

Why 70% of ancient Ural settlement's habitants didn't live up to the age of 18

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Researching of a necropolis Kamenny Ambar-5. Credit: South Ural State University

Artifacts of the Bronze Age at the territory of the Southern Urals have been the object of active research for several decades by archaeologists from around the world. For the last decade, scientists of South Ural State University, together with international colleagues from the U.S. and Germany, have been researching a synchronous necropolis (Kamenny Ambar-5), located 280 km away from Chelyabinsk. Achievements of contemporary genetics allowed them to answer many questions of the earliest history.

Modern archaeology and mysteries of the Bronze Age

Research fellows and students of SUSU's Institute of Social Sciences and Humanities, supervised by Andrey Epimakhov, professor of the Department of Russian and Foreign History, have been carrying out excavations in the South of the Chelyabinsk region. Kamenny Ambar is a settlement of the Bronze Age located in the Kartalinsky District, on the left bank of the Karagayly-Ayat River. Four thousand years ago, it was inhabited by people

with a specific lifestyle, unique cultural traditions and worldview. The reinforced settlement and funerary complexes they created are of a special interest for archaeologists.

"Modern archaeology is a very dynamic discipline. Today, interdisciplinary research plays a big role. For example, aside from researching environment and living conditions of ancient people, we also research their social relations. Our goal is to extend the existing knowledge and discover new aspects of life of the ancient population. First of all, we study people and try to reconstitute the history of their lives; in this aspect, our job is similar to the work of ethnographers," says Andrey Epimakhov.

The international team, consisting of researchers from South Ural State University and the University of Pittsburgh are studying remnants discovered in the Kamenny Ambar-5 burial ground. Physical anthropologists carried out a thorough study with the goal of determining each individual's age and race, as well as whether they had any diseases or injuries.



Professor Andrey Epimakhov. Credit: South Ural State University

"One of the mysteries of this burial ground is the fact that there are no adult people older than 50, and about 70 percent of the buried are children of various ages. They had been buried with the full cycle of rituals, including funerary equipment and sacrifice of livestock, sheep. Adults were mainly buried with cows, horses and dogs."

The researchers collected a large amount of DNA material. Mapping of the genome determined the gender of the children. Geneticists verified archaeologists' theory that girls were buried with ornaments, and boys with labor tools. Research of remnants of the Kamenny Ambar residents showed that socialization and separate formation of gender stereotypes was beginning at the age of two or three.

"The remnants were also studied for the presence of any diseases, but no traces of epidemics or dangerous illnesses have been detected. Though such a small number of people who lived up to their biological maturity indicates that the environment was not favorable, and life of these people was short and lasted 50 years in average," says the SUSU scientist.

Military equipment was found on the excavation site: a spear and fragments of chariots. But a thorough study showed that these items were not used in combat. Scientists suggest that a fast life history was an adaptive regional response to a less hospitable and perhaps unstable environment. According to one theory, this was a group of migrants who came to the territory of the contemporary Southern Urals.

Where did they come from and what did they do?



SUSU students researching a necropolis Kamenny Ambar-5. Credit: South Ural State University

Migration during the Bronze Age was a quite difficult process. It was gradual, and the process involved representatives of various cultures. Today, scientists know that migration moved from west to east. But whereas the features of a series of the Eastern Europe's cultures are visibly traced genetically and by their cultural aspects, strangely enough, similarities were discovered with nations of Central Europe (the territory of contemporary Germany and Poland).

"Reconstructions of skulls was carried out, and now we can visually demonstrate the look of the population. The remnants were found in the Kamenny Ambar [burial ground](#). They were southern representatives of European ethnicity with a well-shaped facial skeleton and protruding nose," continues professor Epimakhov. "Compared to the local inhabitants, they were more subtle. This also proves that they were migrants: their ancestors were representatives of European ethnicity as well, but of different type."

The researchers also managed to check the hypothesis that inhabitants of the settlement were livestock breeders and agriculturists. The researchers collected macro-remnants of many plants. Analyses showed the absence of cultivated crops, which debunks the theory about farming.

"We were able to determine that they were picking

wild plants and partly practiced fishing and hunting. But these activities were supplementary; their lives were founded on breeding cows, sheep and horses. Therefore, with a high degree of certainty, we can say that they were sedentary livestock breeders," says Andrey Epimakhov.

Results of the research were summarized in an article titled "Life in the fast lane: Settled pastoralism in the Central Eurasian Steppe during the Middle Bronze Age", published in the *American Journal of Human Biology*.

More information: Margaret A. Judd et al. Life in the fast lane: Settled pastoralism in the Central Eurasian Steppe during the Middle Bronze Age, *American Journal of Human Biology* (2018). DOI: [10.1002/ajhb.23129](https://doi.org/10.1002/ajhb.23129)

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