

NEW DISTRIBUTIONAL RECORDS FOR THE SPECIES
TRACHELIPUS TRILOBATUS (STEIN, 1859)
(ISOPODA, ONISCIDEA, TRACHELIPODIDAE)
IN ROMANIA

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Abstract. The species *Trachelipus trilobatus*, long considered as restricted to the western side of the Timiș-Cerna Corridor, was found to have a wider distribution in Romania. The new locations, found in the collection of the “E. Racovitza” Institute of Speleology and data from references, enlarge our knowledge on the species *T. trilobatus*.

Key words: Isopoda, Oniscidea, Trachelipodidae, *T. trilobatus*.

1. INTRODUCTION

The family Trachelipodidae Strouhal, 1953 is arguably one of the most remarkable of the 15 families of Oniscidea from Romania: it includes no less than 17 species, five of them endemic; only the family Trichoniscidae has more species (37) and, as a number of species is followed by the family Armadillidiidae Brandt, 1833 with 9 species (GIURGINCA, 2022).

In Romania, the Trichoniscidae are represented by three genera: *Trachelipus* Budde-Lund, 1908, *Porcellium* Dahl, 1916 and *Nagurus* Holthuis, 1949.

The latter genus contains only one species, *Nagurus cristatus* (Dollfus, 1899), a pantropical species, restricted in Romania only to the greenhouses of the Botanical Garden of Cluj-Napoca (RADU, 1960, 1961, 1985).

The second genus, *Porcellium* Dahl, 1916 contains five species, namely *P. collicola* (Verhoeff, 1907), *P. conspersum* (C. Koch, 1841), *P. productum* Frankenberg, 1940, *P. recurvatum* Verhoeff, 1901 and the recently described new species *P. transsylvanicum* Tomescu, Teodor, Ferentzi, 2012, the sole species of the genus endemic in Romania (TOMESCU *et al.* 2012; GIURGINCA, 2022).

The genus *Trachelipus* contains 11 species: *T. arcuatus* (Budde-Lund, 1885), *T. ater* (Budde-Lund, 1896), *T. difficilis* (Radu, 1950), *T. nodulosus* (C.L. Koch, 1838), *T. rathkii* (Brandt, 1833), *T. ratzeburgii* (Brandt, 1833), *T. razzauti*

(Arcangeli, 1913), *T. spinulatus* (Radu, 1959), *T. squamuliger* (Verhoeff, 1907), *T. trilobatus* (Stein, 1859) and *T. troglobius* Tabacaru & Boghean, 1989 (GIURGINCA, 2022).

Four species of *Trachelipus* are endemic for Romania, namely *T. ater*, *T. spinulatus*, *T. trilobatus* and *T. troglobius* which is the sole troglobitic species of this genus in Romania (TABACARU & BOGHEAN, 1989, GIURGINCA, 2022). The species *T. razzauti* has the distinction of being the species most recently added to the Romanian fauna and for being discovered within the collection of the “E. Racoviță” Institute of Speleology (GIURGINCA, 2024A).

Trachelipus troglobius (Fig. 1) was considered as endemic for the Băile Herculane area (DECOU, NEGREA, NEGREA, 1974), or, at least, considered as distributed only in Banat, so, to the West of the Timiș-Cerna Corridor (TOMESCU *et al.*, 2015).

Herewith, we present an entire new range of locations for the species *T. trilobatus* not only from Banat, but also from other neighboring regions, combined with data from references.

2. THE DISTRIBUTION OF *TRACHELIPUS TRILOBATUS*

As we have pointed out in two previous papers concerning the species *Haplophthalmus movilae* Gruia & Giurginca, 1998, *Trachelipus razzauti* (Arcangeli, 1913) and *Typhloiulus serborum* Ćurčić & Makarov, 2005, biological collections are essential for taxonomic work by providing raw data as centralized storehouses of reference material, acting as sites of accumulated knowledge and resources.

Biological collections are also providing unexpected findings adding to the knowledge and understanding of particular species and, sometimes, entire families or even orders (SUAREZ & TSUTSUI, 2004; GIURGINCA, 2024, A, B).

One such discovery, resulting from sorting and identifying almost 2000 vials with unidentified biological material collected from 1955 up to the present, is the finding in the collection of the “Emile Racovitza” Institute of Speleology of numerous new individuals and locations for the species *Trachelipus trilobatus* from outside the already known distributional range.

The material examined comprises 149 individuals: 55 males and 94 females and was collected beginning from 1955–1958 and up to 2023 by professors T. Orghidan and M. Dumitrescu, J. Tanasachi, I. Tabacaru, D. L. Danielopol, E. Șerban, Ștefan and Alexandrina Negrea, M. Georgescu, M. Gruia, I. Juvara-Balș, Șt. Avram, V. Decu, A. Burghel (later A. Decu), A. Bălăcescu, T. Ioniță, A. Nae and A. Giurginca.

The geographical distribution was determined according to the relief units' map (POSEA, 2005).

Cave Locations:

Southern Carpathians: Vâlcan Mountains: Culmea Vâlcan: Peștera Roșie din Piatra Pocruia (det. A.G.).

Southern Carpathians: Vâlcan Mountains: Culmea Vâlcan-Dealul Cornetu-Pocruia: Peștera Mică din Piatra Pocruia, (det. A.G.), Peștera cu Războaie de la Isvarna (RADU, 1948, TABACARU & GIURGINCA, 2013).

Southern Carpathians: Vâlcan Mountains: Culmea Vâlcan-Dealul Pârliturile: Peștera Lilieciilor from Cheile Sohodolului-Isvarna (det. A.G.).

Southern Carpathians: Mehedinți Mountains: Culmea Cernei: Dealul Sohodoale: Peștera Lazului (Ilie, Giurginca, Vănoaica, 2002).

Southern Carpathians: Mehedinți Mountains: Culmea Cernei: Dealul Orzeștilor: Peștera Vacilor din Steiul Orzeștilor, Peștera no. 1 & Peștera no. 2 din Steiul Orzeștilor, Peștera din Ogașul/Valea Peșterii (det. A.G.).

Southern Carpathians: Mehedinți Mountains: Culmea Cernei: Cheile Corcoaiei: Peștera no 32 din Valea Cernei, Peștera no. 34 din Valea Cernei, Peștera no. 35 din Valea Cernei (det. A.G.).

Southern Carpathians: Mehedinți Mountains: Masivul Domogled (Cheile Pecinișcăi): Peștera (de la) Ponorul Pecinișcăi, Peștera Gaura Ungurului (TABACARU & GIURGINCA, 2013; NITZU *et al.*, 2011; NITZU *et al.*, 2016).

Southern Carpathians: Mehedinți Mountains: Masivul Domogled-Vârful Inălățu Mic: Peștera de la Balta Cerbului (det. A.G.).

Southern Carpathians: Căpățâni Mountains: Masivul Vânturarița-Buila: Muntele Stogșoru: Peștera Caprelor Buila (det. A.G.).

Southern Carpathians: Cernei Mountains: Culmea Vlascu/ Valea Cernei: Peștera no. 37 din Valea Cernei, Peștera no. 41 din Valea Cernei, Peștera no. 65 din Valea Cernei, Peștera no. 68 din Valea Cernei, (det. A.G.).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Culmea Mohornicului: Vârful Ciorici: Peștera lui Adam (DECOU, NEGREA, NEGREA, 1974), Grota cu Aburi (det. A.G.), Cave upstream from Peștera Haiducilor (TOMESCU *et al.* 2015); **Culmea Mohornicului:** Peștera Hoților de la Băile Herculane (TABACARU & GIURGINCA, 2013).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Culmea Ciorici: Peștera Hygeea (det. A.G.).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Piatra Pușcată/Valea Cernei: Peștera Prisaca de la Șchiopu no. 1, Peștera Prisaca de la Șchiopu no. 2, Peștera Prisaca de la Șchiopu no. 3, Peștera no. 62 din Bazinul Cernei (det. A.G.).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Muntele Șălitrari/Valea Cernei: Peștera Șălitrari 2 (det. A.G.).

Edaphic Locations:

Banat Carpathians: Almăjului-Svinecea Mountains: Culoarul Timiș-Cerna-Depresiunea Mehadica: Mehadia (Stein, 1859).

Carpații Meridionali: Mehedinți Mountains: Masivul Domogled: northern slope of Domogled (RADU, 1985), Cheile Pecinișcăi, downstream from Băile Herculane (TOMESCU *et al.* 2015).

Southern Carpathians: Mehedinți Mountains: Culmea Cernei-Cheile Corcoaiei: Cheile Corcoaiei (det. A.G.).

Southern Carpathians: Cernei Mountains: Culmea Vlascu: Valea Cernei (det. A.G.).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Culmea Seseminului-Vârful Ciorici: upstream Diana Spring, Izvorul lui Munk (Băile Herculane) (TOMESCU *et al.* 2015).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Muntele Șălitrari/Valea Cernei: Valea Prisacina, upstream from Băile Herculane (TOMESCU *et al.* 2015).

Southern Carpathians: Cernei Mountains: Culmea Vlascu-Piatra Pușcată/Valea Cernei: Piatra Pușcată, right slope of Cerna River (det. A.G.).

Southern Carpathians: Șureanu/Sebeșului Mountains-Dacic Plateau: Lunca Ponorului (inlet point at Șura Mare) (det. A.G.).

Southern Carpathians: Parâng-Cindrel Mountains-Surului Mountains: Olt Corridor: Valea Oltului, upstream of Călimănești (det. A.G.).

3. RESULTS AND DISCUSSION

The distribution of *T. trilobatus* has practically doubled after the identification of the material housed within the collection of “Emile Racovitza” Institute of Speleology (Fig. 2).

The northernmost point of the distribution is Lunca Ponorului (near Șura Mare) in the Șureanu/Sebeșului Mountains, while the southernmost point is at Cheile Pecinișcăi (downstream from Băile Herculane) in Mehedinți Mountains, a location provided by TOMESCU *et al.* (2015).

The westernmost point is Oltului Valley (upstream from Călimănești) and at Peștera Caprelor in Căpățâni Mountains while the easternmost point is around Mehadia in the Almăjului-Svinecea Mountains, the origin of the material used by STEIN (1859) to describe the species.

The new data also provided some interesting ecological aspects. *T. trilobatus* is recorded for the first time from the lithoclasticolous on Oltului Valley (upstream from Călimănești) and on Cerna Valley at Piatra Pușcată and also near an inlet point at Lunca Ponorului.

Although the species presence was recorded at the entrance and the photic zone of caves (see TABACARU & GIURGINCA, 2013; TOMESCU *et al.*, 2015), *T. trilobatus* sometimes enters deep areas of caves: this is the case at Peștera Hoților from Herculane (where it was collected from the floor) and at Peștera (Avenul) lui Adam where it was recorded from deep inside the cave (albeit only a few individuals, see DECOU, NEGREA, NEGREA, 1974) on guano. As far as our information goes, this is the sole cave where the species was collected on guano.

4. LITHOLOGIC ASPECTS

From a lithological point of view (Fig. 3), the specimens are primarily associated with carbonate rocks, specifically Mesozoic limestones ranging from the Middle Jurassic to the Lower Cretaceous.

Dominant lithotypes include nodular limestones (e.g. in the Băile Herculane area), pellet limestones (e.g. caves near Pocruia), skeletal and micritic limestones (e.g. caves in the Orzești perimeter) and bioclastic limestones (e.g. Caprelor Cave in the Buila Ridge), most of which are fractured.

Dolomitized limestones are encountered less frequently (e.g. Roșie Cave and Mică Cave, Piatra Pocruii).

Additionally, *Trachelipus trilobatus* specimens have been identified in two locations on conglomeratic and sandstone substrates of the same Mesozoic age (e.g. Mehadia and north of Călimănești). The area north of Călimănești, along the Olt Valley, may also contain rudist limestones.

Acknowledgments. This paper is dedicated to the memory of our Mentor and Colleague dr. Ionel Grigorie Tabacaru, who, sadly, left us last year, on 6th December 2024.

We are immensely indebted to our colleagues who collected valuable biological material: T. Orghidan, Margareta Dumitrescu, I. Tabacaru, E. Șerban, Alexandrina & Șt. Negrea, Magdalena Gruia, Ștefania Avram, Ilinca Juvara, Anca Burgehele, D. Dancău, D. L. Danielopol, V. Decu, A. Bălăcescu and A. Nae.

Our study has been undertaken within the framework of Program 1 of the “Emile Racovitza” Institute of Speleology of the Romanian Academy.

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Fig. 1. *Trachelipus trilobatus*, Peștera 1 & 2 from Steiul Orzeștilor, 10. 08. 1959, leg. A. Burghele, V. Decu, D. Dancău (photo Dr. Baba Șt. C.)

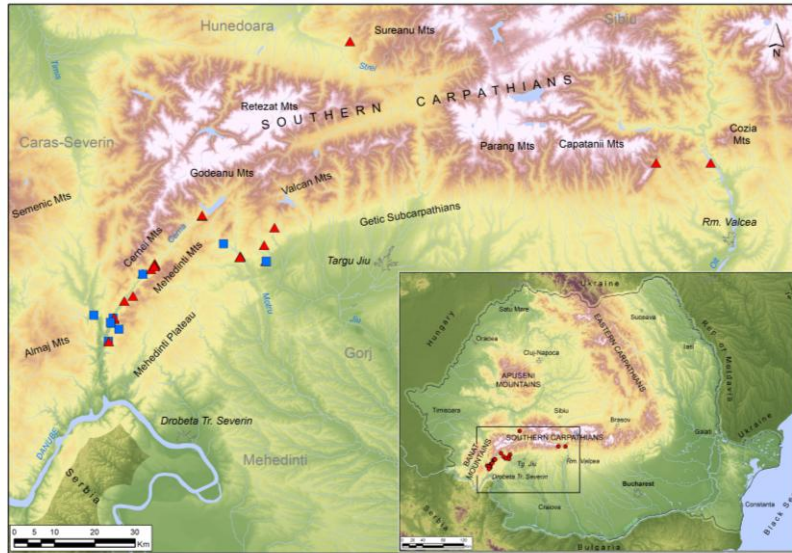


Fig. 2. Map with all recorded locations with *Trachelipus trilobatus*: blue squares, already known locations, red triangle, new locations from the collection of the “Emile Racovitza” Institute of Speleology; inset: the distribution perimeter within Romania.

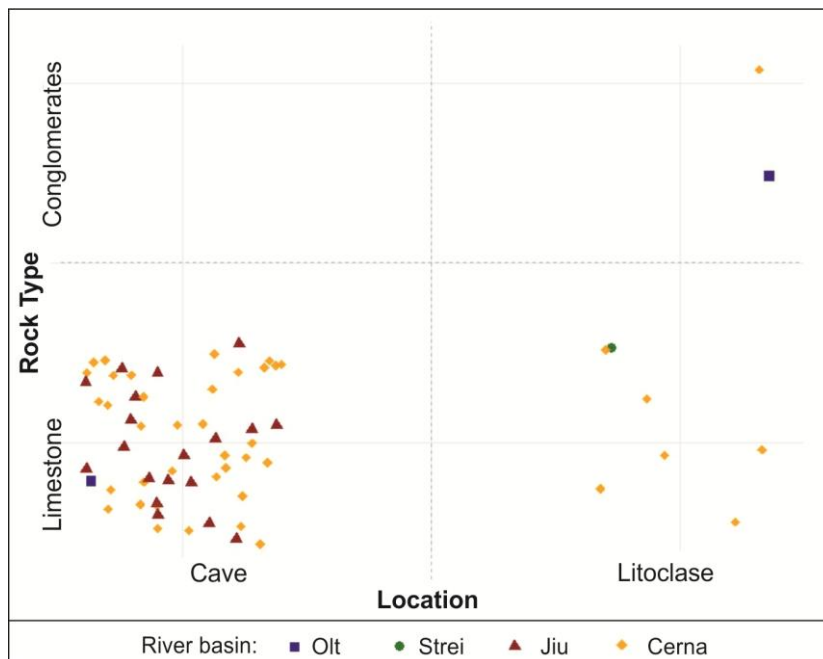


Fig. 3. Lithology and environmental location of the distribution of *Trachelipus trilobatus*.