. *glomerata*; (3) subsp. *woronowii* (Ovcz.) Stebb. et Zohary; (4) subsp. *hyrcana* Tzvel.; (5) subsp. *hispanica* (Roth) Nym. The first two are most common: subsp. *glomerata* – dispersed in all Caucasus, subsp. *lobata* – dispersed nearly in all regions, with the exception of the eastern part of the Transcaucasia. The distribution of the rest subspecies is more limited: subsp. *woronowii* – in Daghستان, E & S part of Transcaucasia, subsp. *hispanica* – in Daghستان and Transcaucasia, subsp. *hyrcana* – in Talysh. Localities of subsp. *slovenica* in Caucasus are enclosed within the distribution area of subsp. *glomerata* and subsp. *lobata*. Kolakovski (1938), studying the flora of Abkhasia distinguished that *D. glomerata* in this area is very polymor-

TABLE 1. Character values of *Dactylis glomerata* subsp. *slovenica* from Caucasus (1-8) and from Poland (slovenica). For Poland: numbers in brackets – values for specimens; numbers without brackets – mean values for subspecies.

Character	1	2	3	4	5	6	7	8	slovenica
1) Length of culm (cm)	137	138	144	120*	91*	120*	101*	131*	[101] 149.20 [199]
2) Maximum width of culm (mm)	4.4	5.6	5.8						[4] 5.56 [8]
3) Width of leaf (mm)	4.6	5.6	5.1	5.9	6.2	6.2	6.1	6.0	[4] 6.57 [9]
4) Length of panicle (mm)	168	174	146	155	230	151	185	181	[103] 182.10 [265]
5) Length of culm/Length of leaf	4.43	4.04	4.30						[1.63] 4.11 [8.17]

* – specimens without lower part of culm



Fig. 2. *Dactylis glomerata* L. subsp. *slovenica* (Dom.) Dom. from Caucasus – upper part of culm. (KRAM 460 904). Scale 10 cm. Some other photographs of this subspecies have been published from Poland (Mizianty 1991b) and from Italy (Mizianty, Cenci 1995, 1996).

phic and needs more detailed studies. According to him, it reaches in the studied area the altitude up to 2800 m, growing mainly in subalpine meadow associations.

From previous studies of Mizianty (1997) it was known that *D. glomerata* subsp. *slovenica* can occur from the foothills up to the montane herb-layer zone (in West Carpathians 380-1700 m; in East Carpathians 300-1784 m; in the South Carpathians up to 2050 m; in the Alps 350-2030 m above sea level). The altitude of localities of this subspecies from Caucasus (1600-2000 m) is in agreement with the previous data.

D. glomerata, subsp. *slovenica* from Caucasus grows in tall herb communities within the upper montane forest belt [with *Abies nordmanniana* (Stev.) Spach and *Pinus silvestris* v. *hamata* Steven as dominant trees]. Because of the high level of pastoral activity in this region, the natural community is modified in various degree by the presence of several synanthropic species. *D. glomerata*, subsp. *slovenica* is a calciphilous plant, although there is an absence of limestone or dolomite in substratum, also some other species present in this locality are known as more or less calciphilous [*Aconitum orientale* Mill., *A. confertiflorum* DC., *Astrantia maxima* Pall., *Campanula lactiflora* M.B., *Carlina vulgaris* L., *Centaurea phrygia* L., *Cephalaria gigantea* (Led.) E. Bobr., *Coronilla varia* L., *Gentiana septemfida* Pall., *Inula magnifica* Lipsky, *Polypodium vulgare*

L., *Ranunculus caucasicus* M.B., *Saxifraga cymbalaria* L., *Sweetia iberica* F. et M., *Trifolium trichocephalum* M.B., *Valeriana alliariefolia* Vahl.].

The present information of occurrence *D. glomerata*, subsp. *slovenica* in Caucasus is a very important supplement dealing with the distribution of this taxon. The area of its known distribution was moved very strongly to the East, but still it is enclosed within the distribution area of *D. glomerata*, subsp. *glomerata* and *D. glomerata*, subsp. *aschersoniana* (Mizianty 1990, 1997).

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* Acronyms for herbaria follow Holmgren et al. (1990).

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NOWY TAKSON DLA KAUKAZU

STRESZCZENIE

Podczas wyprawy naukowej na Kaukaz stwierdzono występowanie nowego dla tego górotworu taksonu: *Dactylis glomerata* L. subsp. *slovenica* (Dom.) Dom. Stanowisko odnaleziono na południowych zboczach grzbietu Abiszira-Achuba, w zachodniej części Kaukazu (Republika Autonomiczna Karaczajo-Czerkiesja w granicach Federacji Rosyjskiej). Nowe stanowisko *D. glomerata* subsp. *slovenica* jest cennym uzupełnieniem dla znanego dotychczas rozmieszczenia tego taksonu, gdyż granica zasięgu przesunęła się znacznie w kierunku wschodnim.

SŁOWA KLUCZOWE: *Dactylis glomerata* subsp. *slovenica*, Kaukaz, rozmieszczenie, nowy takson.