NEW REPORT OF *SOREX ALPINUS* SCHINZ, 1837 (MAMMALIA: INSECTIVORA) FROM THE PIATRA CRAIULUI MOUNTAINS (ROMANIA)

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Abstract. The distribution of the alpine shrew in Romania has a lot of gaps because of the small sized populations that remained in the alpine regions and their dynamics. Acording to literature, *Sorex alpinus* is present in small populations in the Eastern and Southern Carpathians. This faunal note contributes to a better understanding of local distribution and habitat preferences of populations of *Sorex alpinus* from the Romanian Carpathians.

Key words: Sorex alpinus, Piatra Craiului, caves, drilling, scree, MSS.

1. INTRODUCTION

Sorex alpinus is one of the smallest representatives of the genus. It is very often mixed up with *Sorex araneus* because the color of the fur is more or less similar, having a characteristic long tail that has almost the same size as the body.

In the years 2006 and 2009, during the sampling period of fauna from the mesovoid shallow substratum (MSS) and profound subteranean environments, carried out by our colleagues in the frame of a study on the soil and subterranean fauna from the Piatra Craiului Massif (NAE and coll. 2005, NITZU and coll. 2008), three skulls and four mandibles were collected from a small cave from Valea Seacă and one individual was captured from a drilling.

2. MATHERIALS AND METHODS

In October 2006 during one field trip when I joined my colleagues Augustin Nae and Anca Dragu to the caves from Valea Seacă, Piatra Craiului Mountains, we collected 3 skulls and 4 mandibles of *Sorex alpinus* from a deposit found at the entrance of the "Peştera cu Piramida" Cave (name given by us). The deposit also contained bat skulls.

In April 2009, one alpine shrew was collected from one drilling of 0.75 m in depth at the Cerdacul Stanciului Station. The drillings are used by my colleague, Augustin Nae for invertebrate studies in the MSS from the Piatra Craiului Mountains. The drillings were excavated in the mesovoid shallow substratum (subterranean

superficial environment) at 50 to 75 cm in depth, then, a PVC tube (10 cm in diameter) with small holes (8 mm in diameter) on the walls and a pitfall type trap at its base was placed in each of them. They were completely buried in the MSS and the top of the tube was covered with a plastic bag, to obturate the access of the epigaeic fauna. The traps contain ethylene-glycol as preservation agent. Each drilling was emptied monthly, excepting the winter period when the whole area is covered by thick snow. The specimen has penetrated the drilling tube at the base, enlarging one of the wall holes.

The material from the "Peştera cu piramidă" Cave was cleaned of the debris, measured and it is preserved in the collection of Institute of Speleology "Emil Racovitza", Bucharest. The head, body and tail length of the alpine shrew from the drilling was measured. The skull had been cleaned of the tissues, and after that the main cranial measurements were taken.

The cranial measurement used for al the skulls are:

- **condilobasal length of the skull** – measured only for the specimen found in the drilling, because the other skulls found in the cave were not complete.
- **hight of the mandibular ramus** – measured only at two of the mandibles from the cave, (the other two beeing broken) and at the specimen from the drilling.
- **length of the skull,** present only for the individual from the drilling
- **breadth of the skull**
- **length of the superior tooth row**
- **length of the inferior tooth row**

3. RESULTS AND DISCUSSIONS

The length of the head and body of the specimen from the drilling is 35 mm, and the length of the tail is 34 mm.

The cranial measurements are presented in Table 1.

Table 1

Values of the cranial measurements of *Sorex alpinus* skulls. (**c.-b.**: condilobasal; **I**: incomplete)

Station		c. – b. length (mm)	Heigth of mand. ramus (mm)	Length of skull (mm)	Breadth of skull (mm)	Length of sup. tooth row (mm)	Length of inf. tooth row (mm)
P. cu Piramidă	Skull 1	I	–	I	0,9	0,7	–
	Skull 2	I	–	I	I	0,9	–
	Skull 3	I	–	I	I	0,8	–
	Mand. 1	–	4,25	–	–	–	0,7
	Mand. 2	–	4,3	–	–	–	0,8
	Mand. 3	–	I	–	–	–	0,8
	Mand. 4	–	I	–	–	–	I
Cerdacul Stanciului	Skull	10,5	0,3	10,55	0,7	0,6	0,6

The skull is smaller than the one of the common shrew (*Sorex araneus*). His teeth are tipped with brown, a characteristic feature for *Sorex*. The upper unicuspids gradually diminish in size from the first to the fifth. Viewed from the lateral side, the fifth upper cusp (P^2) is plainly visible all over its breadth (Fig. 1) in comparison with *Sorex araneus* where P^2 is only partly visible and it is smaller. The lower incisior (I_1) is three-cusped and the canine C_1 has two cusps (Fig. 2).

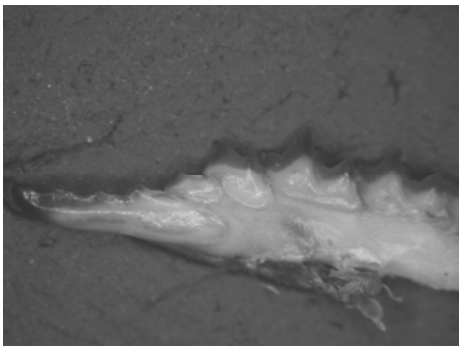

Fig. 1 – *Sorex alpinus* upper jaw.

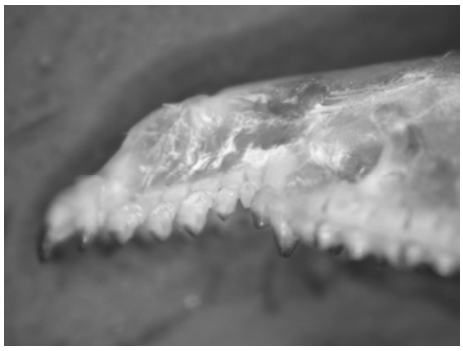

Fig. 2 – *Sorex alpinus* lower jaw.

DISTRIBUTION

Sorex alpinus was recorded for the Pyrenees, Alps, Balkans, Harz, Carpathians and Sudetes Mountains (PUCEK, 1981) at altitudes over 500 m. It was reported at 2500 m in the Alps and its biology is poorly known.

In Romania *Sorex alpinus* is represented by isolated populations from the Southern and North of the Eastern Carpathians. His presence is assumed in the other groups of the Carpathian Mountains, although it hadn't been collected yet. The first information about the alpine shrew in Romania comes from MILLER's "Catalogue of the Mammals of Western Europe" (1912) where are mentioned 4 individuals collected from Haţeg by E. DODSON. Later, the species is citated by CORNELSON and coll. (1955) from Iacobeni-Vatra Dornei (Suceava County), SZABO (1965) from Rodna and Suhard Mountains, SIMIONESCU (1968) from Ceahlău Mountains, BARBU and coll. (1980) from Câmpulung-Muscel, SIMIONESCU (1985) from Bicazului Gorges, BENEDEK (2005) from Râu-Şes, Retezat, Cibinului, Făgăraş Mountains and Lotrioara Valley. Our study enlarges the species distribution in the Southern Carpathians (first record for the Piatra Craiului Massif) (Fig. 3) and represents the first observation on the presence of this species in the superficial subterranean environment.

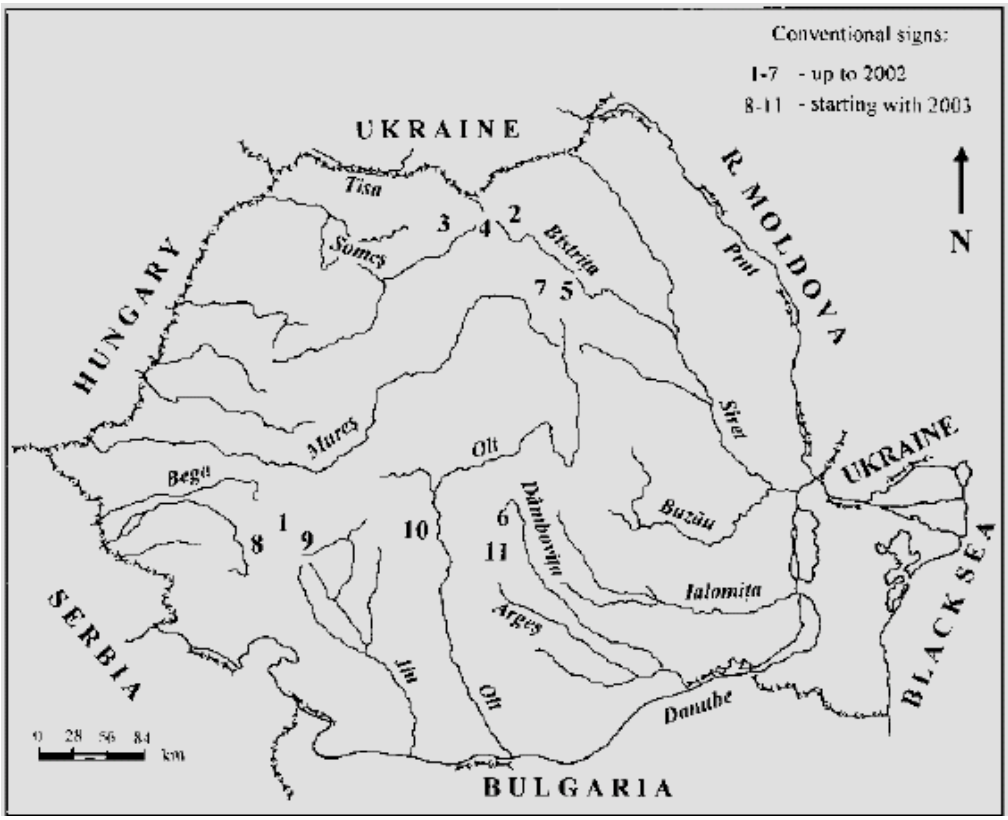

Fig. 3 – The distribution map of *Sorex alpinus* in Romania (after MURARIU and BENEDEK, 2005).
1 – Retezat Mts.; **2** – Iacobeni – Vatra Dornei; **3** – Rodna Mts.; **4** – Suhard Mts.; **5** – Ceahlău Mts.; **6** – Câmpulung-Muscel; **7** – Cheile Bicazului; **8** – Râu Şes – Ţarcului Mts.; **9** – Retezat Mts.; **10** – Lotrioara Valley – Cibinului Mts.; **11** – Făgăraş Mts.

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