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Lukács Mészáros

The proposal of **Lukács Mészáros**, "*Giant Dwarfs, The Evolutional Center of Extinct Monster-Shrews in the Carpathian Basin*" is connected to the research of Piroska Bartháné Pazonyi (K 104506).


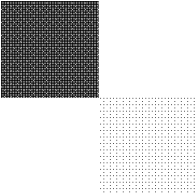
The Soricidae family (shrews) is the richest in tribe among insectivorous mammals. They are present in the Carpathian Basin since the Middle Miocene age (for more than 15 million years). Since their certain groups require specific environmental conditions, their appearance or disappearance indicates well the changes of the environment: the alteration of climate, flora and fauna. The rising young Carpathians isolated the basin from the surrounding areas in the Miocene. Revolutionary

evolutional processes took place in its inner gallery forests by the coast of the slowly filling Pannonian Basin and in the bleak, island-like bulges of the Transdanubian Mountains. Such "giant" shrews appeared which grew at least three times as large as their relatives of the present day (the size of which is around 5-10 cm). The evolutional center of these "Anourosoricini" shrews was in the Carpathian Basin, which offered ideal circumstances to speciation. We have described several species of their many genera across Hungary. Their most excessively specialized and largest-sized species was named "*Kordosia*" after professor László Kordos. In the continuously drying environment, the only way to their survival was to convert from eating insects to consume snails or small vertebrates. This is

proven by our dental morphological analyses. We have shown through the morphometric analysis of their limb bones that they were both at ease on land and sea, therefore, their appearance indicates the proximity of open stretch of water.

Presumably due to the continuing climate deterioration, the Anourosoricini species had become rare by the end of the Pliocene period and disappeared completely from this area 3 million years ago. However, the Carpathian Basin was not left without giant shrews: the place of *Kordosias* was taken by the *Beremendia fissidens*, a species not related to *Kordosias* but being very similar-living and similar-sized to them. This likewise "giant" shrew did not only survive the appearance of the Pleistocene ice ages but it had also spread in the cold. It adapted to shorter daytimes and low temperature by hoarding nutriment in its habitat. Its incisor turned into a fang with a channel, through which it could apportion a liquid into its victim (mainly snails) which was suitable not only to kill but also to conserve the victim. Because of its similar way of living to Anourosoricini species this also indicates the proximity of larger ponds or rivers. Less than a million years ago, not long after the age of

the Somssich-mountain site, which we have investigated, the *Beremendia* also became extinct and with this the giant shrews definitively disappeared from the Carpathian Basin. The investigations – apart from the aim to discover a part of the prehistory of the Carpathian Basin – contribute to the more accurate understanding of the current procedures of the living world. The succession of the shrew faunas not only helps to discover the climate changes (to better understand the changes of the present-day) but it also provides important information on how wildlife responds to past and present environmental changes.



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