



## **Middle Pleistocene tuff horizons in the loess profiles of south-eastern Transdanubia, Hungary**

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The older rocks of SE Transdanubia are occasionally covered by loess deposits of considerable thickness, classified into the Paks Loess Formation. In the referred area the youngermost loesses are generally found on the surface. However, the older representatives of this “Young loess sequence” are also exposed at several sites („Mende-Basaharc Sequence”).

The major aim of our research was to clarify the formation of the volcanic tuff horizon, known as the “Bag Tephra” formerly identified in the loess profile of Dunaszekcső, and traceable at other sites in the vicinity of Mórágý as well. Furthermore, an attempt was made to punctuate the stratigraphic position and age of this horizon, very often used as a stratigraphic marker in Hungarian Quaternary research, with the help of Quaternary mollusk studies. First of all, the paleoecological analysis of the mollusk fauna enables the reconstruction of the climate, which must have prevailed during the deposition of the tuff layers. In addition one can also determine similarities and differences between the paleoecological characteristics of the individual horizons with the help of this method. In other words we can tell whether or not they formed among the same conditions and as such at about the same time.

Four profiles were sampled at depth for sedimentological, geochemical and paleoecological investigations. The „Bag Tephra Horizon” is intercalated in the loess sequence under the Basaharc Lower buried paleosol layer. According to the paleoecological analysis of the mollusk fauna retrieved from the layers, the formation of the loess sequences over- and underlying the tuff horizon must have happened among different environmental conditions. In case of the Kossuth street profile of Mórágý, the loess embedding the tuff must have formed during a cool, but not too cold period. The

fauna retrieved from the depths of 7.75-10.40 m, corresponding to the loess embedding the „Bag Tephra” referred to mild, even climatic conditions. The tuff horizons of the Dunaszekcső, Mórággy-2. and 3. profiles could have been correlated with a cold maximum of a stadial. The poor fauna, compared to the one in the Kossuth street profile indicates a dry, cold, and more extreme climate. This means that tuff deposition might have happened in two distinct periods. As no signs of cool maximum could have been observed in the Kossuth street profile, the loess layer and the tuff corresponding to this zone must have suffered erosion. The species *Neostyriaca corynodes* appearing in the loess over- and underlying the BA paleosol is of crucial importance regarding the ages of these deposits.