
First flotation results from a new circular mammoth bone structure at Kostenki 11, Russian Federation

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Abstract

Circular mammoth bone features associated with late Upper Palaeolithic artefact assemblages are found widely across eastern Europe after c.22kya. These features are characterised by a concentrated ring of mammoth bones several metres in diameter, and almost invariably surrounded by a series of large pits interpreted variously as evidence for food storage, bone fuel storage, rubbish disposal, or simply quarries for loess used in construction of the dwellings. The circular features themselves are widely considered to be the remains of dwellings, offering shelter during long full-glacial winter seasons or possibly year round.

One of the best-known sites to have mammoth bone features is Kostenki 11, located on the Don River near Voronezh, on the eastern margin of the Central Russian Upland. Two such structures were discovered there during excavations of the 1950s and 1960s, the first of which was preserved *in situ* in the State Archaeological Museum-Preserve at Kostenki. In 2013, A.E. Dudin recommenced survey work at the site and in 2014, a new mammoth bone feature was discovered, located near the museum building. Three further excavation seasons followed in 2015–2017, exposing a well-preserved circular mammoth-bone structure partially surrounded by at least three large pits.

We report here on the first results of a program of flotation carried out during the 2015 excavation season: the first time such a method has been systematically applied to both the interior occupation surface and the pits surrounding the same circular mammoth bone feature. The aims of this program were to:

- Recover ancient plant or other organic remains, including evidence of plant foods, for study in an on-going Leverhulme-funded project considering Palaeolithic food storage
- Investigate the fuel choices made at the site regarding the burning of wood and/or bone
- Recover evidence that might be useful in identifying activity areas within the site, including lithic microdebitage and other cultural remains, so as to understand better site function.

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Accordingly, nine sampling locations were chosen, including six sondages within the mammoth bone circle and three bulk sampling locations from inside the pits surrounding the structure (totalling 125 litres of floated sediments). The resulting charcoal and heavy residue assemblages yield new data that we use in this paper to characterise the activities that took place at the site.

Keywords: Mammoth bone circles, dwellings, flotation, charcoal