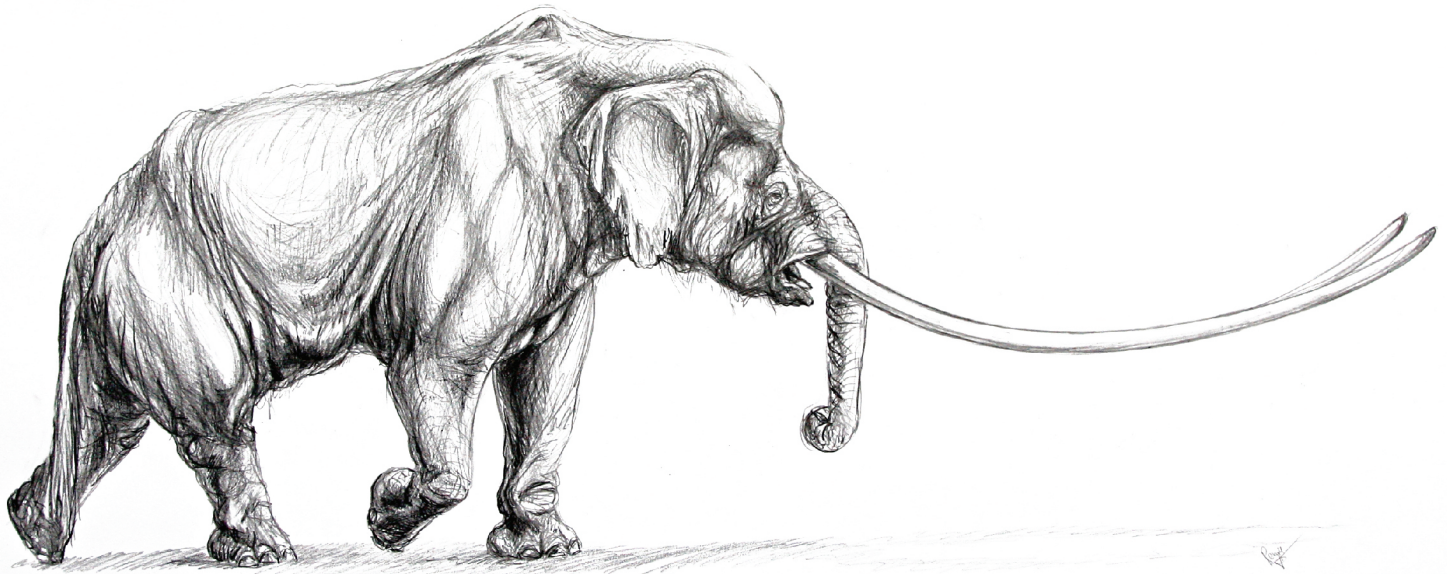




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ABSTRACT BOOK

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A MIS 3 kill-butchery mammoth site on Buor-Khaya Peninsula, Eastern Laptev Sea, Russian Arctic

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An assemblage of late Pleistocene faunal remains was collected during the Eastern Laptev Sea - Buor Khaya Peninsula expedition (Strauss et al., 2011) near the Orto-Stan River, in Buor-Khaya Peninsula (Fig. 1, A). The bones were sampled from a concentration located next to the edge of

a thermokast lake (N 71° 36,120' E 132° 15,597'; Fig. 1, B, C).

Direct dates on two mammoth bones with human impact and a horse bone (Fig. 1, D, E) estimate the age of the site at 27,000 – 27,600 BP, which corresponds to the end of the

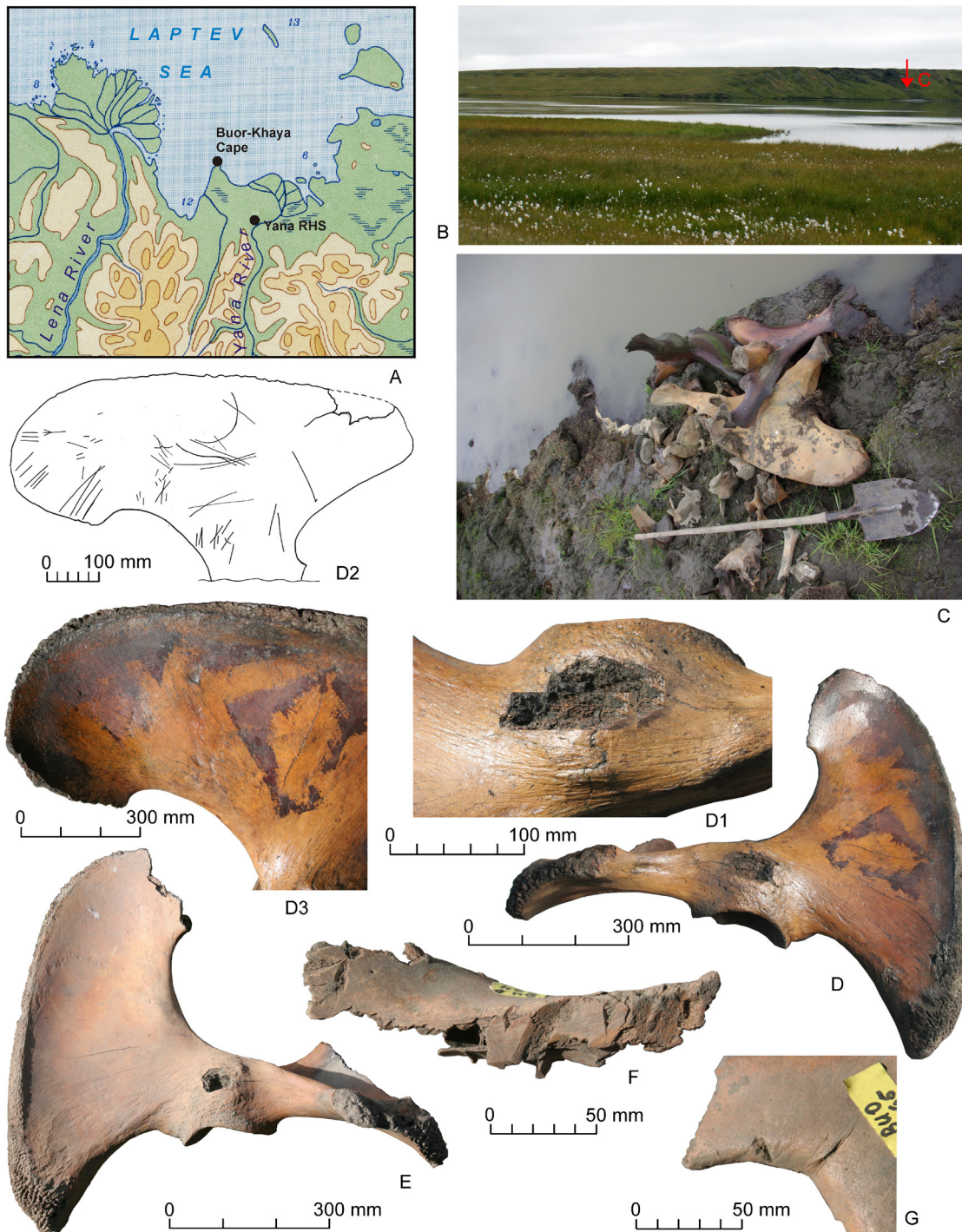


Fig. 1. The Buor-Khaya/Orto-Stan mammoth kill-butchery site. A, site location. B, site area, viewed from the South. C, location of wash outs made by mammoth ivory miners. D, mammoth pelvic bone (right) with human impact (blind hole and engravings on caudal surface). D1, close up for the blind hole. D2, engravings sketch by Alla Mashezerskaya. D3, caudal surface with engravings. E, mammoth pelvic bone (left) with human impact (blind hole) near the joint. F, mammoth skull fragment with cut mark. G, mammoth skull fragment with cut mark.

Table 1. AMS ^{14}C dates for Buor-Khaya/Orto-Stan mammoth kill-butchery site

Sample	Skeleton element	Species	^{14}C age, uncalibrated years before present [yrs BP]
Beta-362946	Pelvic bone with a hole, right	mammoth	27,080 \pm 140 yrs BP
Beta-362947	Pelvic bone with a hole, left	mammoth	27,430 \pm 150 yrs BP
Beta-362948	Mt III, right	Pleistocene horse	28,790 \pm 160 yrs BP

Marine Isotope Stage (MIS) 3 (Table 1), or slightly older if the horse bone belongs to the same depositional horizon. The rate of accumulation of mammoth bones remains uncertain. The accumulation event could have been relatively short (taking approx. 60 years) or longer, taking up to 640 years, as seen from the mammoth bone ages (ignoring the horse bone date).

Mammoth remains represent two thirds of the collected material (Table 2), and include at least five mammoth individuals, both adults and juveniles. Two pelvic bones (Fig. 1, D, E) have identical blind holes near the coxofemoral articulation (Fig. 1, D1) on the bones' caudal sides. Evidently, bone cracks, resulting from the impact of some heavy chopping tool, loosened the joint and facilitated removing the head of the femur from the hip socket.

Multiple lines (1.2-2 mm wide and ~0.7 mm deep) engraved by sharp lithic tools are visible on the caudal surface of a right innominate (Fig. 1, D, D2, D3, G). In addition to the butchering marks, the Buor-Khaya/Orto-Stan mammoth site provides evidence that humans killed these animals. Finds

Table 2. Bone assemblage from Orto-Stan River (based on Strauss et al., 2011).

Taxon	NISP
Mammoth (<i>M. primigenius</i>)	67
Large herbivore animal	3
Pleistocene horse (<i>Equus</i> sp.)	2
Reindeer (<i>R. tarandus</i>)	2
Unidentifiable fragments (Mammalia)	7
Total	94

from Yana RHS site (Nikolskiy and Pitulko, 2013) suggest that people applied a «spear-fall» hunting strategy, similar to that practiced by modern African hunter-gatherers. For example, Kulik (1971) describes a specific coup de grâce method practiced by Pygmies: a spear thrust into the elephant's trunk cuts important arteries and causes mortal bleeding. The position of the cut-marks on the edge of the nasal opening of the mammoth skull fragments at the Buor-Khaya/Orto-Stan, i.e. near the trunk, (Fig. 1, F, G), suggests that they were caused by the same action. This evidence is sufficient to accept the Buor-Khaya/Orto-Stan site as a kill-butchery mammoth site, and currently the northernmost Paleolithic site in the world, which sheds light on human dispersal through the Arctic at the end of MIS 3.

References

- Kulik, S.F., 1971. Safari. Travels in Eastern, Central, and Southern Africa. Moscow, Mysl.
- Nikolskiy, P., Pitulko, V., 2013. Evidence from the Yana Palaeolithic site, Arctic Siberia, yields clues to the riddle of mammoth hunting. *Journal of Archaeological Science* 40, 4189-4197.
- Strauss, J., Schirmermeister, L., Yakshina, I., 2011. Appendix 3. List of collected mammal bones. *Berichte zur Polar- und Meeresforschung* 629, 91-94 (<http://hdl.handle.net/10013/epic.37743>).

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