

### ISOTOPIC AND ELEMENTAL ANALYSIS DATA FOR THE RECONSTRUCTION OF THE MOBILITY OF THE BRONZE AGE STEPPE SOCIETIES

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Study of the lifestyle of the most ancient of pastoralists from skeletal evidence is the important direction in anthropology. Isotopic and elemental studies allow reconstructing the landscape and climatic characteristics of human environment. Importantly, these analyzes allow the options to obtain individual characteristics describing the living space of human or animal specific past, and in certain cases - even during their lifetime. The stable isotope ratio  $^{13}C/^{12}C$  and  $^{15}N/^{14}N$  of bone tissue collagen of humans and animals is used to determine the main components of everyday diet.  $^{87}Sr/^{86}Sr$  (strontium) in biological objects reflects the local geological rocks and is used to identify indigenous and immigrant individuals. Values of the standard deviations for isotopic parameters for the twelve groups of buried mounds from the Northern Caucasus area were calculated. Minimum values were determined for a group of sedentary population of the Early Bronze Age burials of Velikent (0.23). Maximum values were obtained (1.3 - 1.4) for the Early Catacomb groups of burials (Peschany, Temrta). Thus, the statistical analysis suggests that during the arid periods the population could take over large areas. Obviously, in the more arid pastures biological productivity was low, and pastoralism provoked large-scale seasonal migrations. So isotopic indicators show regions of considerable stability in seasonal nomadic populations associated with the culture of the Early - Early Middle Bronze Age, as well as the significant impact of climate change on the expansion of pastureland. The study was supported by RFBR, grant # 13-06-00792.

**Key words:** *Bronze Age, South Russia steppes, mobile population, paleodiets, stable isotopes, strontium isotopes*

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### RUSSIAN FEDERATION POPULATION DECLINE

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In demographic processes whose principal characteristics are birthrate decrease and mortality growth, sharp shifts have been noted in the Russian Federation starting from the 1990's. Mortality grew from 10.4‰ to 15‰ in 1986–1994. The birthrate fell from 2 to 1.3 children in 1987–1993. The mortality reached to 1.807.400 people in 1992, with the birthrate falling to 1.587.600 people. The process of depopulation which was called "the Russian cross" began. Nearly 2 million people died annually in the country according to the official data of the Russian Federal State Statistics Service in 1993–2013. A special and a very serious problem is a middle-aged men mortality that is 7–8 times higher, than in the developed countries. The present study considers some social-economic and ecological processes, which promoted the growth of negative indicators in the population dynamics. We compared the mortality and decline of the population in different regions of Russia and showed that there is a correlation between alcohol mortality and decrease of population. A confessional factor is very important also. The mortality rate is far below the average for the country in those territories of Russia, where the population is predominantly Muslim. The demographic transition in Russia is characterized not only by a drop in fertility, as in the other developed countries, but also by increase in mortality. The mortality is a real indicator of the socio-economic and demographic situation for this or that region of Russia and it should be used by the authorities of different levels for the development of the area.

**Key words:** *population decline, life expectancy, dynamics of mortality, birth rate, adaptation, Russia*

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