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Some Considerations about Paleoecology of Central Asia and Migrations of Ancient Hominids During the Pleistocene Period

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Abstract---This article provides a brief overview of the paleoecology of Central Asia during the Quaternary (Pleistocene) period, the natural and climatic conditions of the region, as well as the migration of ancient hominids. Natural-climatic conditions in the Tertiary (Pleistocene) Central Asia is characterized by a dry, arid climate, and in some periods a humid (pluvial) climate, as a result of a comprehensive study of the Early Paleolithic monuments. In general, this article focuses on the Paleolithic of the Central Asian region in the Quaternary period and the development of this vast territory by our ancient ancestors, as well as some comments on the remains of ancient human bones found in the Selungur cave.

Keywords---Central Asia, early paleolithic, migration, paleoanthropology, Pleistocene

Introduction

With the end of the first Pleistocene and the beginning of the Middle Pleistocene, the region of Central Asia was characterized by a temperate climate and a very favorable geographical area in terms of natural and climatic conditions for the ancient people to live. In the early and middle stages of the Pleistocene, the natural conditions in the regions of Central Asia were completely different from today. The seasons depend on climate change, with the weather warm and dry in summer and cold and humid in winter. In the Quaternary (Pleistocene) period, the region's paleoecology, ie paleoclimate, paleofauna (fauna), and paleo flora (flora), differed from the current period. Human history has gone through 4 great ice ages (grunts, mindel, riss, and vyurm) spanning several thousand years, living in difficult and complex ecological conditions, and overcoming the long period that has existed to the present day ([Derevianko et al., 1994](#))

Materials and Methods

The first ice age began about 600,000 years ago, and its last phase ended 12,000-10,000 years ago. Each glacial and interglacial period spanned several tens of thousands of years, and the Eurasian continent varied across the region, meaning that Central Asia was one of the regions where the climate was much colder in some parts of the continent (where the ice age prevailed). Climate change (cooling) during the glacial and interglacial periods had a strong impact on the northern regions of the Eurasian continent, but the paleoclimate did not change dramatically in the Pamirs, Alay, and Tien Shan mountain and foothill areas. By the end of the Middle Middle Pleistocene, the northern latitudes of the Eurasian continent were covered with ice, the climate changed dramatically, and cold currents penetrated the middle reaches of the continent. were physically and mentally prepared for ([Rybin & Khatsenovich, 2020](#); [Abbasov & Sanchez, 2020](#)). During this period, the paleoclimate of the northern part of the Central Asian region naturally differed from the central, western, eastern, and southern regions, i.e. the climate of the northern regions of the region differed from other regions with a slight cold.

As noted above, by the end of the Early Paleolithic, the climate had changed completely not only in Central Asia but throughout Eurasia (while the southern regions had a relatively temperate climate). The northern regions (mountainous and foothill areas) are occupied by glaciers, and climate change has naturally affected wildlife ([Muttoni et al., 2010](#); [Archana et al., 2016](#)). Warm-blooded animals perish or partially migrate south. At the same

time on the Eurasian continent, some species of mammals and other species of animals, typical of the first and middle stages of the Quaternary period, become extinct and are replaced by new species adapted to the cold climate. Some species of plants are disappearing, ie the number of plants adapted to temperate climates (in the northern regions) has sharply decreased, and in some areas, the flora has been renewed.

During this period, the paleo flora in Central Asia also partially changed, in some parts of the region there were dry steppes and steppes, and in some areas, such as the Pamirs, Alay, and Tianshan mountains and foothills, different from other landscapes, thick coniferous and deciduous forests, as well as ancient river valleys. and shrubs and forests sprouted along the mountain slopes. The cooling of the climate did not affect all regions of Central Asia, especially in the Pamirs and Tien Shan mountains, where the climate was dry and warm. studied. Examples are Buriqazgan, Tanirkazgan, Qiziltov 1, Kuldara, Lakhuti 1, Kulbulak, Qizilolma, Toshsay, Jarsay, Selungur, Chashma, and other monuments (ALPYSBAEV, 1979; Ranov, 1988; Anisyutkin, 1995; Kasymov, 1990).

Migrations of ancient hominids

Today, Africa is considered by the scientific community to be the birthplace of man, as physical species of hominids such as Australopithecus, Homo habilis, Homo ergaster, Homo erectus have been found and studied in this continent since the first quarter of the twentieth century (Derevianko, 2009, 2015, 2017). Among these hominids, Homo habilis was the first to know how to make the simplest and crudest form of cocktail weapon out of stone. Archaeological excavations have shown that the simplest and roughest stone tools (choppers and choppers) made of sandstone were found in the southern and eastern regions of Africa. proved (Sayfullaev & Hashimov, 2018; Omonov, 2021). The earliest migrations began on this continent, and the assimilation of the Eurasian continent through the Middle East by the Homo erectus was estimated at 1.8-1.7 million years. This process lasted until the middle of the Early Paleolithic period (about 500-400 thousand years ago). According to paleoanthropological and stone artifacts found in ancient Stone Age sites on the continent, Homo erectus lived from a period of 1.8 million years ago to 400,000 years ago (Derevianko, 2017). The most famous fossils of Homo erectus bones include Sinanthropus in China, Pithecanthropus in Java, Atapuerca in Spain, Tutavel Man in France, Azix Cave in Azerbaijan, Petralona in Greece, and others. The regions of Central Asia are also favorable geographical areas for the formation, residence, and development of ancient people. The natural climatic conditions of this region are favorable, and various landscapes (forests, steppes, etc. in mountainous and foothill areas) areas are rich in flora and fauna (Omonov, 2021). Therefore, since the Pleistocene period, these territories have been occupied by our ancient ancestors. The regions of Central Asia are considered to be one of the main and important regions in large-scale migration, as the fossils of several physical species of ancient people have been found in these areas, which are rich in ancient Stone Age (Paleolithic) monuments. Examples include the Selungur man found in an early Paleolithic cave, as well as ancient human bone, remains found in the Middle Paleolithic cave Teshiktash and Obirahmat caves. Among the first Paleolithic monuments identified in the Central Asian region, the only one of the Paleoanthropological find to date is the Selungur monument (Kyrgyz Republic) (Islamov, 1984; Islamov et al., 1988; Velichko et al., 1990).

We all know that from the territory of Central Asia to this day have been found physical manifestations of man, such as Neanderthal - Homo neanderthalensis, (Teshiktash man) and Homo sapiens or mixed (Neanderthal and Homo sapiens mixed image of man - Obirahmat man) (Alekseyev, 1976; Derevianko, 2008; Sayfullaev, 2005, 2018; Omonov, 2020). At one time, research in the Teshiktash and Obirahmat caves led to the idea of the migration of Middle Paleolithic people to these areas. However, there are only a handful of publications on migrations in Central Asia during the Early Paleolithic. In this article, we will focus on some of the migrations that took place in this region by our ancient ancestors during the Early Paleolithic period. A unique (paleoanthropological) find in the region of the first Paleolithic, the oldest human bone remains, was found and studied in the Selungur monument in the 80s of the last century (Islamov & Krakhmal, 1995; Velichko et al., 1988; Omonov, 2019). If we consider the early Paleolithic migrations in the Central Asian regions, we can take the example of ancient human bone remains found in the Selungur cave site.

Results and Discussion

From the third cultural layer of the Selungur cave site, 10 human teeth and a shoulder bone source were identified. These bones are estimated to belong to two or four people. The analysis of the teeth is as follows: if one tooth belongs to a woman, the rest are considered to belong to another person. Analyzes of the teeth showed that none of the teeth had caries (Kolobova et al., 2013; Krivoshapkin et al., 2020). This condition was considered an emergency of the disease. According to American researchers in this field, it is not uncommon to find that this condition occurs

in all representatives of steep walkers with material culture. The analysis of the structure of the teeth provides a clear and convincing picture of the relationship of the Selungur findings with fossil people in other regions. Comparing these findings with those of the ancient human species, it became clear that it occupied an intermediate position between the paleoanthropus and the archaeanthropus, far from the general direction of historical development.

Foreign scholars have differing views on these findings. For example, according to Professor A. Zubov, an anthropologist, Selungur explains the specific situation of the man as follows: The Selungur find once again demonstrates the extent of the distribution of archaeanthropes and the number of its native species (Islamov et al., 1988). The remains of a shoulder bone found in Selungur Cave have been identified as those of a 10-year-old boy. Comparing this find with the remains of human bones found in the Teshiktash cave, it is known that the bones of the Selungur man are much older. The above opinions about the Selungur man are certainly based on the analysis of the findings. However, in our opinion, this finding may also be one of our ancestors living in the region. because we come to this conclusion from the analysis of archaeological (stone objects) findings found in space. Because people who know how to make a stone tool and use it in economic activities (labour, hunting) are people who develop this consciousness and think (Bar-Yosef & Belmaker, 2011; Campaña et al., 2017). In our opinion, we can say that the Selungur man was one of our ancient ancestors. B.K. Sayfullayev, a leading palaeontologist in our country, commented on the paleoanthropological findings in the Selungur Cave. comparing man with the findings of the Teshiktash cave, which is not more than 60,000 years old, does not give the expected results. It is advisable to compare such analogies with the findings of Sinanthropus in China and Selungur in Europe”. According to the researcher, a colloquium on the remains of Selungur man bones should be organized and experts from around the world should be invited to the event, or if these findings are not available, these findings should be tested in major science centers (Campisano, 2012; Murodovich, 2020; Rybin, 2014).

In general, there is still no consensus on the conclusion of paleoanthropological findings from the Selungur cave (such as the stone industry). There are various debates and views on these findings, which means that these paleoanthropological findings have not yet been fully studied. In our opinion, as a solution to end the debate on these findings, it is necessary to implement the views expressed by the Stone Age expert B.K. Sayfullayev about the Selungur man. Only in this way can the various contradictory debates about the Selungur man come to an end (Shaydullaev et al., 2020; Glantz et al., 2018).

Conclusion

In conclusion, we can conclude that, as noted above, the geologically moderate (dry, warm, and partially humid climate) climate prevailed over a wide area of Central Asia during the glacial and interglacial periods of several thousand years during the Middle Pleistocene. Therefore, this region, rich in flora and fauna, was developed by our ancient ancestors about a million years ago (because the site of Kuldara in Tajikistan is dated to 800 thousand years). The analysis of the remains of the stone industry, paleoanthropology, paleo flora, and paleo fauna, found as a result of archaeological excavations in the monuments of the Early Paleolithic period of the region, can also prove our opinion. From the middle stage of the Pleistocene to the vast areas of Central Asia (various landscapes: mountain and foothill areas, steppes and semi-steppes, etc.) were mastered by our ancient ancestors, and the first migratory processes took place in these areas as early as the Early Paleolithic. Thus, geologically, in the Middle Pleistocene, ie in the early Paleolithic period, there were large migrations in the region, as evidenced by the materials of the Selungur Cave and the closest to it, the Chashma Archaeological Site, which is recognized as the oldest. we exemplify the oldest rough and simple labor tools made of stone (Krivoshapkin et al., 2010; Abbate & Sagri, 2012). The discovery and study of Selungur, Chashma, and several similar sites in the region have led to the formation of ideas about early Paleolithic migrations in these areas.

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