

New Middle Pleistocene records from the North-East foothills of Carpathian Mountains

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Two kinds of paleogeographic records from the Middle Pleistocene were recently first discovered in the Bukovinian foothills of the Carpathian Mountains, not far downstream from the confluence of the Prut and Cheremosh Rivers.

The area of investigation is associated with the lower Brusnytsia River, the right tributary of the Prut River (fig. 1). Due to the active tectonic uplift, wide spread of dispersal Neogenic and Quaternary sediments, and comparatively wet climate, the whole area of the Prut and Siret rivers' interfluvium is strongly damaged by landslides. Therefore it is quite problematic to find undisturbed Quaternary river terrace sequences in the area. Generally, the territory is characterized by the lack of Quaternary records at all. Only few Late Paleolithic sites without geological sequence were known few kilometers downstream the Prut R. Moreover it was important to look for the evidence of the Middle Pleistocene there.

Table 1 Selection of Zeleniv

Depth, m	Sediments	Age
0.0 – 5.75	Grayish-yellow silt pack, platy partied, with ferritization along bedding surface, and with spots of gleying along plants' roots. Its upper part (1.0-1.5 m) modified by modern soil.	dn
5.75– 6.65	Fine, silty, yellow polymictic, obliquely layered sand.	dn
6.65 –8.0	Pack of sediments, containing interbedding of silt, sand, and gley interbeds, strongly affected by cryoturbations.	dn
8.0 – 8.7	Thin laminated interbedding of silt and gley-soil (from 1-3 mm up to 5 cm) layers, microfolded.	zv
8.7 – 9.0	Clayey paleosol with the similar laminated and microfolded structure, and with carboniferous and ferriferous layers at the foot.	zv
9.0 – 9.5	The light-yellow loess, sometimes with layers of purple. The last 10 cm are grayish, probably gleyed.	tl

Some paleontological evidence of the Middle and Late Pleistocene bone-bearing deposits presence in the area we found in three local museums, in Zeleniv and Brusnytsia villages. There were remains of Proboscidea, belonging to few individuals of the *Mammuthus* line, represented mainly with teeth and not numerous limb bones. The determination of *Mammuthus* species was realised with the method elaborated by Foronova and Zudin (1986) and developed in the next publications (Foronova and Zudin, 1999, 2001; Foronova, 2001a,b, 2003, 2007). The method is based on values of enamel thickness, plate frequency and plate length of molars (M3). Three specimens (ZL-02, BR-01, BR-04) were determined to *Mammuthus trogonterii* and *M. cf. trogonterii chosaricus* (probably late subspecies of *M. trogonterii*), which refers to the early and middle parts of the Middle Pleistocene. Two

specimens (ZL-03, BR-02) belonged to the early form of *M. primigenius*, referred usually to the first part of Late Pleistocene, but probably appear at the end of the Middle Pleistocene. Two specimens more were determined as *M. primigenius* cf. *jatzkovi*, referred by Foronova (2001) to the middle part of Late Pleistocene, and only one tooth belonged to *M. primigenius primigenius*, living at the end of Late Pleistocene. Teeth and bones were partly collected by local people from the river bed of the Brusnytsia R., and partly were excavated from the loess outcrop in Zeleniv Village, at the early 1990th.

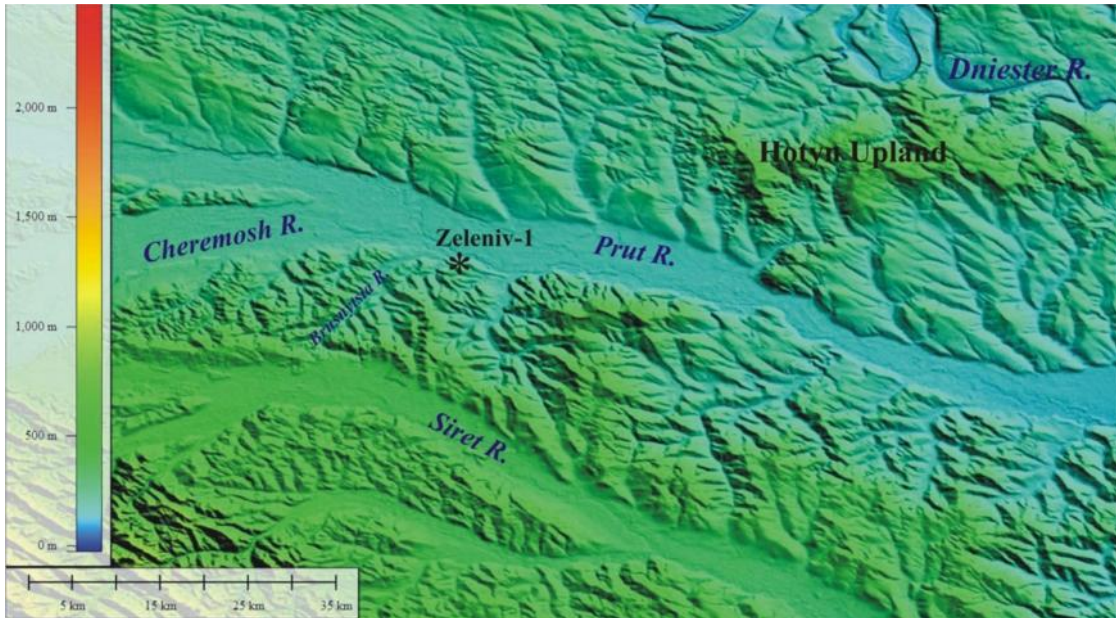


Fig. 1 Zeleniv-1 site location.



Fig. 2 Specimen BR-01, *Mammuthus* cf. *trogonterii chosaricus* from Zeleniv vicinities.

We studied preliminarily this 10 m thick loess section (table 1). Its top is 30 m, and its basis is near 20 m above the Prut R. We suppose it represents the sequence of the VIth terrace of the

Lybny-Tiligul stage (Veklych, 1982) (correlates with Cromerian IV – Elster 2 (Lindner et al., 2004)).

The alluvial layer is suggested 2 m below but wasn't achieved yet. The geological age (geological stages after Veklych (1982), specified by Gerasimenko (2004)) of sediment units was estimated preliminary, on the base of paleopedological observations and the terrace position. It should be confirmed by the next complex study. Also, the search of the bone-bearing layers should be continued.

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