

NEW DISTRIBUTION RECORDS OF THE ENDEMIC TERRESTRIAL ISOPOD *Trachelipus ater* IN THE SOUTHERN CARPATHIANS, ROMANIA

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ABSTRACT. *Thirteen new distribution localities of the endemic terrestrial isopod species, Trachelipus ater, were recorded in the Southern Carpathians in Romania. Most of them are situated in the Olt River gorge, throughout its tributary, the Lotru River. However, the species was identified westwards of its previously known distribution range, in the Olteț Gorge, and even at the northern slope of the Southern Carpathians, in the Strei River basin, expanding much its previously known distribution range.*

KEY WORDS: *endemic species, distribution range, Southern Carpathians.*

Trachelipus ater is one of the numerous endemic *Trachelipus* species in Romania (see in: Tomescu et al 2015). *T. ater* is distributed only in a limited area in the Southern Carpathians, especially in the Olt River gorge area, but also in the north-western part of the upper sector of Argeș River basin, being a characteristic species for afforested gorges (Tomescu et al. 2015). Compared with the older data on the species` distribution (Schmidt 1997), this was recently identified in new localities from the central region of the Southern Carpathians, expanding its known distribution range (Tomescu et al. 2015). Recently, other endemic terrestrial isopod species were identified in new distribution points from the country (Ferenți & Covaciu-Marcov 2016, Ferenți et al. 2016). With all the new distribution localities, the known distribution range of *T. ater* is still reduced. Thus, this note presents new distribution localities of this endemic species in the Southern Carpathians, both inside and outside its known distribution range, expanding it to west and north-west.

The field trips were realized sporadically, in the warm seasons of the years 2014 and 2015. We investigated several zones of the Southern Carpathians. The isopods were searched in habitats with the specific aspect of their requirements (Tomescu et al. 2015). The individuals were collected with the direct method under logs, barks or stones. From each locality one individual was collected and preserved in alcohol. The other individuals and their habitats were photographed.

In the two years of the field study we identified 13 new distribution localities of *T. ater* in the Southern Carpathians (Baru Mare, Olteț Gorge, Voineasa, Valea Măceșului, Brezoi, Săliște, Valea Fratelui, Călinești, Băiașu, Latorița Valley – upstream Ciunget locality, near Lotru railway station, Mălaia, Călimănești). In some localities we found the species in two-three different valleys, thus the number of the distribution points on the figure is higher than 13 (Figure 1). The majority of these localities are situated in the Olt River gorge area, inside the species' previously known distribution range. Though, many new localities are present thorough the affluent Lotru River and its tributary, Latorița River, waters situated inside the Southern Carpathians, between the Lotru, Latoriței and Căpățâni Mountains (Posea & Badea 1984). Thus, these points represent an expansion of approximately 35 km of the species distribution range compared to the previous data (Tomescu et al. 2015). Outside the known distribution area, *T. ater* was identified in two zones. The first one is situated in Olteț Gorge,

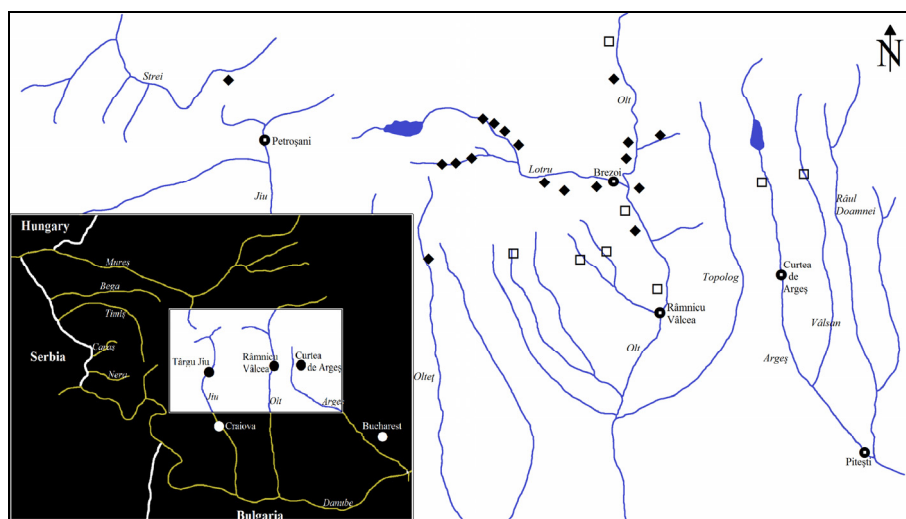


Figure 1. The distribution of *T. ater* in Romania: □ - previous distribution records (Tomescu et al. 2015); ◼ - new distribution records.

approximately 25 km west to the westernmost previously known distribution locality (Tomescu et al. 2015). Though, this locality, situated through Olteţ River, lays also in the Olt River hydrographic basin, in the southern part of the Southern Carpathians (Posea & Badea 1984). On the contrary of this, the second zone where the species was identified outside its known distribution range is situated on the northern slope of the Southern Carpathians, close to Baru Mare locality, in the superior basin of the Strei River, a tributary of the Mureş River. Although *T. ater* was not reported in the past from this area (Tomescu et al. 2015), *T. vareae* was mentioned in the region (Radu 1949, 1950, 1958, 1985), a sister species, which resembles with *T. ater* (Tomescu et al. 2015). The identification of *T. ater* on the northern slope of the Southern Carpathians solves the uncertainties concerning the species distribution in this area (see in: Tomescu et al. 2015). Thus, it seems that in this area only *T. ater* is indeed present, the old records being a result of the confusion between the two species, as well as in the Olt gorge (Tomescu et al. 2015).

The habitats, where *T. ater* was identified in, fit the ones described in the literature (Tomescu et al. 2015), being represented by the Olteţ, Strei, Latoriţa and Olt gorges. In the same time, these are humid zones, with watercourses, covered by beech forests (Figure 2). In the Latoriţa gorge area the species is common, sheltering especially under stones, more individuals being often found under the same shelter (Figure 3). In the Latoriţa Gorge the species was found at its highest altitude, upstream



Figure 2. Habitat of *T. ater* at Sălişte.



Figure 3. *T. ater* individuals from Latorița Valley, upstream Ciunget locality

Ciunget locality, at 850 m a.s.l., this altitude being only 20 m higher than it was previously known (Tomescu et al. 2015). However, if at the lower zones of the gorge the species is common, the individuals become rarer once the altitude rise. Thus, even if it is a mountain species, *T. ater* is present only in mountain areas with low or moderate altitudes.

T. ater is probably a relict species, which has formed in the region, or at least survived here, having a narrow distribution range (Tomescu et al. 2015). Recent data on other endemic species in the Carpathians confirms the biogeographic importance of the area (e.g. Dénes et al. 2016 a,b). Moreover, in some sectors of *T. ater* distribution range, like the Olt gorge, there are thermophilous species, representing southern groups, like the Carpathian scorpion (Gherghel et al. 2016). Thus, *T. ater* is just a zoogeographically important species, present in a special zone, its distribution range being probably not completely known yet despite of these new data. Although the species identification on the northern slope of the Southern Carpathians is important, it raises new questions. Thus how has the species arrived on the northern slope of the Southern Carpathians, in the Strei River basin, while it was not reported from Jiu Gorge (Tomescu et al. 2011, Cicort-Lucaciu & Dobre 2015), which is situated southwards? Is the species distribution area fragmented? Is it still present in the Jiu Gorge? Are the populations from the two zones connected at the northern flank of

the Southern Carpathians? These questions indicate how little are known, imposing new studies to clarify at least the distribution range of this endemic species.

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