

## OCCURRENCE OF *Acrida ungarica* IN THE ROMANIAN PART OF THE LOWLAND COURSE OF CRIȘUL REPEDE RIVER

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**ABSTRACT.** In August 2013 we had recorded three individuals of *Acrida ungarica* in the vicinity of the dam from Tărian, on the right bank of the Crișul Repede River. The *Acrida ungarica* individuals most probably were carried by the wind. It remains to be seen if the occurrence of *Acrida ungarica* at the bank of the Crișul Repede River will be a constant one or not. Future monitoring is needed.

**KEY WORDS:** *Acrida ungarica*, new record, range extension, Natura 2000.

The Mediterranean Slant-faced Grasshopper, also known as Cone-Headed Grasshopper, *Acrida ungarica* (Herbst, 1876), is a species with wide distribution in Southern and Central Europe (see in Hochkirch et al. 2016 and the references cited therein). In Central Europe the species reaches its northern range limit, the northernmost sample of the species being found in 2016 in Slovakia (Kollár 2018). However, the EU Habitat Directives do not cover this species, but it is protected in some countries at its northern range, where it is rarer and more vulnerable (see in Hochkirch et al. 2016 and the references cited therein).

*Acrida ungarica* can be found in xerophilic, dry areas with very sparse vegetation and warm grasslands (e.g. Păiș & Iorgu 2007-2008, Rabl & Kunz 2018), and mostly in sandy dunes in the northern part of its range (Kristin et al. 2004). It also occurs in different types of grasslands, but has high density in sandy grassland (Kenyeres et al. 2019). In North-Western Romania the species occurs in the sandy area of Carei Plain (personal observations). Sand grasslands are one of the most important orthopteran

habitats (Kenyeres et al. 2020); also some orthopteran species can be important indicators of the loess grasslands (Kenyeres et al. 2018).

In August 2013 we had made herpetological field trips in the Natura 2000 site “Lunca Inferioară a Crișului Repede” (ROSCI0104). Although our objectives were not to study the orthopteran fauna, we recorded three individuals of *Acrida ungarica* in the vicinity of the dam from Tărian, on the right bank of the Crișul Repede River (47°5'17.80"N, 21°47'2.11"E). The habitat starts from the concrete of the dam covered by thin, dusty soil (sand type) and extends to a dry grassland (Figure 1).

The Mediterranean Slant-faced Grasshopper is not the only Mediterranean species discovered from/nearby of this habitat. In 2014 it was reported a self maintaining *Podarcis muralis* population (Sas-Kovács & Sas-Kovács 2014). This lizard population occupies the concrete part of the grassland and the gabions brought several years ago to fortify the right bank of the river Crișul Repede (Sebes-Körös) downstream of the dam from Tărian. In the case of *Podarcis muralis* we can talk about human introduction, but the *Acrida ungarica* individuals most probably were carried by the wind.

However the grasshopper is present in the Banat and Crișana Plane eco-region (see in Iorgu et al. 2008), the most closest known distribution points are at the distance of at least 45km of the current site: (a) in Romania at the sandy dunes of Voivozi locality (Carei Plain - personal observations); (a) and in Hungary at Vámospércs and Báránd localities (see the map at <https://www.inaturalist.org/taxa/211055-Acrida-ungarica>). In the Carei Plain the species occurs in sandy habitats, but sand specialist (or pseudo-psamomophilic) species can be found in other dry grassland-types too (Kenyeres et al. 2019). In the last period the new records of *Acrida ungarica* species have increased, being reported from many places where they had never been known before: abandoned stone mines, dry grasslands, road slopes (Bauer & Kenyeres 2019). All of these new records can be the result of the drying climate in the Carpathian Basin (Bauer & Kenyeres 2019). In the case of many invertebrate and vertebrate species there are several range/altitudinal range extensions and new records worldwide (ex. Darvishnia et al. 2018, Kian et al. 2018, Aximoff et al. 2019, Doğdu et al. 2019). In some particular cases such as the Darwin's frog, future climate changes scenarios indicated that climatically suitable areas may become more widespread (Bourke et al. 2018). Such scenarios may



Figure 1. Aspects of the habitat at the Tărian dam, with one of the *Acrida ungarica* individuals (Photo by I. Sas-Kovács).

be possible in the case of the Central European populations of *Acrida ungarica* too. This species that currently is rare and even vulnerable in

some areas, could extend its range northwards and in other type of dry-habitats.

There are known populations of *Acrida ungarica* that can self-maintain in xerophilous grasslands on river banks (eg. along the Prut River - Stahi & Derjanschi 2011). It remains to be seen if the occurrence of *Acrida ungarica* at the bank of the Crişul Repede River will be a constant one or not. Future monitoring is needed.

**ACKNOWLEDGEMENT.** First at all, we want to thank Aqua Crisisus Asociation, Oradea, Romania <<http://www.aquacrisius.ro>>, the custodian of the protected area, for the access permission. We also want to thank the persons who accompanied us during field study in 2013 (Adina Pop, Florin Pantiş – candidates for BSc in Biology at the University of Oradea).

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