

# CONTRIBUTION TO THE OPILIONES FAUNA OF MARAMUREȘ, ROMANIA

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**CONTRIBUȚII LA CUNOAȘTEREA FAUNEI DE OPILIONES DIN MARAMUREȘ (ROMÂNIA).** Între anii 2004 și 2006 au fost colectate în Maramureș 17 taxoni de cosași, menționată în lista comentată. Intărim prezența speciei *Leiobunum rupestre* (Herbst, 1799) în România.

**HOZZÁJÁRULÁS A MÁRAMAROS MEGYEI (ROMÁNIA) OPILIONES MEGISMERÉSÉHEZ:** A 2004 és 2006 között Máramaros megyében gyűjtött 17 kaszaspók taxon kommentált listája. A *Leiobunum rupestre* (Herbst, 1799) faj romániai előfordulásának megerősítése.

**Keywords:** Opiliones, Romania, Maramureș county, faunistics

## INTRODUCTION

The harvestmen fauna of Romania is rather complex and rich in endemics, though the identity of old data and the taxonomic value of the endemics are questionable and they need to be confirmed by comparative studies (Martens 1978). The recent checklist of Romanian harvestmen contains 45 species and 11 additional ones, which are probably misidentifications (Babalean 2005). An additional species was added to this list by Babalean (2004b). According to the latest Transylvanian checklist and bibliography (Weiss 1996), there are only a very few Opiliones data from Maramureș county, with the exception of the Rodna Mts.

Within the framework of the research program "Invertebrate faunistic investigation of the Maramureș county" we had the opportunity to collect at various sites of the county during four tours between 2004 and 2006. The Opiliones material of these collecting tours are elaborated below.

## MATERIAL AND METHODS

The specimens were bitten or collected with singling, or with sweeping net. The material is stored in 70% ethanol and deposited in the Collection of Soil Zoology, Department of Zoology, Hungarian Natural History Museum.

For the identification we used the work of Martens (1978). Nomenclature, type of distribution and ecological demands also refers to this work.

## List of localities

The localities are given in chronological order

and associated with mountain ranges. For the comparability with old records, we also give the Hungarian names in parentheses after the Romanian names. The localities are shown on the map of Maramureș county (Fig 1).

Collectors are: LD – László Dányi; MF – Mihály Földvári; JK – Jenő Kontschán; DM – Dávid Murányi; JN – Judit Nédli; KO – Kirill Orci

Piatra (Köhát) Mts:

- 1: Săpânța (Szaplonca), pine forest at the Cabana Colibi, 31.08.2004 (locality code: 2004/1), N47°52.457' E23°43.397', 832m, leg. DM-KO
- 2: Săpânța (Szaplonca), Brazi valley, 02.09.2004 (2004/12), N47°49.775' E23°44.606', 841m, leg. DM-KO
- 3: Săpânța (Szaplonca), mineral water springs in the lower valley of the Săpânța (Szaplonca) Stream, 30.06.2005 (2005/15), N47°56'05.5" E23°40'41.2", 408m, leg. JK-DM-KO
- 4: Săpânța (Szaplonca), valley of the Săpânța (Szaplonca) Stream, 30.06.2005 (2005/16), ~500m, leg. JK-DM-KO
- 5: Sighetu Marmației - Șugău (Máramarossziget - Súcó), valley of the Bârlan (Birlan) Stream above the Gyertyános forester house, 20.09.2005 (2005/2/3), ~550m, leg. JK-DM-JN
- 6: Sighetu Marmației - Șugău (Máramarossziget - Súcó), upper valley of the Șugău (Súcó) Stream above the Gyertyános area, 20.09.2005 (2005/2/4), ~600m, leg. JK-DM-JN

7: Sighetu Marmăției - Șugău (Máramarossziget - Ségó), Agriș (Egres), Asupra Sorompolui area, stream in a pine forest, 21.09.2005 (2005/2/7), ~850m, leg. JK-DM-JN

Igniș (Rozsály) Mts:

8: Ocna Șugatag (Aknașugatag), Brazilor (Fenyő) bog, 31.08.2004 (2004/5), ~800m, leg. DM-KO

9: Desești - Stațiunea Izvoare (Desze - Forrásliget), Roșie (Vöröskapu) valley, 01.09.2004 (2004/8), N47°47.882' E23°43.893', 792m, leg. DM-KO

10: Desești - Stațiunea Izvoare (Desze - Forrásliget), wet meadow and beech forest on the Valhani Plateau, 01.07.2005 (2005/19), N47°43'01.0" E23°44'32.1", 1020m, leg. JK-DM-KO

11: Desești - Stațiunea Izvoare (Desze - Forrásliget), gallery of the Mara River, 01.07.2005 (2005/21), N47°46'53.2" E23°43'40.6", 743m, leg. JK-DM-KO

12: Same locality as 10, 24.09.2005 (2005/2/18), leg. JK-DM-JN

13: Desești - Stațiunea Izvoare (Desze - Forrásliget), pine forest on the edge of the volcanic plateau, 24.09.2005 (2005/2/19A), ~1000m, leg. JK-DM-JN

Gutâi (Gutin) Mts:

14: Baia Sprie (Felsőbánya), brook in a beech forest along the road 18, 26.05.2006 (2006/15), N47°41'36.4" E23°46'31.9", 909m, leg. LD-MF-JK-DM

Maramureșului (Máramarosi) Basin:

15: Ruscova (Visóoroszi), shore of the Ruscova Stream above its confluence with the Vișeu (Visó) River, 04.09.2004 (2004/22), ~400m, leg. DM-KO

16: Rona de Sus (Felsőróna), Héra, Zalom valley, alder gallery forest, 28.06.2005 (2005/5), N47°51'54.3" E24°05'27.8", 504m, leg. JK-DM-KO

17: Sighetu Marmăției (Máramarossziget), Mocsár area, orchard, 19.22-25.09.2005 (2005/2/1), N47°55'07.1" E23°56'43.5", 369m, leg. JK-DM-JN

Lăpuș (Lápos) Mts:

18: Văleni (Mikolapatak), Secătura, pasture and beech forest at Canton Silvic, 23.05.2006

(2006/2), N47°43'46.4" E24°01'52.5", 754m, leg. LD-MF-JK-DM

19: Văleni (Mikolapatak), outflow brook of the Kígyós Lake in a beech forest, 23.05.2006 (2006/3), N47°42'54.4" E24°01'38.0", 966m, leg. LD-MF-JK-DM

20: Văleni (Mikolapatak), peat-bog inflow brook in a beech forest, 23.05.2006 (2006/4), N47°42'43.2" E24°01'48.7", 987m, leg. LD-MF-JK-DM

21: Văleni (Mikolapatak), beech forest at the mineral water sidesprings of the Mori (Malom) Stream, 24.05.2006 (2006/6), N47°43'59.8" E24°02'34.7", 620m, leg. LD-MF-JK-DM

Țibleș (Cibles) Mts:

22: Dragomirești (Dragomérfalva), alder gallery forest of the Baicu Stream and beech forest, 24.05.2006 (2006/8), N47°34'43.5" E24°14'11.8", 718m, leg. LD-MF-JK-DM

23: Dragomirești (Dragomérfalva), Poienii (Réti) valley, beech forest, 24.05.2006 (2006/9), N47°32'57.9" E24°16'29.1", 901m, leg. LD-MF-JK-DM

Maramureș (Máramarosi) Mts:

24: Borșa - Băile Borșa (Borsa - Borsabánya), Stamki Spring at the Mt. Cearcănul (Sárkány), 29.06.2005 (2005/11), N47°40'45.4" E24°52'33.6", 1654m, leg. JK-DM-KO

25: Petrova, Frumuseana, gorge of a sidebrook of the Tomnatic Stream, 25.05.2006 (2006/10), N47°52'38.1" E24°19'19.4", 681m, leg. LD-FM-JK-DM

26: Petrova, gorge of the Tomnatic Stream, 25.05.2006 (2006/11), N47°52'46.6" E24°19'57.8", 802m, leg. LD-FM-JK-DM

Rodna (Radnai) Mts:

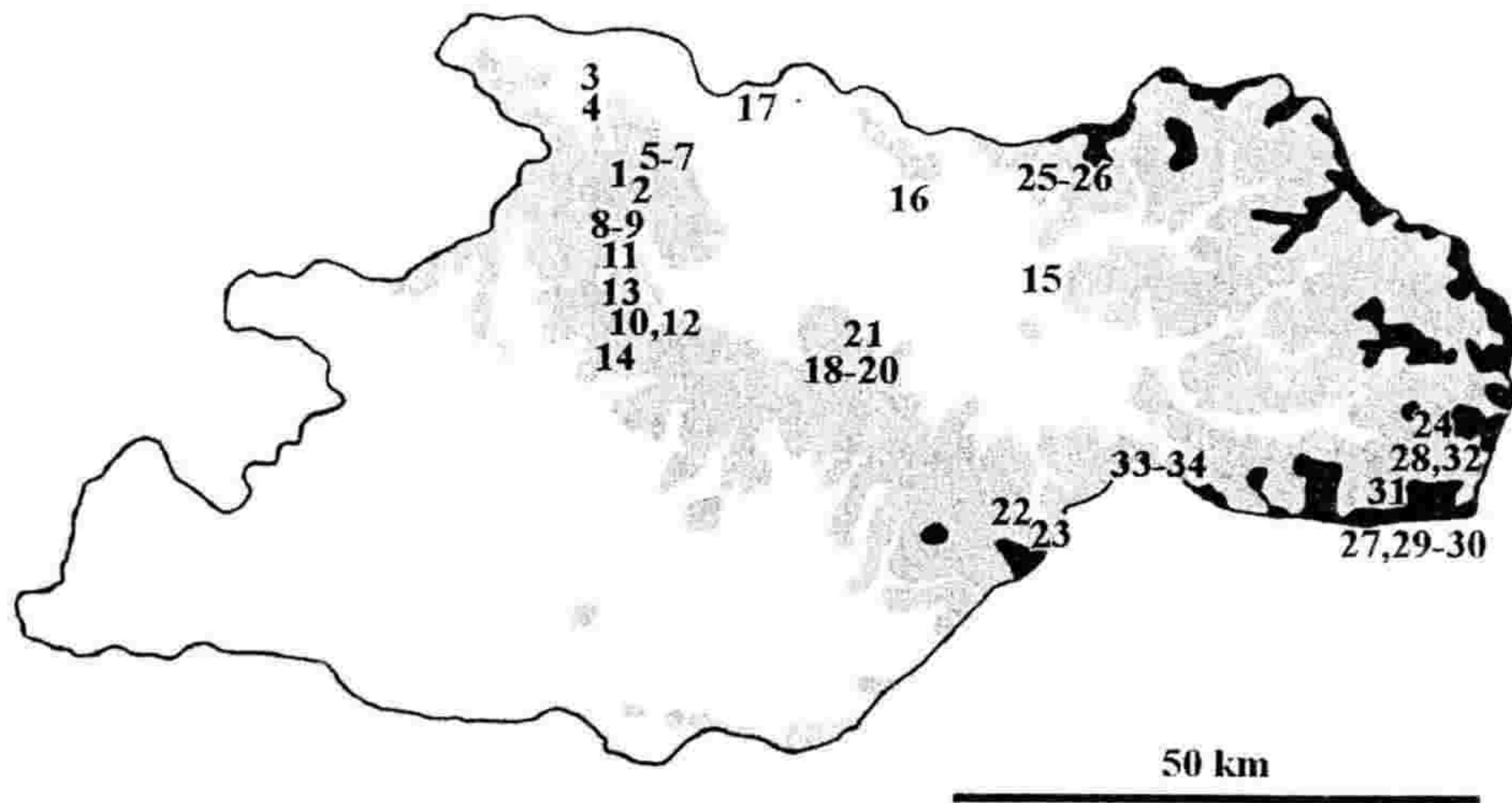
27: Borșa - Stațiunea Borșa (Borsa - Borsafüred), alpine grassland and pine scrub around the spring brooks of the Bistrița Aurie (Aranyos Beszterce) River under the Gărgalău (Gargaló) Peak, 03.09.2004 (2004/18), N47°34.380' E24°48.575', 1688-1711m, leg. DM-KO

28: Borșa - Stațiunea Borșa (Borsa - Borsafüred), pine and beech forest at the Prislop mineral water spring, 03.09.2004 (2004/20), N47°36.357' E24°50.997', 1377m, leg. DM-KO

29: Same locality as 27, 29.06.2005 (2005/8), leg. JK-DM-KO

- 30: limestone rocks above locality 27, 29.06.2005 (2005/8A), N47°34'50.0" E024°48'45.5", 1594m leg. JK-DM-KO
- 31: Borșa - Stațiunea Borșa (Borsa - Borsafüred), pine forest on the ridge between the Mt. Ștoil and Prislop (Borsai) Pass, 29.06.2005 (2005/9), N47°36'06.8" E24°50'11.7", 1544m, leg. JK-DM-KO

- 32: Same locality as 28, 29.06.2005 (2005/10), leg. JK-DM-KO
- 33: Săcel (Izaszacsal), Iza Spring, 22.09.2005 (2005/2/9), ~900m, leg. JK-DM-JN
- 34: Săcel (Izaszacsal), Iza Gorge, 22.09.2005 (2005/2/11), ~800m, leg. JK-DM-JN



**Fig. 1.** Map of the collecting sites of Opiliones in Maramureș county, Romania – grey: areas above 750m; black: areas above 1500m

**LIST OF SPECIES**

*Nemastoma lugubre* (Müller, 1776)

Data: Lăpuș Mts 19: 1♂

Middle European hygrophilous species. Our specimen was collected in a beech forest.

*Paranemastoma kochi* (Nowicki, 1870)

Data: Lăpuș Mts 20: 2♂2♀

Carpathian endemic, mountain forest inhabiting species. The specimens were collected near a brook in a beech forest.

*Paranemastoma* sp.

Data: Rodna Mts 34: 1♀

This single female cannot be firmly identified. The colour pattern of the body (Fig 2) seems to be intermediate from *P. kochi* (Nowicki, 1870) towards *P. silli* (Herman, 1871); both of them known from the Eastern Carpathians (Weiss 1996). The specimen was collected on the shore of a stream in the gorge of the Iza River.

*Mitostoma chrysomelas* (Hermann, 1804)

Data: Lăpuș Mts 18: 1♂1♀; Țibleș Mts 23: 1♂; Maramureș Mts 26: 1♀; Rodna Mts 30: 1♂

Species with wide distribution in Europe and with wide ecological spectrum. A subspecies of

*M. chrysomelas* and five additional species of the genus *Mitostoma* were described from Romania (Avram 1965, 1969, 1970). Martens (1978) treated these taxa as variations of *M. chrysomelas*. In the Transylvanian checklist (Weiss 1996) they appear as synonyms of *M. chrysomelas*, although their synonymy was never stated formally. Although our specimens seem to be rather variable we report them here as the nominal *M. chrysomelas*. The specimen from Rodna Mts. was collected in a pine scrub on limestone above 1500 m, the other specimens were collected in beech forests.

*Dicranolasma scabrum* (Herbst, 1799)

Data: Piatra Mts 4: 1♀; Lăpuș Mts 18: 1♂; Țibleș Mts 22: 1 juvenile; Maramureș Mts 25: 1♂

Thermophilous species, distributed in the Carpathians and the Balkans. The specimens were collected in beech forests.

*Trogulus* sp.

Data: Țibleș Mts 23: 1♀

This large single female cannot be firmly identified. The Romanian fauna contains 8 species of the genus, among them four endemic ones described by Avram (1971).

*Phalangium opilio* Linnaeus, 1761

Data: Igriş Mts 9: 2♀; Maramureşului Basin 17: 2♂

Species with Palearctic distribution and with wide ecological spectrum. Our specimens were collected in a beech forest and an orchard.

*Platybunus* spp.

Data: Piatra Mts: 1: 1 juvenile; Lăpuş Mts 18: 3♂2♀; 19: 1♂1♀; 20: 1♀; 21: 1♀; Țibleş Mts 22: 1♂; 23: 1 juvenile; Rodna Mts: 31: 3♂3♀; 32: 2♀

There are seven species of this rather difficult genus reported from Romania, but the occurrence of *P. bucephalus* (C. L. Koch, 1884) and the taxonomic value of the endemic taxa (*P. decui* Avram, 1968, *P. jeporum* Avram, 1968 and *P. juvarae* Avram, 1968) are questionable (Weiss 1996). Another species was recently described from the South Carpathians: *P. banarescui* Babalean, 2004.

Our adult specimens show a mixture of features, thus, we report them here without specific identification. Most of the specimens were collected in beech and pine forests along streams, but also in a semi-arid pine forest (locality 2005/9).

*Lophopilio palpinalis* (Herbst, 1799)

Data: Maramureş Mts 26: 2 juveniles; Rodna Mts 29: 1 juvenile

Hygrophyllous species with European distribution. The specimen from the Rodna Mts. was collected in a pine scrub above 1700m, the speci-

mens from the Maramureş Mts. was found in a pine - beech mixed forest.

*Egaenus convexus* (C. L. Koch, 1835)

Data: Lăpuş Mts 18: 3 juveniles

Southeast European, thermophilous forest species. Our specimens were caught in a beech forest.

*Oligolophus tridens* (C. L. Koch, 1836)

Data: Piatra Mts: 7: 1♂1♂; Igriş Mts 12: 1 juvenile; Maramureşului Basin: 15: 1♂; Țibleş Mts 23: 5 juveniles; Rodna Mts 33: 1♀

Forest species, categorised as Atlantic and Continental. Our specimens were collected in pine and beech forests.

*Lacinius ehippiatus* (C. L. Koch, 1835)

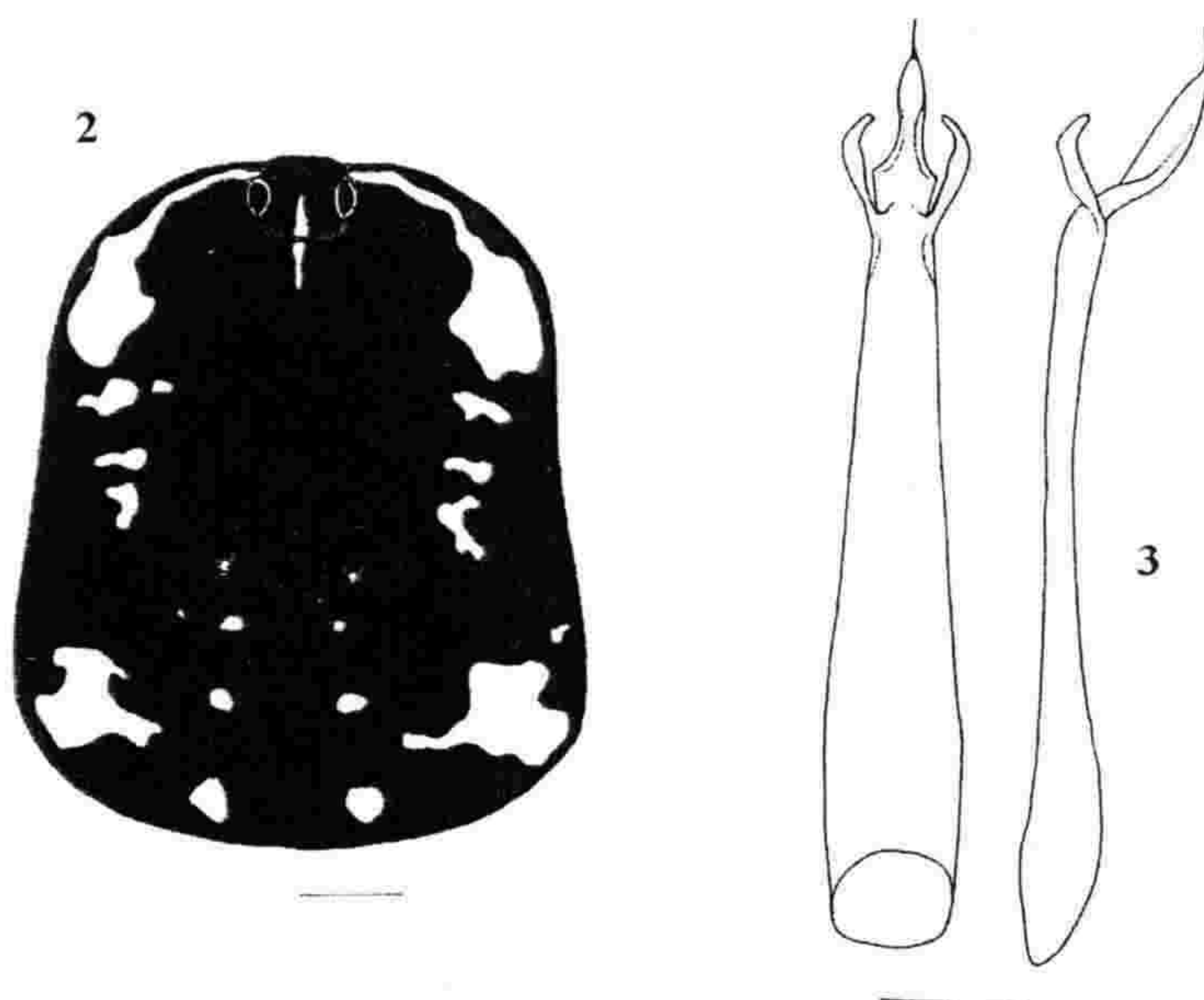
Data: Igriş Mts 8: 1♀

Hygrophyllous species with European distribution. The specimen was collected in a peat-bog with pine scrub below 900 m.

*Mitopus morio* (Fabricius, 1799)

Data: Piatra Mts 1: 1♂1♀; 5: 1♂; 7: 2♀; Igriş Mts 10: 1♂; 11: 2 juveniles; 12: 1♂; 13: 3♂2♀; Lăpuş Mts 18: 9 juvenile; 19: 3 juveniles; 20: 8 juveniles; Țibleş Mts 23: 7 juveniles; Maramureş Mts 24: 1 juvenile; Rodna Mts 27: 1♀; 28: 3♂2♀; 29: 1 juvenile; 31: 9 juveniles; 32: 5 juveniles; 33: 5♂2♀; 34: 1♂

Montan or submontan species with Holarctic distribution. Our specimens are quite variable both in size and colour pattern. They were collected in different habitats, but mostly in beech and pine forests.

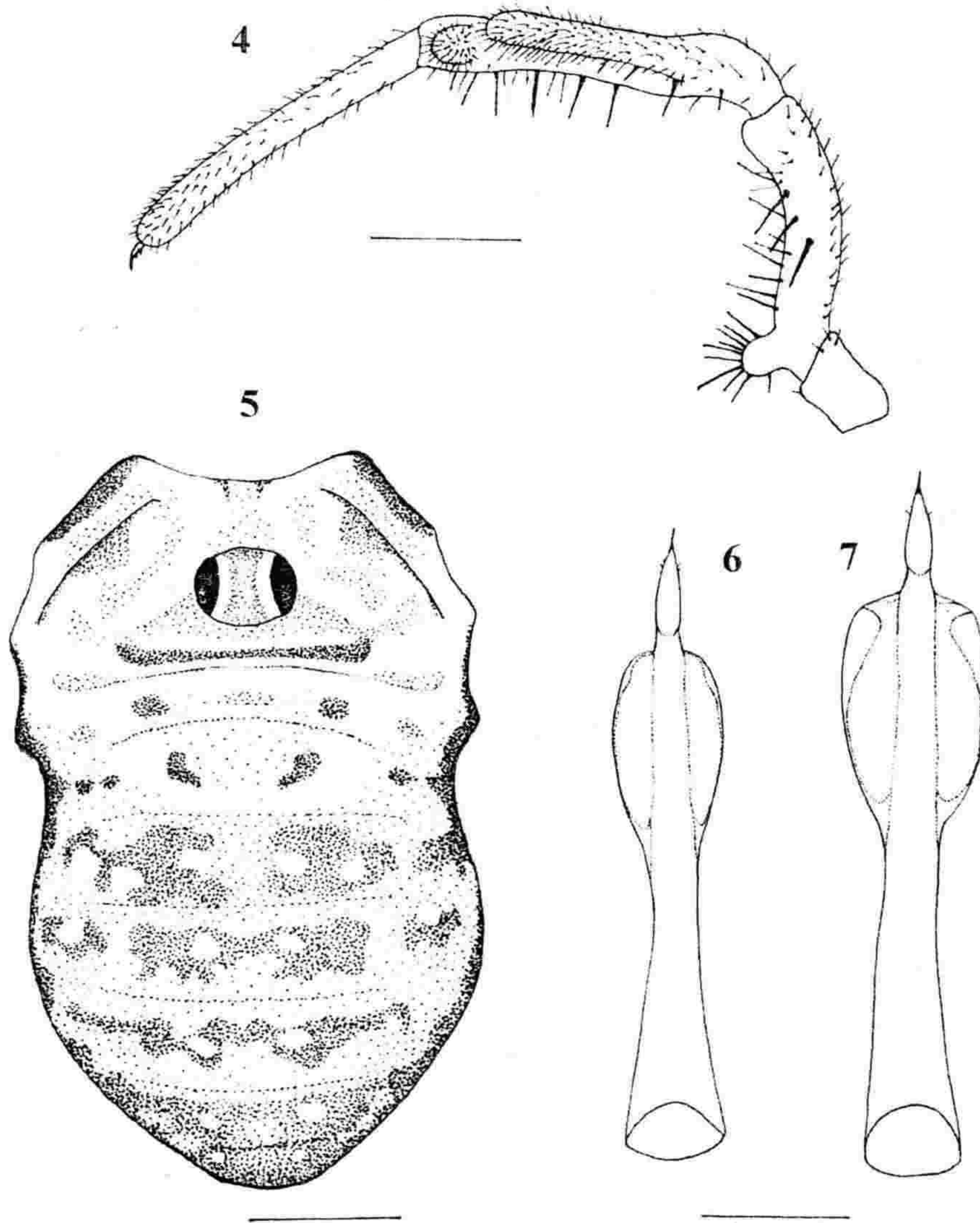


**Figs 2-3.** *Paranemastoma* sp. and *Gyas titanus* – 2: Body colour pattern of *Paranemastoma* sp., locality 34, dorsal; 3: Penis of *Gyas titanus* Simon, 1879, locality 3, ventral and lateral – scale 0.5 mm

*Gyas titanus* Simon, 1879

Data: Piatra Mts 1: 2 juveniles; 2: 1 juvenile; 3: 2♂; 4: 2 juveniles; 6: 2 juveniles; Igriş Mts 10: 1♀; 12: 1 juvenile; Gutâi Mts 14: 1 juvenile; Lăpuş Mts 18: 1 juvenile; 20: 3 juveniles; Țibleş Mts 23: 2 juveniles; Maramureş Mts 25: 1 juvenile; 26: 1 juvenile; Rodna Mts 28: 1♂ 1 juvenile; 33: 6 juveniles; 34: 1 juvenile

Hygrophyllous, European montan species. The penis of our specimens (Fig 3) are characterised by the same differences from the Alpine form like the North Carpathian ones examined by Martens (1978). It suggests that the Carpathian population may have a subspecies rank. All the specimens were collected at the shore of fast, rocky streams and springs at different elevations.



**Figs 4-7.** *Dicranopalpus* sp. and *Leiobunum* spp. - 4: Pedipalpus of *Dicranopalpus* sp., locality 33, medial; 5: Body colour pattern of *Dicranopalpus* sp., locality 33, dorsal; 6: Penis of *Leiobunum rupestre* (Herbst, 1799), locality 33, ventral; 7: Penis of *Leiobunum tisciae* Avram, 1968, locality 2, ventral – scale 0.5 mm

*Dicranopalpus* sp.

Data: Rodna Mts 33: 2 juveniles

According to Martens (1978) and Weiss (1996), *D. gasteinensis* Doleschall, 1852 is the only species of the genus *Dicranopalpus* that occurs in the Carpathians. It has only one data from the Southern Carpathians (Weiss 1996) and two from the Eastern Carpathians: one from the Bicazului (Békás) gorge (Cârdei 1956) and one

from the Ukrainian parts of the Maramureş Mts. (Szalay 1950). Indeed, our juvenile specimens have pedipalpi (Fig 4) like *D. gasteinensis*, but their size and colour pattern (Fig 5) are more resembling to *D. ramosus* (Simon, 1909). Thus, we report them herein without species level identification. They were collected in a pine forest at the Iza Spring.

*Leiobunum rupestre* (Herbst, 1799)

Data: Rodna Mts 33: 1♂1♀

Hygrophilous, montane species with European (Alpine-Carpathian) distribution. The first Romanian record of the species was given by Avram & Dumitrescu (1969), then by Dumitrescu (1972). Weiss (1980) reported the species from the South Carpathians, but later he corrected this data as *L. tisciae* Avram, 1968, and questioned the Romanian occurrences (Weiss 1996). Babalean (1997, 2000, 2002, 2003, 2004a) and Ilie (2002) also reported the species, but in the Romanian checklist its Romanian occurrence found to be questionable again (Babalean 2005). Thus, our specimens from the Rodna Mts. are confirming the occurrence of the species in Romania. Specimens were found on limestone rocks at the Iza spring.

*Leiobunum tisciae* Avram, 1968

Data: Piatra Mts 2: 1♂; 3: 8 juveniles; 4: 1 juvenile; Maramureşului Basin 16: 1 juvenile

Hygrophilous forest species, known from the upper Tisa valley of Hungary (Avram 1968), the Bihor and Rodna Mts (Avram & Dumitrescu 1969) and the South Carpathians (Weiss 1980, 1996). Data from England (Martens 1978) is possibly erroneous. According to Weiss (1996), Transylvanian data of Kolosváry (1963) on *L. limbatum* L. Koch, 1861 and *L. nigripalpe* Simon, 1879 possibly also refers to *L. tisciae*. We found all the specimens close to watercourses in forests below 1000 m, since *L. rupestre* is a typical harvestmen of the rocks at mountain streamsides. In order to compare with *L. rupestre*, we report here drawings on the penis of both species (Figs 6-7), and mention that all the *L. tisciae* specimens have the typical colour pattern, very distinct from the *L. rupestre* specimen.

## DISCUSSION

Among the 17 harvestmen taxa listed above, the most interesting faunistic advances are the only sure Romanian data of *Leiobunum rupestre*, the data on the rather restricted *Leiobunum tisciae* from four sites, the third East Carpathian data of the genus *Dicranopalpus* and the occurrence of the thermophilous *Dicranolasma scabrum* in subalpine habitats. Four taxa raise taxonomic problems, these are the genus *Platybunus* (we were not able to specifically identify any of our specimens), the identity of the *Dicranopalpus* and *Paranemastoma* specimens and the consistent difference of the Carpathian *Gyas titanus* specimens from the Alpine population.

Further collecting trips would provide data on many additional species, which are lacking from

our material, though their presence in the county is obvious (e.g. *Opilio spp.*), and possibly species which are known from the neighbouring areas, but not from Romania (e.g. *Siro carpaticus* Rafalski, 1956).

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