

The new Upper Palaeolithic mammoth site at Halich (Ukraine)

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Abstract. The Halich 1 site, discovered in 1988, was first excavated in the year 2000. The site has yielded 151 mammoth bones and 105 flint artefacts. The cultural materials date between 24 ky and 14 ky, and may be connected with Epigravettian culture. Halich was probably a mammoth-butcherer locus or a kill-butcherer site.

Keywords: Upper Palaeolithic, woolly mammoth (*Mammuthus primigenius*), Halich, Ukraine.

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The recently discovered Upper Palaeolithic mammoth site of Halich (=Halič in SYTNIK et al. 1999) (NW Ukraine; 49°7' N, 24°43' E) was discovered by M. BANDRYVSKI in 1988. In 1997 SYTNIK (SYTNIK et al. 1999) began study of the site. Halich 1 lies on the Halich Hill, on a high terrace of the Dniester River's right bank. Archaeological and paleontological field studies were started in the year 2000. Three trenches were excavated, covering 65 square meters. Directly below a recent anthropogenically altered soil, Upper Pleistocene loess mixed with Holocene deposits (the upper loess) were encountered. Flint artefacts were found in this layer, derived probably from a now destroyed part of the site. Below this layer was another loess containing a 10-20 cm thick Upper Palaeolithic cultural deposit (Fig. 1). This loess, a rather homogeneous silty-sandy sediment containing small fragments of charcoal, flint artefacts, and mammoth bones, is correlated with the Rovno interphase within the Valdaian/Vistulian loess. Below this are other silty-sandy deposits and an interstitial soil of the Dubno type (BOGUTSKIY et al. 2000).

The site has yielded 151 remains of woolly mammoth, *Mammuthus primigenius* (BLUMENBACH, 1799) (Fig. 2). The bone assemblage includes 38 rib fragments and 19 vertebral fragments. Notable is the presence of six nearly complete cervical vertebrae and two fragments of sacrum. Long bones at the site included two fragments of femur, two radius bones, three unfused tibia

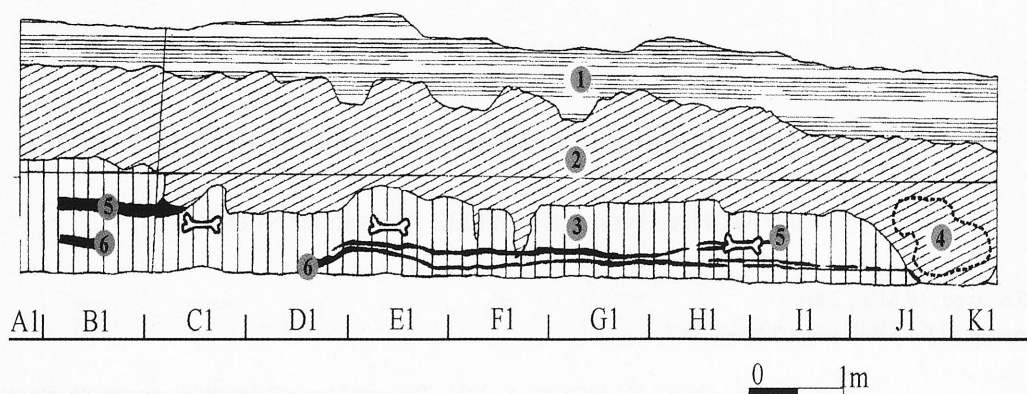


Fig. 1. Halich 1. South-western profile of squares A1-K1. 1 – gray loess with prismatic structure (weathered), 2 – homogeneous strongly cracked loess (the upper loess), 3 – homogenous light-pale-gray loess with organic substance intercalations, 4 – layer of upper loess strongly mixed with layers of organic matter intercalations, 5 – cultural layer with fine

epiphyses, and four fragments of innominate. Fourteen small bones were found in the cultural horizon, including two carpus bones, one calcaneus, six metapodials, four phalanges, and one patella.

Eighteen tooth fragments were present, but they were mainly isolated lamellae of cheek teeth. However, one mandible was found with two M2 in place (Fig. 3), and the age of this animal can be estimated at 12–14 years, on the basis of the tooth wear-pattern. The preservation of this mandible, like that of the other bones at the site, was not good.

A few bone-clusters were discovered, such as several associated cervical vertebrae all of similar size, indicating they may come from one individual, and an innominate fragment associated with a sacrum. However, no bones were in anatomical order (Fig. 4).

Green-bone breakage of some bones suggests that marrow extraction was done by people. A clear example of this sort of modification is seen with femur number 206 (Fig. 5). All bone-surfaces from the site show very intensive root etching, making it impossible to carry out more detailed taphonomic study of the mammoth remains.

Four tibia and two ischium bones belonging to two different individuals were found at the site, indicating a minimum of two mammoths present. It has been shown with living elephants and mammoths that different limb bone epiphyses fuse in a predictable order and rate through life (ROTH 1984; HAYNES 1991; LISTER 1999). In the woolly mammoth skeleton, the tibia epiphyses fuse at about 26 years (LISTER 1999). The Halich site's unfused tibia epiphyses indicate that both mammoth individuals were younger than 26 years old; on the basis of the mandibular tooth-wear, it appears that at least one mammoth was about 12 years old.

Five concentrations of charcoals were encountered in the cultural level. Flint artefacts were found in these concentrations, including one large cluster of 27 flint artefacts in concentration number 1. A total of 105 flint specimens were discovered in the site, including nine cores, 17 blades, 26 flakes, 12 fragments, three chips, six burins, three scrapers, one perforator, and two side scrapers. One hammerstone also was found. The flint had been transported to the site as unworked nodules, probably originating in the Dniester valley. Cores were reduced at the site, and the flint assemblage implies that mammoth meat and bones were processed on-site.

Unfortunately no temporally or culturally diagnostic tools or projectile points were found in the assemblage, so it is difficult to identify the culture represented by the assemblage. However, the

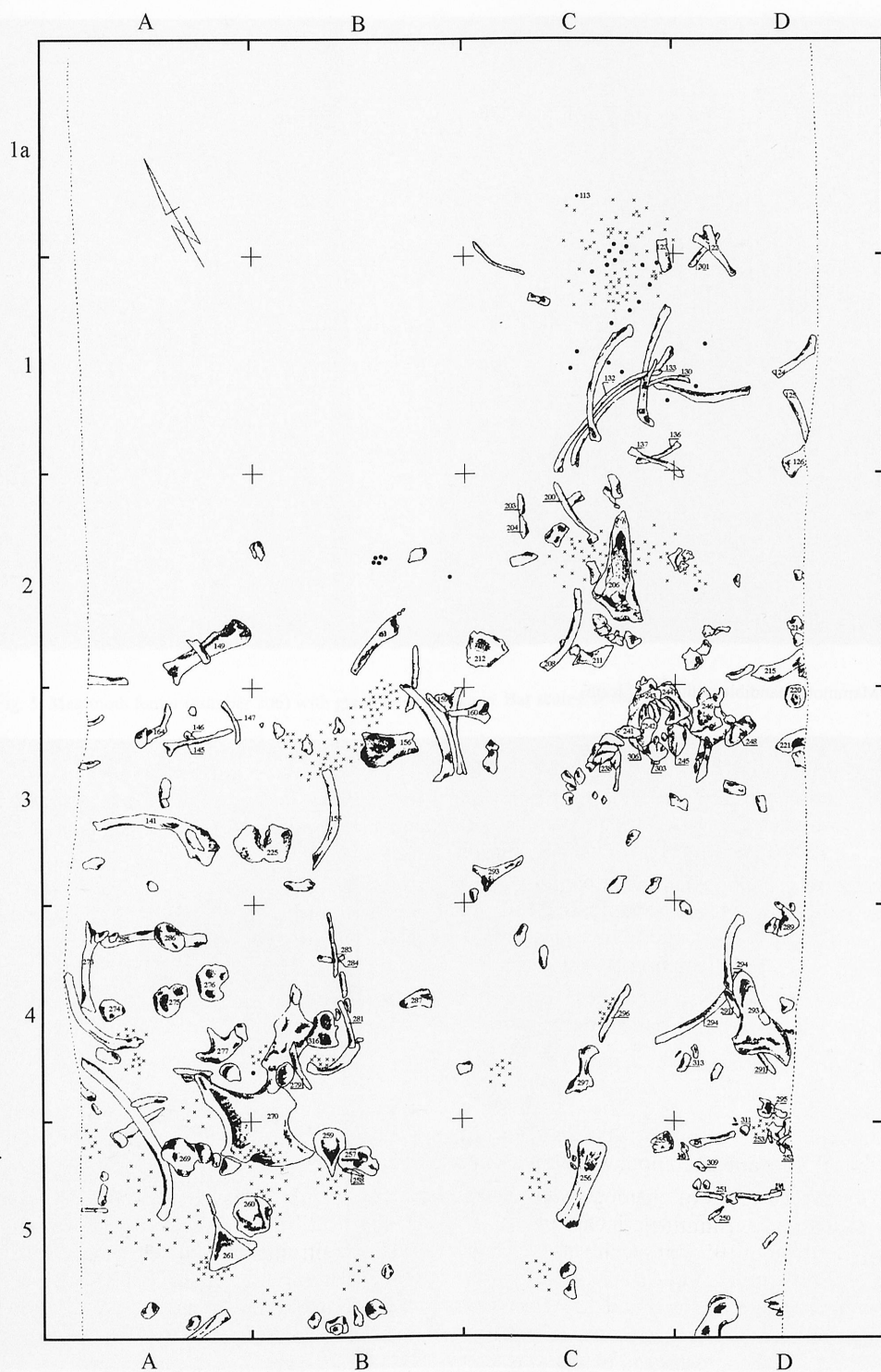


Fig. 2. Horizontal distribution of mammoth bones and artefacts (cross – charcoals; dots – flint artefacts)

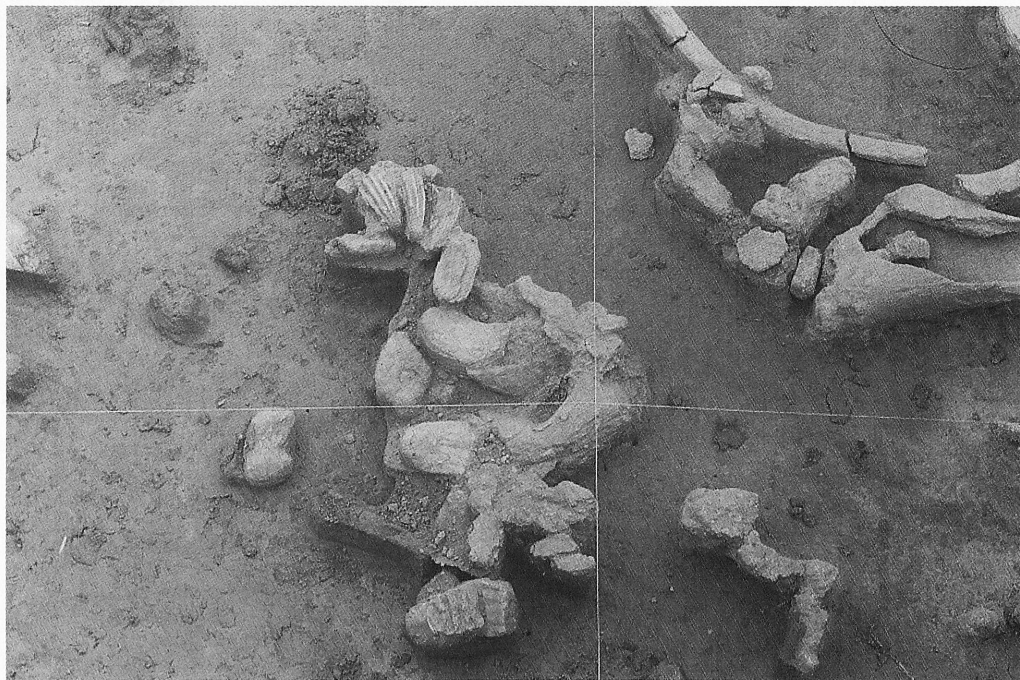


Fig. 3 Mammoth mandible with rest of teeth.

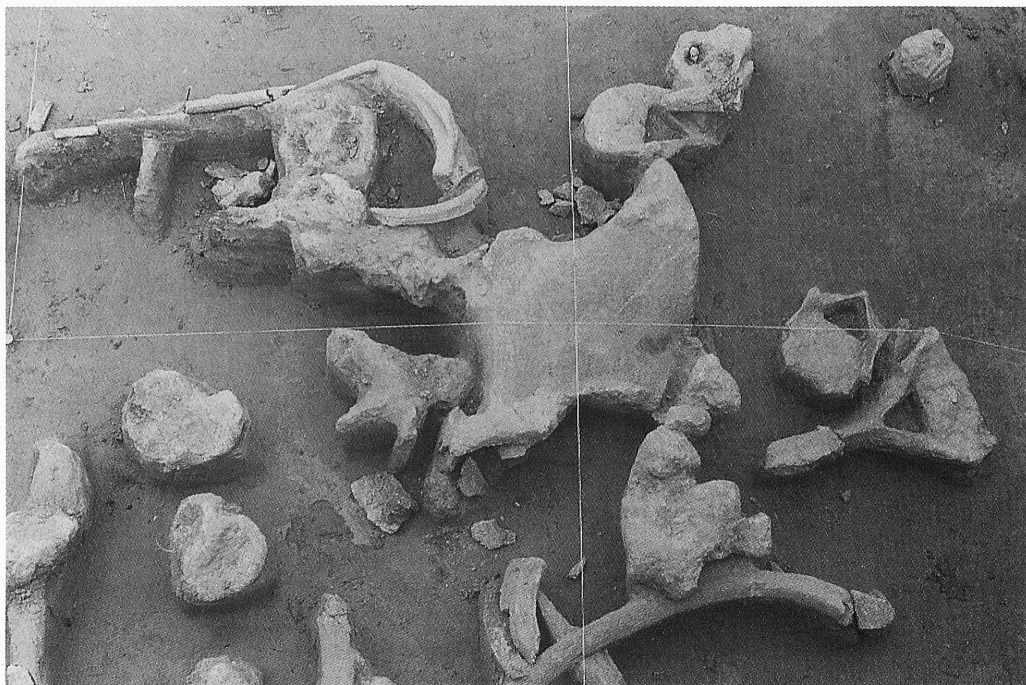


Fig. 4. Mammoth bones cluster with few cervical vertebrae, ribs and fragment of innominate.



Fig. 5. Mammoth femur (number 206) with green bone breakage. Bar scaled in cm.

geological data show that the artefacts lie in the upper part of the younger Vistulian loess, which has been dated 24-14 ky. The Epigravettian culture developed during the first millennia of this period in the valley of the Dniester River (DJINDJIAN et al. 1999).

The presence of a large number of mammoth bones such as limb elements, ribs, vertebrae, mandible, and innominate, plus small bones such as phalanges, metapodials, and unfused tibia epiphysis, suggest that the Halich 1 site was a mammoth death-place. The green bone breakage, the presence of hearth remains, and the large number of flint artefacts indicate that the site was a place where Upper Palaeolithic people killed mammoths and butchered them, or alternatively it was a place where people processed the carcasses after killing the mammoths very nearby.

Excavations will continue at the site next year, and we will seek support for these hypotheses.

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REFERENCES

- BOGUTSKIY A., ŁANCZOT M., RACINOWSKI R. 2000. Conditions and course of sedimentation of the Middle and Upper Pleistocene loesses in the Halich profile (NW Ukraine) *Studia Quaternaria*, **17**: 3-17.
- HAYNES G. 1991. Mammoths, Mastodonts & Elephants: Biology, Behavior, and the Fossil Record. Cambridge University Press, Cambridge.
- DJINDJIAN F., KOSLOWSKI J., OTTE M. 1999. La paleolithique superieur en Europe. Paris.
- LISTER A. M. 1999. Epiphyseal fusion and postcranial age determination in the woolly mammoth *Mammuthus primigenius*. [In:] G. HAYNES, J. KLIMOWICZ and J. W. F. REUMER (Eds) – Mammoths and the mammoth fauna: studies of an extinct ecosystem. *Deinsea*, **6**: 79-87.

- ROTH V. L. 1999. How elephants grow: heterochrony and the calibration of developmental stages in some living species. *Journal of Vertebrate Paleontology*, **4**: 126-145.
- SYTNIK A., BOGUICKI A., ŁANCZONT M., MADEYSKA T. 1999. Stanowisko górnopaleolityczne Halicz 1 [In Polish with English summary]. *Materiały i Sprawozdania Rzeszowskiego Ośrodka Archeologicznego*, **20**: 15-21.