Soricidae and Gliridae fauna of the late Early Pleistocene Somssich Hill 2 locality (South Hungary)

Dániel Botka, Levente Striczky
Eötvös Loránd University, Budapest, Hungary (botkadani@gmail.com, striczky.levente@gmail.com)

The Somssich Hill 2 site (Villány Mountains) is situated near the village of Villány. One of the most significant late Early Pleistocene vertebrate fauna of Hungary was turned up from here. The age of the assemblage is approximately 900 ka. The locality was mentioned first by Tivadar Kormos (Kormos 1937) and later by Miklós Kretzoi (Kretzoi 1956) but the most important excavations were made by Dénes Jánossy and György Topál between 1975 and 1984. During the excavations 50 layers (ca. 20-30 cm thickness per layer) were sampled from a ca. 9.5 metres deep, strongly calcified infilling of a karstic fissure. The infilling was loess-like in the upper part of the sequence but became more red and clayey from layer 28. The study of this material is in progress presently at the Department of Palaeontology and Geology of the Hungarian Natural History Museum under the leadership of Piroska Pazonyi. On the basis of the preliminary faunal list of Jánossy (1990) there are several small and large mammal groups present in the fauna.

According to our data, the members of the group Soricidae are represented by 7 species of 3 genera (*Beremendia fissidens* (Petényi), *B.* cf. *minor* Rzebik-Kowalska, *Crocidura kornfeldi* Kormos, *C. obtusa* Kretzoi, *Sorex margaritodon* Kormos, *S. minutus* Linnaeus and *S. runtonensis* Hinton), whereas out of the Gliridae 4 species of 3 genera are present at the locality (*Dryomimus eliomyoides* Kretzoi, *Glis sackdillingensis* Heller, *G.* cf. *minor* Kowaski and *Muscardinus* cf. *dacicus* Kormos). The aim of the present study was the palaeoecological investigation of the locality on the basis of the abundance of the above mentioned small mammal groups in the sequence. The material was predominantly unprocessed, hence first of all the shrew and the dormouse remains were separated from the material. The minimum numbers of individuals (MNI) were calculated for every studied species in each layer, hereby it became possible to follow up the fluctuation of the amount of the shrew and dormouse remains within the sequence.

Shrews provide very important palaeoecological information, since the dominance of the genus *Sorex* indicates colder climate and forested vegetation, contrarily, the members of the genus *Crocidura* are indicators of a warmer climate and more open vegetation. Each of the latter genera turned out from all layers with a high number of individuals. On the basis of the *Sorex*/*Crocidura* rate at least 5 different types of vegetation were separable at the locality. The lowermost part of the sequence are dominated by *Sorex* shrews, whereas the number of *Crocidura* shrews increases progressively towards the top of the sequence. From layer 35 the *Sorex* species become dominant again, and then a second *Crocidura*-rich phase comes between layer 18 and 12. The uppermost layers show the dominance of the genus *Sorex*.

Large-sized *Beremendia* shrews are also abundant at the locality, exceptionally in layers 32-27 and 15-12. The MNI peaks are in layers 28-27 and layer 13. In the uppermost layers relatively few specimens were found but layer 5 shows the third and simultaneously the highest record of *Beremendia*.

Although only one extant shrew species is present in the material, the environmental claim of the other species was deducted from the genetically and phenotypically related recent forms. The genus *Beremendia* belongs to an extinct tribe of Soricidae, which has been described from localities with various ecological features. This shrew plausibly was an opportunistic, omnivorous element in the European fauna during the Pliocene and the Pleistocene. The peaks in their minimum and maximum number of individuals correlate with the presence of other hygrophilous groups at the locality (hygrophilous snails and frogs, as well as *Desmana thermalis* Kormos). This suggests that the *Beremendia* could be a hygrophilous form too. Based on the distribution of the hygrophilous groups in the sequence, an open water surface should have been present near the locality in certain periods.

The MNI of dormice has three peaks within the sequence. The first, smaller peak (layers 31-28) is generated by the co-abundance of *Glis sackdillingensis* and *Muscardinus* cf. *dacicus*. The second maximum, which is the highest (layers 15-11), is caused principally by the enrichment of *G. sackdillingensis* but the other two dormouse species also appear here. The third peak (layers 5-4) is very similar to the latter. Beside the appearance of *M.* cf. *dacicus* and *D. eliomyoides*, *G. sackdillingensis* is the most frequent here too.

The following paleoecological conclusions were based on the ecological needs of the recent dormouse species, the edible dormouse (*Glis glis* Linnaeus) and the hazel dormouse (*Muscardinus avellanarius* Linnaeus). The *G. glis* prefers principally oak forests with well-developed underbrush, as well as mixed deciduous or riverside forests but old spruce forests too. The hazel dormouse is less specialized and it supremely prefers the bushy parts of the deciduous forests but settles in coniferous woods too, where *Rubus*, *Prunus* and *Corylus* are also present in the underbrush. Moreover, the species has been described from forest steppes and also from *Salix*-dominated shrubby wet areas. The increase of the number of dormice in the sequence overlaps with the rise of the MNI in the case of wood mice (*Apodemus* sp.), *Beremendia* and frogs. This conclusion is in a good agreement with the above described shrew fauna, which suggested, that at least three periods existed, when closed shrubby or forested vegetation was characteristic in the surrounding area of the locality.

Jánossy, D. (1990): Int Symp Evol Phyl Biostr Arvicolids, 223-230.
Kormos, T. (1937): Math U Naturwiss Anz Ung Akad Wiss, 56: 1063-1100.
Kretzoi, M. (1956): Geol Hung, Ser Palaeont, 27: 264.

This project was supported by the OTKA K104506 grant.