

ONISCIDEA (ISOPODA, MALACOSTRACA) FROM THE PIATRA CRAIULUI NATIONAL PARK IN ROMANIA

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Abstract - This paper presents six species of Oniscidea recorded until now in the Piatra Craiului National Park in Romania: *Ligidium hypnorum*, *Mesoniscus graniger*, *Hyloniscus dacicus*, *Trichoniscus carpaticus*, *Trachelipus nodulosus*, and *Trachelipus difficilis rotundatus*.

Key words: Isopoda, Oniscoidea, biodiversity, national parks, Romania

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INTRODUCTION

Up to the present, the Oniscidea from the Piatra Craiului Massif are recorded in only two papers: the first published in 1963 by Gruner and Tabacaru, the second published by Giurginca and Nae in 2004. However, both papers refer to only one species, *Mesoniscus graniger*, and do not mention any other species of Oniscidea.

This paper represents the first attempt to investigate more thoroughly the fauna of Oniscidea from the Piatra Craiului Massif.

MATERIAL AND METHODS

Four field trips gave us the opportunity to collect fauna from the Piatra Craiului Massif, both from caves and from the edaphic environment.

On the first field trip, between the 6th and the 12th of September 2002, the fauna of Valea Vlădușca and Valea Vlădușca de Piatră was investigated by our colleagues Vasilica Javorschi, T. Constantinescu and V. Gheorghiu.

On the second field trip, between the 28th of June and the 7th of August 2003, we (A. Nae and I. Popa) collected fauna from the following caves (peștera = cave): Peștera cu Lilieci (Zărnești), in the northern part of the Piatra Craiului Massif; and Peștera Dâmbovicioarei, Peștera Dracilor, Peștera Hoșilor (Peștera cu Ciuperci), Peștera Vacilor, Peștera de Sus din Valea Rea, and Peștera Dobrești, all from the Cheile Dâmbovicioarei – Cheile

Brusturețului (cheile = gorges) in the southern part of the Piatra Craiului Massif.

On the third field trip, between the 13th and the 23rd of October 2003, one of us (A. Nae) visited Peștera cu Lilieci (again), along with Avenul Gaura Gonjii and Peștera din Carieră in the northern part of the Piatra Craiului Massif; and Peștera Urșilor (Peștera de la Colțul Surpat), Peștera Lupului, Peștera Bursucului (Peștera Decolmatată), and Peștera Dobrești (again) in the southern part.

Finally, on the fourth field trip, between the 21st and the 28th of June 2004, we (A. Nae and I. Popa) collected fauna from the following caves: Peștera cu Lilieci (Upper Gallery), Peștera Mare de la Prepeleac, Peștera Mică de la Prepeleac, and Peștera Dâmbovicioarei.

Cavernicolous and edaphicolous species of Oniscidea were collected directly using tweezers. Litter was sifted using a Winkler sieve.

RESULTS AND DISCUSSIONS

During of our research between 2002 and 2004, only six species of Oniscidea belonging to four families were found on the Piatra Craiului Massif. They are as follows:

Suborder **Oniscidea** Latreille, 1802
Infraorder **Ligiomorpha** Vandel, 1943
Supersection **Diplocheta** Vandel, 1957

Family **Ligiidae** Brandt and Ratzeburg, 1831

1. *Ligidium hypnorum* (Cuvier, 1792) – Edaphicolous, hygrophilous-umbraticolous, troglophilous species (eyes large, with 120 ommatidia, intensely pigmented) (Nitzu *et al.* 2002). **Distribution:** Europe and Western Asia, introduced to North America (Radu, 1983; Schmalfuss, 2003). **Chorology:** Turano - European.

Although this is a troglophilous species, *L. hypnorum* was collected only outside the caves in Valea Vlădușca and Valea Vlădușca de Piatră by sifting very humid soil and beech leaf-litter. This was an expected find, as humid soil and leaf-litter are the places favored by *L. hypnorum*. Also, this is one of the most frequent species of the genus *Ligidium* in Romania.

Supersection **Orthogonopoda** Tabacaru and Danielopol, 1996

Section **Microcheta** Schmalfuss, 1989

Family **Mesoniscidae** Verhoeff, 1908

2. *Mesoniscus graniger* (Fruvaldsky, 1865) – Troglophilous species (blind, depigmented) (Fig. 1). **Distribution:** Slovakia, Romania, Serbia, Bosnia and Hercegovina,



Fig. 1. *Mesoniscus graniger*, photo Dr. E. Nițu.

Slovenia (Gruner and Tabacaru, 1963; Radu, 1983; Schmalfuss, 2003; Giurginca, 2003).

Chorology: Carpatho - Dinaric.

Up to the present, *M. graniger* was known from only two caves on the Piatra Craiului Massif: Peștera Dâmbovicioarei (leg. Orghidan, 1962; in Gruner and Tabacaru, 1963) and Peștera Dracilor on the right slope of Bazinul Dâmbovicioarei (leg. Tabacaru and Dancău, 1964; in Giurginca, 2003). Our study allows us to record the presence of *M. graniger* in four more caves: Peștera cu Lilieci, Peștera de Sus din Valea Rea, Peștera Hoților (Peștera cu Ciuperci), and Peștera Dobrești. There *M. graniger* was found under stones from the clayey floor and on the extremely wet walls covered by a very fine film of water. As we emphasized in a previous paper (Giurginca and Nae, 2004) this represents the first time that *M. graniger* was collected from the walls of a cave in Romania.

It is worth noting that all the mentioned caves on the Piatra Craiului Massif are quite high cave stations for *M. graniger*. From the standpoint of altitude, Peștera Dobrești (1200 m absolute altitude) is second only to Peștera Zmeilor de la Onceasa (Bihar Mountains), which is situated at an altitude of 1300 m. In fact, it is the highest cave inhabited by *M. graniger* in the Southern Carpathians. Even the lowest station on the Piatra Craiului Massif - Peștera de Sus din Valea Rea (situated at an absolute altitude of 925 m - is one of the highest recorded cave stations of *M. graniger* in Romania (Giurginca and Nae, 2004; also, see Giurginca, 2003 for altitudinal repartition of the *M. graniger* cave stations).

Section **Synocheta** Legrand, 1946

Family **Trichoniscidae** Sars, 1899

3. *Hyloniscus dacicus* Tabacaru, 1972 – Troglophilous species (one ommatidium, pigmented). **Distribution:** Romania (Tabacaru, 1972; Radu, 1983; Schmalfuss, 2003). **Chorology:** Romanian endemic.

This species was found only once at a single location in very humid beech leaf litter (together with *Ligidium hypnorum*) in Valea Vlădușca.

4. *Trichoniscus carpaticus* Tabacaru, 1974 - Troglophilous species (three ommatidia, pigmented). **Distribution:** Romania, in the Romanian Carpathians (Tabacaru, 1974; Radu, 1983; Schmalfuss, 2003). **Chorology:**

gy: Romanian endemic.

Trichoniscus carpaticus was found only once: in the valley between Brusturet and Peștera Dobrești, in the soil. Previously, *T. carpaticus* was known from five stations in the Eastern Carpathians, six stations in the Southern Carpathians, and only two stations in the Western Carpathians (for an inventory of these stations, see Tabacaru, 1974). This is the first record of the species from the Piatra Craiului Massif.

Section **Crinocheta** Legrand, 1946
 Superfamily **Oniscoidea** Latreille, 1802
 Family **Trachelipidae** Strouhal, 1953

5. *Trachelipus nodulosus* (C. L. Koch, 1838) – Edaphicolous species (Nitzu *et al.* 2002). **Distribution:** Southern and Eastern Germany, Southern Poland, Czech Republic, Slovakia, Austria, Slovenia, Croatia, Serbia, Ro-

mania, Hungary, Bulgaria (Schmalzfuss, 2003). **Chorology:** Balkano – Central European.

Trachelipus nodulosus was found at two localities: Peștera de Sus din Valea Rea and Peștera cu Lilioci.

6. *Trachelipus difficilis rotundatus* Radu, 1950 – Edaphicolous species. **Distribution:** Romania, originally considered by Radu as endemic to the area between Săvârșin and Coșteiu (Hunedoara) (Radu, 1985). **Chorology:** Romanian endemic.

Trachelipus difficilis rotundatus was found only once at a single location in Peștera Mare de la Prepeleac. As the present record clearly shows, this form is not endemic to the region of Hunedoara, but rather is more widely distributed in Romania. Its finding at this location on the Piatra Craiului Massif means an extension of approximately 200 km of its known range in our country.

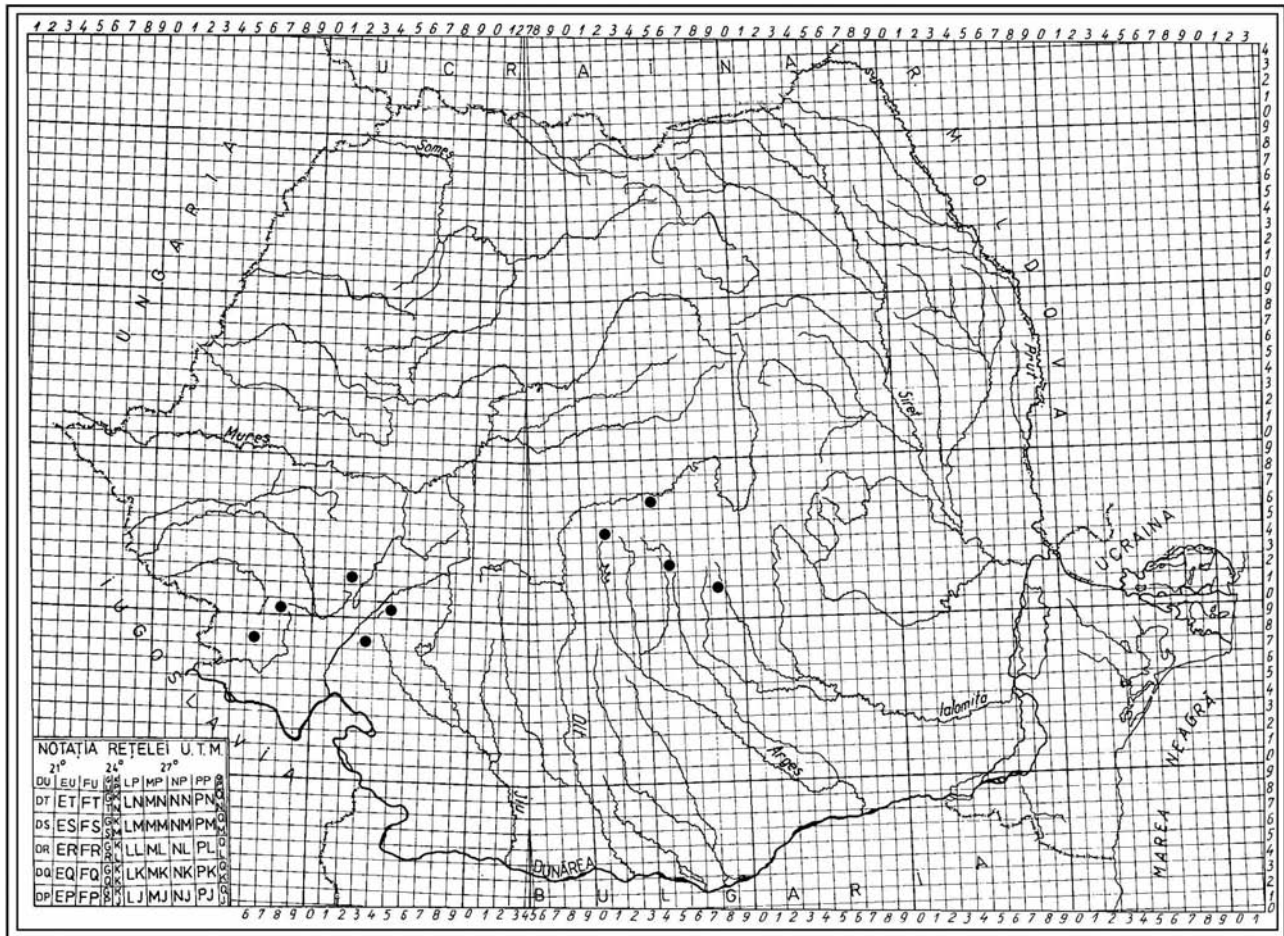


Fig. 2. Range of *Hyloniscus dacicus* in Romania.

ON THE RANGE OF *H. DACICUS* IN ROMANIA

Until now, *H. dacicus* was recorded only from the Banat Mountains, the Țarcu and Făgăraș Mountains, and the Prahova Valley (Tabacaru, 1972, 1996). Thus, the present finding represents a new location and an extension of the known range of the species in Romania (Fig. 2).

As *H. dacicus* represents an important, endemic element of the isopod fauna of our country, we give here a complete list of the localities inhabited by this species, adding not only the new location, but also two other localities previously unpublished:

1. On the shores of Certej Brook at the entrance of Bohui Cave (near the locality of Anina in Banat) (UTM : EQ 69) under dead leaves, 6.IX.1969, leg. A. and Șt. Negrea (Tabacaru, 1972).

2. On the shores of Văliug Lake (UTM: ER 70/80), Semenic Mountains, 18.VI.1972, leg. I. Juvara and I. Căpușe.

3. Upper basin of the Cerna (approx. 65 km upstream from Băile Herculane), on the banks of Cernișoara Brook (UTM: FR 40/41), under dead leaves, XI. 1961, leg. D. Dancău (Tabacaru, 1972).

4. Valley of Bistra Mărului at Poiana Mărului (upstream from Măru) (UTM: FR 22), Țarcu Mountains, under dead-leaves in an oak and fir forest, IX. 1970, leg. I. Juvara-Balș (Tabacaru, 1972).

5. "Avenul de sub Plaiul Gorganului", (UTM: FQ 48), situated on the Gorganul Massif, Mehedinți Mountains (Baia de Aramă village, N-W of Oltenia), 30.VII.1962, leg. V. Decu (Tabacaru, 1972).

6. Near the Turnuri refuge (UTM: LL 47) on the Făgăraș Massif, Podragul Valley, under stones, 12.IX. 1970, leg. I. Juvara-Balș (Tabacaru, 1972).

7. Near "Bălea Cascadă", (UTM: LL 47) leg. I. Tabacaru.

8. Bușteni – Poiana Calinderu (UTM: LL 82/83), Prahova Valley, oak and fir forest, on the banks of a

brook, 7.VIII.1971, leg. I. Juvara-Balș (Tabacaru, 1972).

9. Valea Vlădușca (UTM: LL 53), Piatra Craiului Massif, beech leaf litter, 9.IX. 2002, leg. V. Javorschi.

As we can see, even preliminary investigations on the fauna of Oniscidea from the Piatra Craiului Massif give interesting results. Many questions remain to be investigated (we intend to develop our study on the fauna of Diplopoda), among them the reasons why so few species have been found. Our research is still under way, and the diversity of Oniscidea species can be expected to increase.

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**ONISCIDAE (ISOPODA, MALACOSTRACA) НАЦИОНАЛНОГ ПАРКА
ПЈАТРА КРАЈУЛУЈ У РУМУНИЈИ**

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У овој студији констатовано је 6 врста онисцидеа, утврђених у пећинама националног парка пјатра Крајулуј у Румунији. то су: *Ligidium hypnorum*, *Mesoniscus*

graniger, *Hyloniscus dacicus*, *Trichoniscus carpaticus*, *Trachelipus nodulosus* и *Trachelipus difficilis rotundatus*.