

Man and Mammoth in Pleistocene Siberia

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SUMMARY: Mammoth bones have been identified from many Paleolithic sites in Siberia, from the Mousterian to the Late Upper Paleolithic. The paper summarizes the available data from 8 Middle and 75 Upper Paleolithic faunal assemblages. Different types of the man-mammoth associations could be deduced. These include butchering sites used for the processing of hunted animals or frozen carcasses (Tomskaia, Shikaevka II), mammoth death sites exploited by prehistoric groups searching for bones and tusks (Volch'ia Griva, Berelekh, Shestakovo), and occasional bones, which could be procured by prehistoric man elsewhere. Use of mammoth bones and ivory for the manufacture of tools and ornaments is discussed. According to relevant evidence from the final Pleistocene occurrences, the mammoth extinction took place in different portions of Siberia in different times.

1. INTRODUCTION

The vast territory of Northern Asia has attracted the attention of the students of Pleistocene extinctions for a long time. The man-mammoth interactions in this area are of prime importance for the study of the Pleistocene adaptations to periglacial environments (Vereshchagin & Baryshnikov 1984). Research into the Pleistocene in Siberia has always been hampered by difficulties in obtaining information and linguistic barriers between the scholars of different countries. A new attempt at synthesizing such data is long overdue.

2. CHRONOLOGICAL FRAMEWORK

The earliest traces of humans in Northern Asia can be correlated with the Middle Pleistocene, ca. 300,000-250,000 BP (Derevianko 1997). According to the stratigraphic schemes admitted in Russia, the advent of the Middle Pleistocene was marked by the Tobol'sk interglacial followed by the maximal (Samarovo) glaciation. This maximal glaciation was followed by the Shirta interglacial and then, the Taz glaciation. Several successive faunal complexes identified in the Middle Pleistocene evidenced the appearance of

woolly mammoth (*Mammuthus primigenius*) in Siberia.

The advent of the Upper Pleistocene is correlated with the beginning of Kazantseva (Eem) interglacial followed by the cold spells of the Zyrianka, correlated with the Weichselian Glacial in its broadest sense. It includes three periods. The earliest one is the Early or Lower Zyrianka, which is also called Ermakovo or Murukta glacial, the Karginy interglacial, and the Late Zyrianka, or the Sartan, glacial. Due to the scarcity of occurrences it seems hardly possible to characterize fauna of Kazantseva, while from Zyrianka onwards the Upper Paleolithic (or Mammoth) Faunal Complex was represented by typical species such as mammoth, woolly rhino, horse, musk-ox, bison, reindeer, saiga antelope, Polar fox, lemming, etc. In Trans-Baikal this assemblage was enriched by Central Asian species as spiral horn antelope and yak (Vangengeim 1977).

Woolly mammoths (*Mammuthus primigenius*) were widely distributed in Siberia during the Upper Pleistocene, over an enormous space stretching from the Arctic Ocean to Mongolia (Orlova *et al.* 2000). Numerous discoveries of frozen mammoth remains in Northern Siberia have given us a opportunity to characterize in detail the appearance and nutrition of these giants of the Pleistocene world (Ukrainitseva *et*

al. 1996). These animals consumed mostly grasses, bushes and bark in summertime; in wintertime, they fed on dry grasses and sprouts of bushes, and coniferous trees. Mammoths inhabited mostly river valley bottoms and floodplains, migrating along rivers. Deathsites of mammoths were associated with floods; also, they accidentally died while crossing rivers and lakes by ice. However, during the second half of the Sartan, they retreated to the north. The last mammoths seem to have existed in the Polar regions (Yakutia, the Gydansky and Taimyr peninsulas) as late as 11,000 to 9600 BP. A discovery of a Holocene degenerated population of dwarf mammoth at Wrangel Island, dated *ca.* 4000 BP became a true sensation (Vartanyan *et al.* 1993).

3. MAN-MAMMOTH INTERACTIONS: SPATIAL DISTRIBUTION AND CHRONOLOGY

The paper summarizes the available data from 8 Middle and 75 Upper Paleolithic faunal assemblages associated with the mammoth remains arranged in chronological and geographical order. Only clearly stratified assemblages are included into the analysis. Unfortunately in the majority of cases we have only qualitative data at our disposal and we know next to nothing about the quantitative distributions of the mammoth remains found, age-sex ratios, etc.

The oldest man-mammoth association is presumably referred to the Middle Pleistocene as evidenced by the fauna from Ust'Izhul' in the Yenisei basin (Ovodov & Tomilova 1998). Several cave and open-air Mousterian sites located in the Altai and the Yenisei yielded mammoth remains. Among these the lower layers of the Denisova Cave and Ust'Karakol I are referred to Kazantseva, but most of the absolute dates associated with Mousterian levels are of Karginsky age, lying between 45,000 and 30,000 BP.

The Upper Paleolithic is divided into three phases – Early, Middle and Late. The earliest phase of the Upper Paleolithic has been dated at between *ca.* 34,000 to 27,000-26,000 BP. During this phase, mammoth bones are report-

ed from all areas of concentrations of the Paleolithic localities so far known – from the Altai Mountains to the Russian Far East. The Middle phase covers the time span between 27,000-24,000 to 18,000-17,000 BP. The sites with man-mammoth associations have been discovered in Western Siberia, Yenisei, Angara and Upper Lena valleys, and from Trans-Baikal. The Late Upper Paleolithic lies from *ca.* 16,000 to 10,500 BP. During this phase, mammoth remains are mostly found in Western Siberia, Middle Yenisei valley near Krasnoyarsk, Lower Angara, and northeastern Siberia. For the same time period, the sites located in the Altai, Upper Yenisei, Upper Angara and Trans-Baikal have yielded only scarce findings, mostly represented by ivory and bone fragments and artifacts.

4. MAN-MAMMOTH INTERACTIONS: HUNTING, SCAVENGING, AND BONE COLLECTION

West Siberia has produced evidence on mammoth processing sites. The site of Tomskaia of Early Sartan age (*ca.* 19,000 to 17,000 BP) explored at the end of the 19th century, produced a carcass of mammoth lying on charcoal lens bed bearing traces of fire. Few pieces of lithics were associated with the carcass (Kashchenko 1901). The more recent site of Shikaevka II, also in Western Siberia has revealed two mammoth skeletons lying mostly in anatomic order with scanty artifacts (Petrin 1986). It is far from clear if we are dealing with dismembering of frozen carcasses or hunted animals.

Occasionally Paleolithic man used the concentrations of animal bodies for procurement of bones and ivory. The oldest occurrence of this kind seems to be Shestakovo at Western Siberia (Derevianko *et al.* 2000) dated from *ca.* 25,500 to 18,000 BP. Several cultural layers of the site evidenced successive human utilization of the deathsite located near the mineral salt sources. Among more recent sites Volch'ia Griva in the West Siberian Plain and Berelekh in Yakutia are to be mentioned. At the first site the bone-bearing layer is associated with lacustrine sediments dated to *ca.* 14,000 BP (Okladnikov *et*

al. 1971). The second case is Berelekh, which demonstrates the spread of Paleolithic man into the Polar region (Mochanov & Fedoseeva 1996). Berelekh is near the famous mammoth deathsite, which has produced the remains of more than 150 mammoths. These are thought to have died when falling to unfrozen patches of water in the midst of an icebound river. Later the carcasses were transported by river flow to the cut-off channel where they were deposited in till sediments. The remains of the habitation site were discovered about 100 m from the deathsite. Paleontologists argue that prehistoric hunters settled near the slightly older concentration of mammoth bones, which was dated from ca. 13,000 to 12,000 BP (Vereshchagin 1974). Bones of reindeer, horse, hare, goose and white grouse from the cultural layer appear to have 'hunting marks' while mammoth bones seem to have been procured from the deathsite.

5. IVORY AND BONE ARTIFACTS

Mammoth ivory and bones were extensively used by the Paleolithic inhabitants of Siberia for tool and personal ornaments manufacture (Abramova 1995).

There are two cases of mammoth depictions made by Paleolithic man. The middle component of Ust'Kova located in the Angara valley yielded a schematized animal figurine made of ivory. A mammoth engraving on an ivory blade from Mal'ta is to be mentioned. For more problematic items, there is an engraved ivory fragment with thin lines depicting the profile of a mammoth. It was accidentally found on the Berelekh river 50 km upstream from the site, thus it cannot be associated with the Paleolithic site of Berelekh lying in the downstream area. Vereshchagin (1974) argues that the engraving was made on a tusk broken beforehand by ice, i.e. the fossil piece was extracted from elsewhere.

Other art objects made of ivory and mammoth bones are also mostly associated with the Middle Upper Paleolithic. No other Siberian site is comparable to Mal'ta in richness and diversity of ivory objects. Among these are series of feminine and bird statuettes. Mal'ta is

also rich with sophisticated ivory and mammoth bone artifacts, including points, pins with heads, rods, buttons and needles with eyes or circular hollows, personal ornaments (ornamented plaques, beads, curved and perforated blades, bracelets, etc.). Ivory feminine statuettes and personal ornaments are also reported from Mal'ta's 'twin' site, Buret'. The site of Achinskaia produced a phallus-like ivory statuette, the so-called 'rod'.

6. CONCLUSIONS

The Siberian sites evidenced a long history of man-mammoth interactions from the Middle Paleolithic onwards. In spite of richness of habitat structures in the Siberian Paleolithic, there is practically no evidence on the use of proboscidean remains as a raw material for domestic structures. It is worthwhile to mention that we are lacking the unambiguous evidence for active mammoth hunting. What can be deduced, mostly, is the use of passive hunt with traps. But in the overwhelming majority of cases it seems that prehistoric man collected bones and tusks.

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