

# Contribution to the distribution of terrestrial small mammals in the Maramureş county, Romania

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**Abstract.** During a short collecting trip 47 small mammals, three species of shrews and four species of rodents (*Crocidura leucodon*, *Neomys anomalus*, *Neomys fodiens*, *Microtus arvalis*, *Apodemus agrarius*, *A. flavicollis*, *A. sylvaticus*) were detected near Crăciuneşti (Maramureş County). The striped field mouse (*Apodemus agrarius*) and the common vole (*Microtus arvalis*) proved to be the characteristic dominant species of the small mammal community. *Micromys minutus* and *Myodes glareolus* were not collected in the habitat characterized by reed-bed vegetation.

**Keywords:** terrestrial small mammals, distribution, Maramureş, Romania

**Adatok a Máramaros (Románia) kisemlőseinek elterjedéséhez.** A rövid gyűjtőút alkalmával három cickány és négy rágesáló faj (*Crocidura leucodon*, *Neomys anomalus*, *Neomys fodiens*, *Microtus arvalis*, *Apodemus agrarius*, *A. flavicollis*, *A. sylvaticus*) kimutatására került sor Máramaros megyéből. A vizsgált élőhelyen a kisemlős-közösség karakterfajai a pirókegér (*Apodemus agrarius*) és a mezei pocok (*Microtus arvalis*) voltak. A nádas területén végzett vizsgálatok során a törpeegeret (*Micromys minutus*) és a vöröshátú erdei pockot (*Myodes glareolus*) nem sikerült megtalálni.

**Kulcsszavak:** kisemlősök, elterjedés, faunisztika, Máramaros-megye, Románia

**Rezumat. Date referitoare la răspândirea mamiferelor mici în Maramureş (România)**

Cu ocazia drumului scurt de colectare, au fost identificate în Maramureş, trei specii de insectivore și patru de rozătoare (*Crocidura leucodon*, *Neomys anomalus*, *Neomys fodiens*, *Microtus arvalis*, *Apodemus agrarius*, *A. flavicollis*, *A. sylvaticus*). În habitatul cercetat speciile caracteristice ale populațiilor de mamifere mici au fost șoarecele-vărgat de câmp (*Apodemus agrarius*) și șoarecele-de-câmp (*Microtus arvalis*). Cu ocazia cercetărilor efectuate în stufăriș nu s-au identificat șoarecele-pitic (*Micromys minutus*) și șoarecele scurmător de pădure (*Myodes glareolus*).

## Introduction

A considerable amount of records have been published on the distribution of terrestrial small mammals in Transylvania in the last decades (Banaru, 1997, 1998; Benedek, 2004, 2006, 2007, 2008; Benedek & Drugă, 2005; Benedek et al., 2002; Benedek & Sirbu, 2009; Gubányi, 2016, Istrate,

1998; Lazăr *et al.*, 2012; Mészáros & Murai, 1979; Murai, 1987; Murariu, 1987, 1997, 2001, 2002; Murariu & Radulet, 1998; Radulet, 1997, Sike & Gubányi, 2003-2004; Sikó Barabási, 1993; Sikó Barabási *et al.*, 1995, 2011, Wagner, 1974). Murariu & Radulet (1998) reviewed the published records on small mammals considering the Maramureş County and published new data for Maramureş Depression. Particularly interesting is that there are some data about *Sicista betulina* and *Microtus tatricus* in Radna Mountains. Until now 46 mammalian species have been recorded from Maramureş Depression (Murariu & Radulet, 1998). The aim of this short communication is to provide additional data for distribution of small mammals in Maramureş County.

## Material and methods

This study is based on the records of small mammals collected near Crăciuneşti, (47.948213°, 23.980105°) in Maramureş County, Romania for parasitological investigation. Line transect method was used with traps (33 pieces/line) placed at a distance of five meters from one another. Three transects were used and trapping was conducted for 4 days. Lines were checked at two different times of the day in the research period. The systematic order and the scientific names of the species are given according to *Wilson & Reeder* (2005).

## Results and discussion

Altogether 47 small mammals were trapped, three species of shrews (Soricidae) and five species of rodents (Rodentia) were detected, namely: *Crocidura leucodon*, *Neomys anomalus*, *N. fodiens*, *Microtus arvalis*, *Apodemus agrarius*, *A. flavicollis*, *A. sylvaticus*). Sampling locality of Crăciuneşti proved to be optimal habitats for small mammals. In spite of disturbance (grazing) reed-bed can sustain a diverse and considerable small mammalian community.

During the autumn collecting trip, the invasive striped field mouse (*Apodemus agrarius*) was the most prevalent species in the sample (Fig. 1.). In General, expansion of this species in the Carpathian-basin seems to be the most dramatic event of small mammalian species directly unassisted by man. Dissemination and rapid increase of its abundance are related with climate change, fragmentation of habitats and agricultural activity. Strong competitive pressure of *A. agrarius* on the certain syntopic rodent (*Apodemus* spp. Muridae) species changes dominance relationship in small mammalian community, as well (*Tulis et al.* 2016).

The striped field mouse was followed in the dominance order by the common vole (*Microtus arvalis*), which at that time showed approximately the half prevalence as *A. agrarius*. All of *Microtus arvalis* were collected in the edges of reed-bed, which is probably the result of overgrazing of pasture situated around the reed-bed. At the same time, the typically forest-dwelling vole species *Myodes glareolus*, which frequently populate the reed-bed at autumn has not been captured. Specimens and/or nests of reed-dwelling and

widespread harvest mouse (*Micromys minutus*) have not been detected, as well. On the other hand, two water screw species *Neomys anomalus*, *N. fodiens* were collected by the traps, which can be explained by wet condition of high and low sections of the sample site. There was a direct connection between the reed-bed and a temporary water body situated near to sample site. *Crocidura leucodon* was also detected by a relatively higher abundance, compared to water screws. Surprisingly, *Sorex araneus* and *S. minutus* were not captured at this occasion. Two *Apodemus* species (*A. flavicollis* and *A. sylvaticus*) were also found during the trapping period, which were altogether with screws additional species of the small mammalian community.

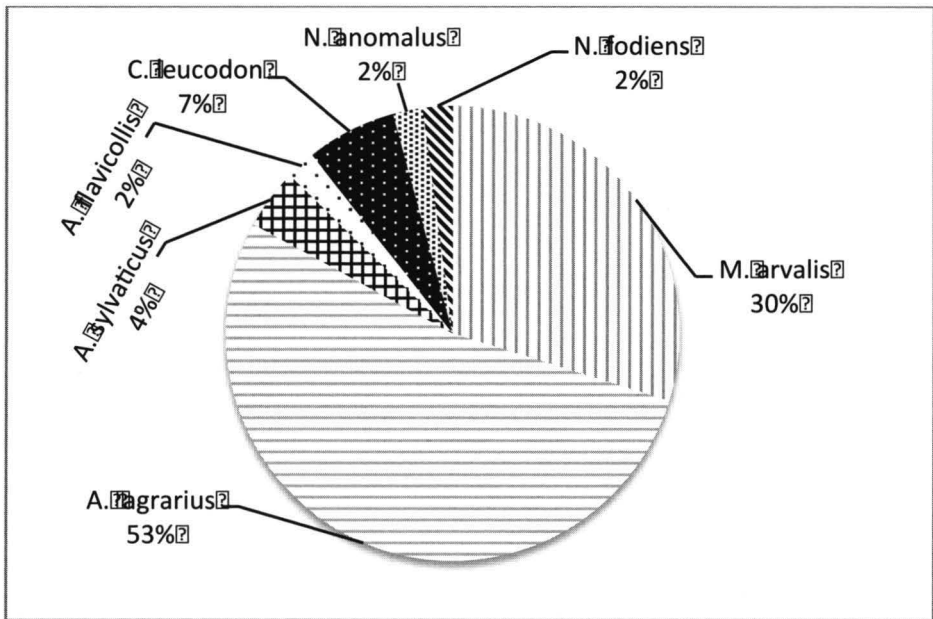


Fig. 1. Species composition of small mammalian community at Crăciunești (Maramureș County)

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*Localitatea Crăciunești, Maramureș – zona cercetată, Mohelca  
Foto: Chiș Timur Vasile*

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