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=== ORAL PRESENTATION ABSTRACT ===

# Endemic rodent species in the Ukrainian Carpathians and their spatial distribution

Zoltán Barkaszi[1,✉]

Mountain systems are characterized by a significant habitat diversity not only in geographic dimension (massifs, ridges, valleys), but also elevational zones, which leads to a high level of biodiversity and a complex set of geographical ranges. The altitudinal zonation in the Ukrainian Carpathians has its own features on both the northern and southern megaslopes related mainly to the ratio of mountain biotopes with their corresponding analogues on adjacent plains.

Accordingly, the peculiarities of the region's fauna and the uniqueness of assemblages are determined by two groups of species: (i) species typical for certain altitudinal zones (or interzonal biotopes as well), and (ii) species distributed exclusively within these zones or only in the Carpathians (endemics, regional endemics). In most cases, these two groups are represented by the same set of species meaning that they should be analysed together.

Our study focuses on the order Rodentia as model object, being the largest group of mammals in the region's fauna. The distribution of rodents is closely related to the type of biotopes and altitudinal zones. Such connection is more evident in endemic species having a strict specialization and limited adaptive capability.

In the rodent fauna of the Ukrainian Carpathians, two groups of endemics can be distinguished: (i) actual endemics (species considered endemic for the entire Carpathians), and (ii) regional endemics (species that within Ukraine occur only in the Carpathians). The sole endemic and autochthonous rodent species in the Carpathians is *Terricola tatricus* (Mitchel-Jones *et al.*, 1999) represented in the Ukrainian Carpathians by a subspecies *T. t. zykovi* (Zagorodniuk, 1989). Such species as *Chionomys nivalis*,

[1] *National Museum of Natural History, National Academy of Sciences of Ukraine, Bohdan Khmelnytsky St. 15, 01030 Kyiv, Ukraine.*
✉ ***Corresponding author: Zoltán Barkaszi**, National Museum of Natural History, National Academy of Sciences of Ukraine, Bohdan Khmelnytsky St. 15, 01030 Kyiv, Ukraine,*
*E-mail: barkaszizoli@gmail.com*

*Sicista betulina*, and *Arvicola scherman* are regional endemics, the two latter are also represented by separate subspecies *S. b. montana* (Zagorodniuk and Kondratenko, 2000) and *A. s. gutsulius* (Zagorodniuk, 2001).

Analysis shows that the distribution of these species is related to the elevational zones with corresponding types of assemblages. In particular, both *C. nivalis* and *S. betulina* are part of the montane mammalian assemblage having insular range in this region. The first species, as a glacial relict (Mitchel-Jones *et al.*, 1999), is common for the subalpine zone of Chornohora massif, where it lives among scree and krummholz thickets (mainly of *Pinus mugo*). The second one inhabits subalpine meadows and krummholz of the Chornohora and Gorgany Mts. As a boreal species, *S. betulina* "tends" to the northern megaslope, which is evidenced by its records from the Skole Beskids.

The Tatra pine vole (*T. tatricus*) has a distribution restricted to the forest zone where it occupies habitats on early stages of succession both natural (windthrows, glades) and anthropogenic (clearcuttings) origin.

The montane water vole (*A. scherman*) is distributed from the foothills up to the subalpine zone, and its range is actually continuous in the region up to the valley of the Dniester River. However, this vole expanses its range further north to Roztochia (Zagorodniuk and Zatushevsky, 2012).

Projections of ranges of these species in the Ukrainian Carpathians concentrically overlap. Such pattern is common for the largest massifs such as Chornohora, Svydovets, and Gorgany, which are characterized by a high diversity of local biotopes and clearly expressed elevational zones. Obviously, with the increase of elevation the absolute area of biotopes decreases, so does their carrying capacity. It means that higher elevations have not only less species diversity (McCain and Grytnes, 2010), but also less effective population size of species. Therefore, mountain species and assemblages (in particular montane ones) are considered highly rare and they need prior conservational attention.

Endemic rodent species of the Ukrainian Carpathians deserve priority protection that is particularly provided by their inclusion (except for *A. scherman*) into the Red Data Books of Ukraine and of the Ukrainian Carpathians.

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