

# CARPATHONESTICUS OROLESI N. SP. FROM THE CARPATHIANS (ARANEAE, NESTICIDAE)

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*Abstract:* The author describes a new cavernicolous species belonging to genus *Carpathonesticus* (Nesticidae) in the Romanian Carpathians. The description of the male and the female of the new species are given.

*Key words:* Araneae, Nesticidae, taxonomy, *Carpathonesticus*, Romania.

## 1. INTRODUCTION

Until now the Family Nesticidae was represented in Romania by 21 species (including *Nesticus cellulanus*). Of these, 20 species are endemic and most of them were described as belonging to the genus *Nesticus* (DUMITRESCU, 1979, DUMITRESCU, 1980, WEISS, 1981). Only 3 species were included in the genus *Carpathonesticus* (WEISS & HEIMER, 1982, WEISS, 1983).

DUMITRESCU, 1979 divided the species from the genus *Nesticus* (Thorell, 1869) in two groups: *fodinarum* (including the species from Whestern Carpathians) and *ionescui* (including the species from Southern Carpathians). Later, LEHTINEN & SAARISTO, 1980 included the species from *fodinarum* group into the genus *Carpathonesticus*.

WEISS & URÁK, 2000, included all the species into genus *Carpathonesticus* according to the taxonomic criteria introduced by LEHTINEN & SAARISTO, 1980.

In PLATNICK, 2013 only the species from *ionescui* group belong to genus *Nesticus*, the rest of the species being included in the genus *Carpathonesticus*.

The species described by us belongs to genus *Carpathonesticus*, sensu LEHTINEN & SAARISTO 1980.

ABBREVIATIONS: E – embolus, Pc – paracymbium, Ta – terminal apophysis, Am – median apophysis, ISER – “Emile Racovitza” Institute of Speleology Bucharest.

## 2. MATERIAL AND METHOD

Analyzed material: 1 male (holotype), June 9<sup>th</sup> 2012, found in a small inactive mine (20 m in depth) from Parva Valley, Rodna Mountains; 1 female (allotype) and 1 ♀ (paratype) captured in the same locality with holotype, legit Nae A. The examined materials are kept in ISER collection.

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The material was preserved in 70% ethylic alcohol. The dissections were made in glycerol at a Stemi 2000 stereomicroscope and mounted for observation in a mixture of 'Merk' gelatin and glycerol anhydrous. An Olympys CH2 with drawing attachment was used for microscopic examination and drawings.

### 3. RESULTS

#### *Carpathonesticus orolesi* n.sp

##### **Diagnosis:**

*Carpathonesticus orolesi* n.sp. differs from other species by genital characters: paracymbium (♂) and epigyne/vulva (♀) (Figs, 1–7).

**Description:** *Male holotype.* Measurements (mm): carapace 1.52 long, 1.3 wide; abdomen 1.96 long, 1.5 wide; sternum 0.82 long, 0.74 wide.

Color: carapace and sternum are light yellow-brown. Abdomen is yellowish white. The male has no pattern on the abdomen. Light yellow brown legs (a little darker than the rest of the body).

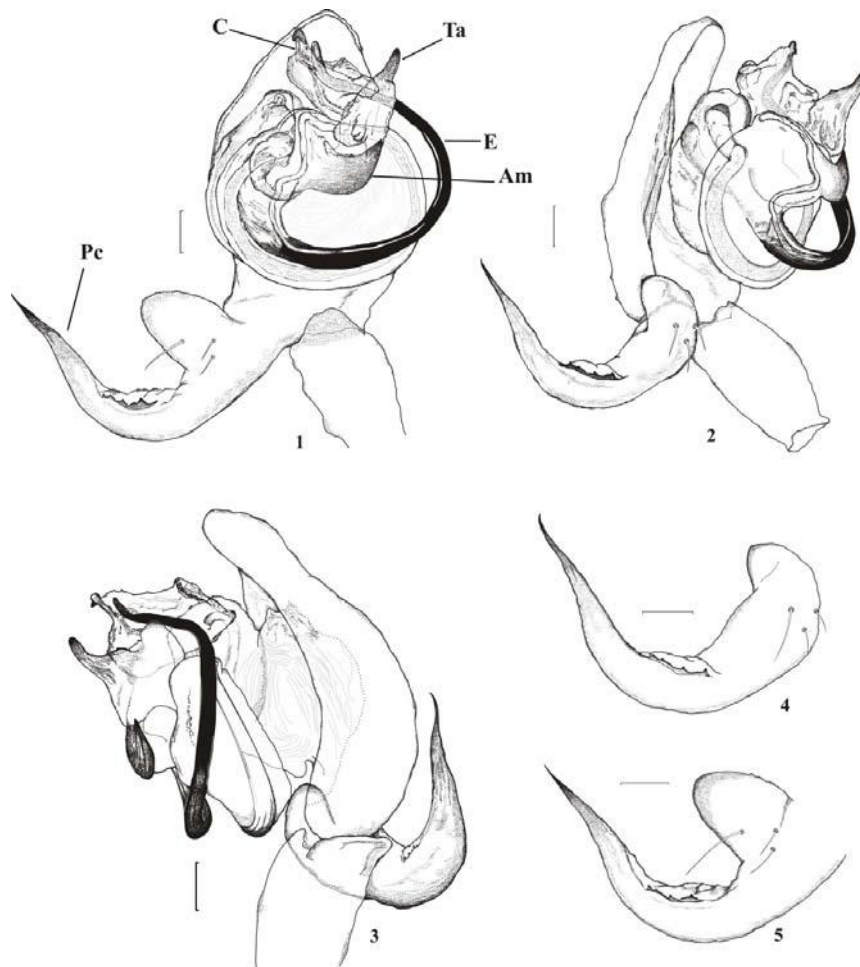
Chelicerae: 0.74 mm long. Color: light brown. Their external border presents three teeth, the external one being smaller than the other two situated towards the interior. The interior border of chelicera has 5-6 denticles placed in descending order from interior to exterior.

##### Legs measurements (mm)

	Fe	Pa	Ti	Mt	Ta	Total
Palp	0.9	0.26	0.34	-	0.8	2.3
I	3.38	0.72	3.46	3.2	1.46	12.22
II	2.74	0.68	2.44	2.38	1.2	9.44
III	2.32	0.56	1.64	1.76	1	7.28
IV	2.96	0.6	2.38	2.3	1.16	9.4

Legs: I, II, IV, III.

The general structure of bulbous is not different from the other endemic species in the Carpathians. The distinction is made by the shape of radix, conductor and terminal apophysis (Figs. 1, 2, 3). In the terminal end (superior), the conductor has the shape of a beak (it has a small lateral apophysis). The terminal apophysis is long, narrowed to the top, and has a small swelling at the base, in the shape of a bulb. The median apophysis has the shape of a sharp spur, similar to the other species of the genus from the Romanian Carpathians.



Figs. 1-5. *Carpathonesticus orolesi* n.sp. (Rodna Mountains, Romania).  
Male palp, ventral (1), lateral (2, 3) and paracymbium (4, 5). Scale line 0.1 mm.

Paracymbium (Figs. 4, 5) is characterized by its simple superior branch, without denticles on the external border and presents a notched chitinized lamella (with 4 denticles) at the basis. The inferior branch of paracymbium has no specific differences.

*Female allotype.* Measurements (mm): carapace 1.64 long, 1.3 wide; abdomen 2.96 long, 2.2 wide; sternum 0.92 long, 0.86 wide.

Color: Carapace, light yellow-brown. Sternum is yellowish brown, grey shaded. Abdomen white-yellowish, with a dorsal pattern in dark grey. Legs are yellow-brown with two dark stripes on the femur and tibia.

Chelicerae: 0.66 mm long. Brown, darker than the cephalotorax.

The chelicerae present 3 teeth on the external border and 5-6 denticles on the internal one, identical in shape and disposing as the ones from the male.

Legs measurements (mm)

	Fe	Pa	Ti	Mt	Ta	Total
Palp	0.82	0.28	0.4	-	1	2.5
I	3.34	0.74	3.28	2.92	1.34	11.66
II	2.58	0.66	2.22	2.1	1.14	8.7
III	2.02	0.54	1.32	1.48	0.96	6.32
IV	2.88	0.66	2.22	2.06	1.12	8.94

Legs: I, IV, II, III.

Epigyne (Figs. 6–7) distinguishes by the shape of epigastric plate that has a median septum like the majority of the endemic species belonging to genus *Carpathonesticus* in the Romanian Carpathians, although is less visible than that of other species. The plate has trapezoidal shape, extended anterior and narrowed posterior, weakly sclerotised and covered by bristles. It does not continue at its basis, on one side and the other, with hook shaped chitinous borders as in the other species, resembling from this point of view, with the species of the *fodinarum* group. Its posterior edge is not prominent; it is better sclerotised than the rest of the plate.

Vulva is constituted, in general, on the same pattern as the Carpathian species presenting spermathecae, copulation duct and diverticula of the fecundation duct with the sinuous shape. Both, copulatory duct of the spermathecae and the fecundation duct are opened in the genital atrium.

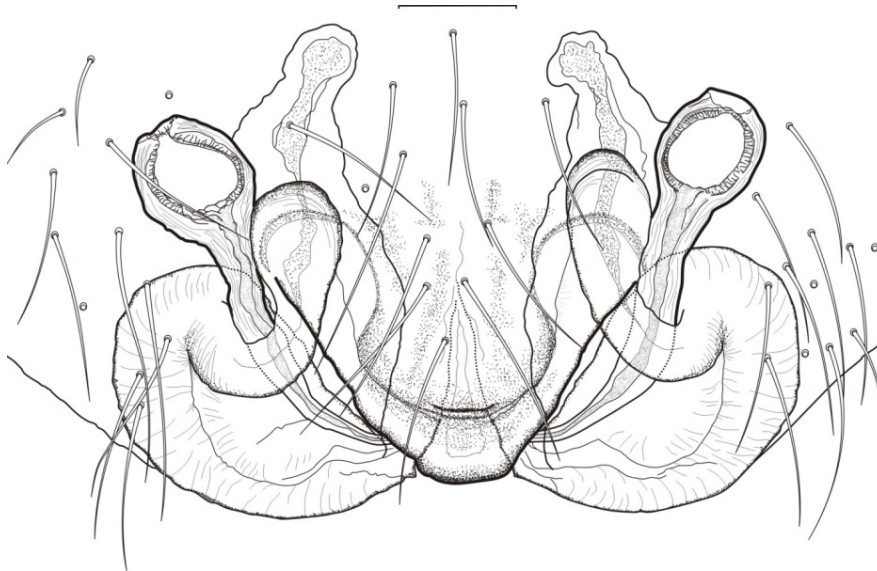


Fig. 6. Epigyne/vulva ventral view. Scale line 0.1 mm.

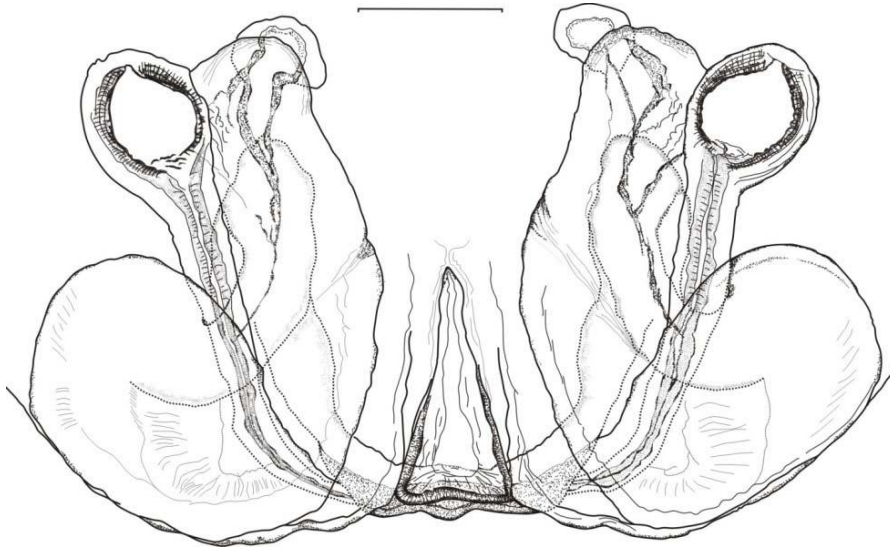


Fig. 7. Epigyne/vulva dorsal view. Scale line 0.1 mm.

#### 4. DISCUSSIONS

*Carpathonesticus orolesi* is the only species of this genus found until now in the Eastern Carpathians (Romanian).

The species presents some similarities with *Carpathonesticus galotshkai*, Evtushenko 1993 in the general shape of radix, and especially in the shape of terminal apophysis which resembles in a certain matter with that of the forenamed species. The difference is given by the shape of the conductor which, in the case of *C. galotshkai*, is sharpened in the apex. Another difference is given by the median apophysis that has the sharp form in the case of *C. orolesi*, in contrast with *C. galotshkai* where the median apophysis is rounded. *Carpathonesticus orolesi* differs from *Carpathonesticus galotshkai* by the presence of the denticles on the paracymbium.

*Derivatio nominis*: the species is named after the Geto-Dacian king Oroles (II<sup>nd</sup> century B.C.), head of Dacian tribes from this area, that defeated the Bastarnae (Celtic-Germanic tribes) stopping their advance into the Carpathian arch.

#### REFERENCES

- DUMITRESCU, M., *La monographie des représentants du genre Nesticus des grottes de Roumanie, I-ère Note*. Travaux de l'Institut de Spéologie „Emile Racovitza”, **18**: 53–84, 1979.
- DUMITRESCU, M., *La monographie des représentants du genre Nesticus des grottes de Roumanie, II<sup>e</sup> Note*. Travaux de l'Institut de Spéologie „Emile Racovitza”, **19**: 77–101, 1980.

- EVTUSHENKO, K. V., *A new species of the genus Carpathonesticus (Aranei: Nesticidae) from the East Carpathians of the Ukraine* // *Arthropoda Selecta*. **2**(3): 61–63, 1993.
- LEHTINEN, P. T., SAARISTO, M. I., *Spiders of the Oriental – Australian region. II. Nesticidae* // *Ann. Zool. Fenn. T.* **17**: 47–66, 1980.
- PLATNICK, N. I. (2013), *The World Spider Catalog*, version 14.0. American Museum of Natural History, New York. Available from <http://research.Amnh.Org/entomology/spider/catalog/index.html>. (accessed 09.12. 2013).
- WEISS, I., *Der Kopulationsmechanismus bei Nesticus cibiniensis n. sp., einer neuen Höhlenspinne aus Rumänien (Arachnida, Araneae, Nesticidae)*. – Reichenbachia, Staatl. Mus. Tierk. Dresden **19** (25): 143–152, 1981.
- WEISS, I. & S. HEIMER, *Zwei neue Carpathonesticus-Arten aus Rumänien nebst Betrachtungen über Kopulationsmechanismen und deren Evolution (Arachnida, Araneae, Nesticidae)*. – Reichenbachia, Staatl. Mus. Tierk. Dresden **21** (20): 167–174, 1982.
- WEISS, I., *Carpathonesticus lotriensis n. sp., eine neue Höhlenspinne aus Rumänien (Arachnida, Araneae, Nesticidae)*. – Reichenbachia, Staatl. Mus. Tierk. Dresden **21** (16): 107–112, 1983.
- WEISS, I., Urák, I., *Checklist of the Romanian spiders (Arachnida: Araneae)* available from: <http://members.aol.com/Arachnologie/Faunenlisten.htm>, 2000.

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