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On the Mongoloid Component in the Pazyryk Population

The Mongoloid trait combination displayed by two Pazyryk crania can be identified as Paleosiberian. Using the method elaborated by leading Russian specialists, the appearance of those individuals was sculpturally reconstructed. Sculptured faces support the diagnosis based on craniometric data. We discuss the advantages of a typological approach over a population approach to small and poorly preserved cranial samples. Judging by the skeletal materials from the Neolithic to the modern centuries, the Paleosiberian trait combination is distributed in the Baikal region, where mountainous taiga and tundra landscapes predominate. Those environmental conditions caused the scattering and isolation of hunting-fishing populations. This trait combination apparently originated among the Xiongnu of the southern Trans-Baikal region (Ivolga archaeological complex), when the natives had been involved in the activities of the border outpost—a center of trade, administration, craft, and agriculture in the northern fringes of the Xiongnu Empire. Individuals with Paleosiberian features could have reached the Altai Mountains at the early stages of the Xiongnu tribal union, correlating with the final stage of the Pazyryk culture. However, the share of the Paleosiberian component in the Pazyryk population was evidently minor.

Keywords: *Pazyryk culture, Altai Mountains, facial reconstruction, Paleosiberian trait combination, typological approach.*

Introduction

Before the advent of molecular genetics, the biological history of humanity has been mainly studied using the traditional methods of physical anthropology: anthropometric and, in particular, craniometric. These methods study features of the skeletal anatomical structures that are not correlated physiologically but associated in a geographic and ethnocultural space. Such correlations are referred to as historical, while the morphological complexes singled out on the basis of those correlations describe anthropological types: racial (based on the somatological features of the head and face) or cranial (based on the skeletal dimensions). The correlation-based morphological criterion of an anthropological type is not the only one. Specialists also take into account the geographical and historical principles dealing with the area, time of formation and lasting of the type. Thus, racial variants are not viewed as static and timeless categories but rather as evolving systems. The presence of an anthropological type, which is sharply different from the main variant of the population of some area, unequivocally points toward a migration of a new group of people to this area. Moreover, the origin and time of such migration can be determined as well.

The anthropological typology has been actively developed during the 50s and 60s of the 20th century. By the end of this period, a trend was formed toward negative attitude to the classic anthropological research based on

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metric and macroscopic descriptive approaches to the study of ancient and modern hominins. This was mainly due to the achievements of modern genetics: the results of the study of polymorphisms of biochemical markers of human blood (group factors, serum immunoglobulins, erythrocyte enzymes), as well as DNA loci (autosomal, mitochondrial, Y-chromosome) (Lewontin, 1972; Barbujani et al., 1997; Jorde et al., 2000)*, have shown that the bulk of variation of these markers (ca 85 % of the total genetic variation) is distributed at the intrapopulation level. Interpopulation difference only accounts for 15 % of the total variation, and just 5 to 10 % of these can be related to the differentiation of geographic (continental) groups, or races (Brown, Armelagos, 2001). Similar levels of inter- and intrapopulation variation of gene systems were calculated for craniometric variables by a number of researchers applying similar methods (Relethford, 1994, 2002; Roseman, Weaver, 2004).

The main conclusion of the geneticists interpreting the apparent trends of the variation of human biological traits is that neither racial nor conventional geographic groupings are genetically meaningful. In other words, racial classifications deal only with a negligible proportion of the human genetic diversity. Importantly, there is no consensus among geneticists regarding the importance of the small genetic differences between human populations for building historical models of migrations and admixture. Some studies show that the classification of populations based on frequencies of alleles of numerous loci matches the ethnic self-identification of individuals (Rosenberg et al., 2002), and the reliability of such classification increases with the number of loci employed. Thus, not only the diversity inside the loci is important but also the correlation between them (Edwards, 2003).

The correlation between morphometric characters of the human body (as well as any other biological object) means that the traits distinguishing anthropological types are inherited not in a discrete way but as a complex, which can be observed in a single individual. Such a hypothesis (not proven, but also not refuted by modern genetics) led a Polish anthropologist Jan Czekanowski in the beginning of the previous century to the formulation of a theoretical basis for the individual-typological definition of a race stating that a race is a sum of individuals (for the main points of the theory and a polemical presentation of counterarguments, see (Alekseev, 1961)). As a result, in some paleoanthropological works, the racial type of an individual was determined in terms of the individual typology; this approach is often employed today as well. When an archaeological culture or even a historic-cultural community is represented only by the remains of one or a few individuals, their anthropological type is nolens volens extrapolated to all the population of those cultures or communities.

Since the 1960s, the conception of race as a system of populations has become increasingly popular. According to this theory, changes of the anthropologic makeup of a population occur not only due to extrinsic influence (e.g. migration or admixture) but also as a result of interpopulation genetic drift (Alekseev, 1974: 22–24). The great majority of Russian anthropologists support the population conception of race as the main theoretical approach to the assessment of variability of anthropological traits (racial diagnostic complex) in human samples. The typological approach as a conception of the differentiation of humanity into discrete groups (races, anthropological types) based on complexes of morphological traits remains in Russian anthropology in opposition to the population approach, and has been criticized. The sharpest criticism regarding the typological approach can be found in early works of V.P. Alekseev written when the ideas of "populationism" in explaining the morphologic variation in man have been most actively developed in world science (see, e.g., (Alekseev, 1962)). In our opinion, a contradiction in the theoretical basis of the racial polytypism of our species has emerged. On the one hand, the objectiveness of types is supported (Problema…, 2002: 73–75), on the other hand, hypertrophied attention is brought to the population level of variation, which does not imply the existence of race as a discrete unit.

The root of the problem goes back to the imperfection of racial classifications, which are arbitrary to a great extent, since diagnostic traits are combined into historically correlated complexes only as trends, while the complexes themselves do not cover the whole typological diversity. But this does not mean that a single individual, based on his characteristic combination of morphological traits, cannot be assigned to some unit of the anthropological systematics of one or another classification. In his later works, after analyzing critically the anthropological studies adhering exclusively to the population "school", Alekseev became less categorical. He admitted the limitations of the consistent population approach, as well as the acceptability of various forms of typological (including individual-typological) analysis, according to the aims of a particular study; for instance, for assigning of singe skulls to "big" races (Alekseev, 1978: 8; 1980).

*We only refer to the pioneering works that have triggered the study of the variation of genetic markers at various levels of the demographic and geographic differentiation of our species. The publications dealing with various aspects of this issue are numerous, and their review is out of scope of this study. It is of note, however, that those works stimulated skepticism about racial classifications as one of the most important tools for building a rational system of biological diversity of modern man.

This article outlines the results of typological diagnostics of the anthropological composition of a group of individuals of the Pazyryk culture from the Ukok Plateau in the Altai Mountains. Irrespectively of the theoretical settings, it must be admitted that a "moment slice" through a population (or local-territorial group) represents a sample of individuals with a unique racial and ethnic history each. The cranial samples from local burial sites of the Altai Mountains, including Ukok, were previously compared with a broad range of Eurasian samples of the Bronze and Early Iron Ages. The results of that study have shown the complexity of the anthropological makeup of the Pazyryk culture population from the point of view of the three main taxonomic units of the racial systematics (Chikisheva, 2003a: 115–116; 2012: 169). The bulk of the population was made up of the autochthonous protomorphic anthropological component—the Southern Eurasian anthropological formation, which is phenotypically intermediate between the Caucasoids and Mongoloids. The influence of the Caucasoid component was substantial, but it was, in turn, typologically heterogeneous due to the genetic connections of the Altaian population with the people of the Bactria-Margiana cultures, which began at least at the second half of the 2nd millennium BC, and also due to the contacts between the populations of the Scythian-Saka ethnic-cultural community. Some Pazyryk individuals were classified as Mongoloids; thus, the analysis of this component in the Pazyryk population (including typological identification and reconstruction of the routes of infiltration of such individuals to the ethnic environment of the early nomads of the Altai Mountains) is the subject of the present study.

Material and methods

Two individuals from the authors' craniometric database (Chikisheva, 2003b), representing the local group of the Ukok Plateau (a female from burial 2, mound 1 at Ak-Alakha-3 and a male from mound 5 at Ak-Alakha-5), display the trait combination belonging to the Mongoloid anthropological type. The craniometric diagnostics of the type was accompanied by creating sculptural portraits of these individuals by the method of facial reconstruction. Values of craniometric variables are the "talking" data for physical anthropologists, but tell almost nothing about the appearance of ancient individuals to researchers from other fields. The method of facial reconstruction provides a visual representation of faces. The portraits of the Pazyryk individuals were created according to the protocols by the leading specialists of the Russian school of facial reconstruction (Gerasimov, 1949, 1955; Lebedinskaya, 1998; Balueva, Veselovskaya, 2004; Veselovskaya, 2015; Nikitin, 2009).

As the female cranium is deformed in the dorsal part of the cranial vault and the right half of the facial skeleton, partially covered with preserved soft tissues, and firmly articulated with the mandible and cervical spine, a hard copy of the 3D-model of the skull was printed. The correction of the deformed areas was carried out according to this copy. The male skull, damaged post-mortem, was glued with mastic, while the lost parts were reconstructed with plasticine. His 3D-model was developed and printed as well, in order to take the measurements and create the portrait.

Outlines of the skulls made using a dioptrograph were employed for making contour profile reconstructions of the faces (Fig. 1). Then the skulls were fixed at a cylindrical stand and oriented according to the

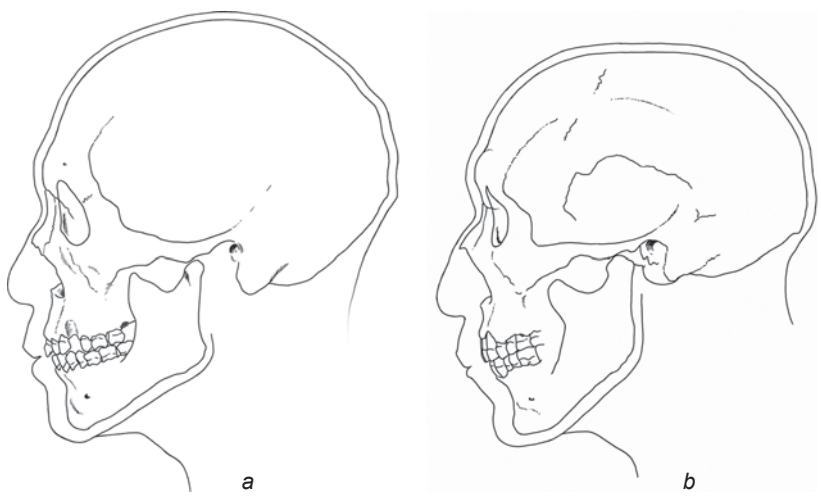

Fig. 1. Contour profile reconstructions of the female from burial 2, mound 1 at Ak-Alakha-3 (*a*) and the male from mound 5 at Ak-Alakha-5 (*b*).

Frankfurt horizontal plane. The masticatory muscles (m. masseter and m. temporalis) of both sides were reconstructed with plasticine taking into account the bone relief at the mandibular angles, development of the entheses of m. masseter in the frontal and parietal bones, depth of the temporal fossae, as well as the shape of the zygomatic arches. The eyeballs were molded according to the type and size of the orbits and placed with respective protrusion (Nikitin, 2009). One side of the skull was covered with plasticine ridges, the size of which reflected the thickness of soft tissues in different areas of the facial skeleton and neurocranium (Gerasimov, 1949, 1955; Lebedinskaya, 1998; Balueva, Veselovskaya, 2004). The central (profile) ridge was placed taking into account the shape of the frontal and nasal bones, piriform aperture margin, maxilla, the size and direction of the alveolar process and teeth, and, finally, the shape and size of the mental prominence. The correction was carried out based on the contour reconstruction made before.

After this, the eyelids were modeled according to the shape of the orbit, pattern of the orbital margins, and the position of the reference points of the eyes' corners. A half of the nose was molded afterwards based on the shape, size, and the pattern of the margins of the piriform aperture, position of the lower turbinate, shape and direction of the nasal bones and anterior nasal spine. A half of the lips was reconstructed taking into account the size and direction of the alveolar processes and teeth, size and shape of the alveolar arch, as well as the type of occlusion. A half of the chin was molded based on the shape and size of the mental eminence. Finally, the auricles were placed with respect to the shape of the mandibular ramus and the size and shape of the mastoid process.

The second half of the face was reconstructed taking into account the asymmetry of the skulls, where parts of the left half being molded have been compared with the parts of the right half already molded. The neck was modeled according to the position of the sternocleidomastoid muscles. At the next stage, the portraits were corrected with the aim to account for age changes and the information regarding their possible illness and trauma. The sculptural reconstruction of the male from burial 5 at Ak-Alakha-5 was complemented by a fur coat—the main type of male shoulder wear of the Pazyryk culture (Polosmak, Barkova, 2005: 51).

Results and discussion

Female from Ak-Alakha-3 (burial 2, mound 1), 28–30 years. The mummified body found in a well-preserved "frozen" burial (Polosmak, 2001: 67–86) has been the subject of numerous multidisciplinary studies. Facial reconstructions of this individual were also made previously but not published. One of her first sculptural portraits by T.S. Balueva has been exhibited at the Museum of History and Culture of Peoples of Siberia and the Far East of the IAET SB RAS. Photographs of that reconstruction hit the media; thus, the public impression of the appearance of the Pazyryk people was mainly shaped by this portrait. But the craniometric pattern of the individual published later (Chikisheva, 2000; 2003b: 221–224) did not match perfectly with the reconstructed complex of somatological traits.

Such a discrepancy, in our opinion, was due to the post-mortem damage to the skull. Soft tissues in the left side of the skull covered the upper surface of the zygomatic process of the temporal bone, lateral surface of the frontal process of the zygomatic bone (as well as a half of its anterior surface). In the right side, they covered a part of the parietal bone, a half of the maxilla, and the whole zygomatic bone. The cervical vertebrae were firmly articulated to the skull base. The posterior part of the cranial vault was deformed by the pressure of freezing water. This area of the skull was also the subject of manipulations during embalming of the body. A trepanation aperture (40 × 50 mm), with irregular margins, had been made in the lower part of the occipital squama. Through this aperture, the cranial cavity of the skull was filled in with fillers used by the Pazyryk people for embalming. A network of fractures surrounds the aperture. All these taphonomic factors led to lateral compression of the occipital region and the skull base. The right parietal bone is slightly deformed as well. A fissure is passing through its whole surface, from the level of the parietal boss downwards, reaching the occipital squama but not the trepanation aperture. A part of the parietal bone lateral to the fissure is slightly pressed inside the skull. The right half of the facial skeleton, while being articulated with the skull base through soft tissues, is shifted to the right and medially relative to its normal anatomical position. The development of the techniques of replication of 3D virtual images brought about the possibility of eliminating those deformations.

The skull is large, the outlines of the vault are smooth, the main tubercles are not strongly bossing, the cranial length and height are large as well, the transverse-sagittal index displays mesocrany. The occipital part of the sagittal arch of the vault is shortened, the occiput is weakly bossing. The frontal bone is inclined, slightly convex, weakly bossing, wide, flat in the transverse plane. The zygomatic processes of this bone are fairly robust and embossed. The supraorbital area is quite massive though not exceeding the range of variation typical for females. The mastoid processes are long, the supramastoid ridge is moderately developed. The external acoustic meati are small. The ears of the individual were likely small and weakly protruding.

The facial skeleton is large relative to the braincase. It is of an ellipsoid shape, very tall, wide at the upper and zygomatic levels, but apparently narrowing at the zygomaxillary level. The combination of the angles of the horizontal profile is heteroprosopic: platyopic and klinognathic. The canine fossa is of moderate depth. The vertical facial profile is orthognathic (according to the general angle), with the protruding alveolar region. The zygomatic bones are smooth, with no prominent relief. The nasal process of the frontal bone is low, wide, and trapezoid. The nasofrontal angle is flat.

The orbits are vertical, wide, low, enclosed, rounded (following M.M. Gerasimov (1949: 39)). The lower margin of the orbit is blunt, while the upper margin is sharp and overhanging in its lateral part. The orbital tubercles are weakly pronounced. The frontal processes of the maxilla are frontal. The morphological features of the orbits suggest an oblique-medial direction of the line of the palpebral fissure, a medium-sized eyeball, shallowly located in the orbit, and the presence of an epicanthus (Nikitin, 2009; Veselovskaya, 2015).

The nasal bones are long and wide, and display a sharp narrowing near the root. The nasal bridge is undulated. The angle of nasal protrusion is small. The piriform aperture is very tall and wide, with a blunted inferior margin and a very weakly developed anterior nasal spine (grade 1). Such a combination of anatomical structures suggests a weak protrusion of the nose with respect to the general facial profile, a very low nasal bridge, and a slightly elevated base of the nose (Gerasimov, 1949: 25–31; Lebedinskaya, 1998: 99–100; Nikitin, 2009; Veselovskaya, 2015).

The alveolar part of the maxilla is tall, moderately wide, and smooth. About a half of the height of the tooth crowns is worn down; therefore, estimation of the difference in size between the central and lateral incisors is impossible. The dental occlusion line is strait, psalidontic. The absence of bossing of the alveoli of the central incisors suggests that the filtrum was weakly modeled. The mandible is very large, with a tall and weakly inclined ramus, but with a small angular width and moderate relief of the masticatory tuberosity. The mental eminence is not strongly protruding anteriorly; consequently, the chin was small, oblique, and rounded. The combination of the features listed above implies reconstructing a mouth of a middle width, with procheilia and a slightly swollen colored part of the lips of a medium height (Gerasimov, 1949: 31–38). An additional factor supporting the impression of a strong lip protrusion is the vestibular position of the upper lateral incisors, which occurred, in our opinion, due to some excessive "pulling" masticatory loadings likely related to a specific occupational activity. The same factor could probably explain the strong dental wear of the upper incisors, which does not match up to the biological age of the individual and the pattern of attrition of buccal teeth.

Summing up, the combination of craniometrical and somatological traits of the female reconstructed in her sculptural portrait (Fig. 2) points towards her affiliation with the Mongoloid race. This notion is supported by such features as a very large, flat at the upper level face, with a weakly protruding nose, an elongated shape of the cranial vault, with an inclined, weakly bossing forehead, and the presence of an epicanthus.

Male from Ak-Alakha-5 (mound 5), 45–50 years. The bones of both neurocranium and facial skeleton, as well as the lower margins of the nasal bones, of the right half of the skull were damaged post-mortem. The destructions of the facial skeleton have substantially restricted the diagnostic complex owing to the exclusion of the angles of the horizontal profile. Craniometric data on this individual were published previously (Chikisheva, 2003b: 216–220).

The skull is large, moderately robust, dolichocranic, the skull vault is very low. The shortest component of the sagittal arc of the vault is the occipital arc, while its frontal part is the longest. The facial skeleton is large relative to the braincase. The frontal bone is of middle width, inclined, moderately bossing. The frontal bosses are smooth, the supraorbital area is moderately protruding. The superciliary arch development is grade 3. The temporal line is smooth. The sagittal suture relief is weakly pronounced. The parietal tubers are not bossing,

Fig. 2. Facial reconstruction of the female from burial 2, mound 1 at Ak-Alakha-3.

while the uniform convexity of the lateral walls of the parietal bones gives the skull a vaulted shape. The masticatory muscles entheses are weakly developed. The facial skeleton is of a pentagonal shape, it is very tall and wide at all levels, moderately protruding in the horizontal plane. The canine fossa is shallow. The general vertical profile of the face is orthognathic, while its alveolar part is protruding (alveolar prognathism). The zygomatic bones are rugose. The nasal process of the frontal bone is of a moderate height, wide, and subrectangular. The nasofrontal angle is flat. The zygomatic processes of the frontal bone are massive and embossed. The mastoid processes are not large, but exhibit well-pronounced relief. The external acoustic meati are large. The supramastoid ridge is strongly developed. The ears of the individual were likely quite large and strongly protruding in the upper part.

The orbits are wide and tall, open, rounded, the margins are blunt. The rounded upper margin suggests a fair development of the fold of the upper eyelid over its whole length, with some overhang in the lateral part. The morphological features of the orbits suggest an oblique-medial direction of the line of the palpebral fissure, a large and slightly protruding eyeball, and the absence of an epicanthus (Nikitin, 2009; Veselovskaya, 2015).

The nasal bones are long, wide, and display substantial narrowing near the root. The nasal bridge is undulated. The angle of nasal protrusion is small. The piriform aperture is of a medium width, the prenasal sulci are weakly developed, the anterior nasal spine is only slightly protruding (grade 1). The profile of the soft tissue nose can be reconstructed based on these features (Gerasimov, 1949: 25–31; Lebedinskaya, 1998: 99–100; Nikitin, 2009; Veselovskaya, 2015): medium wide, convex, weakly protruding, with a low nasal bridge and an almost horizontal base of the nose.

The alveolar region of the maxilla is of a medium height and width, and fairly rugose. About a half of the height of the tooth crowns is worn down; so, estimation of the difference in size between the central and lateral incisors is impossible. The dental occlusion line is strait, psalidontic. The alveoli of the central incisors are quite large, suggesting a fairly developed filtrum. The combination of the features listed above implies reconstructing a mouth of a middle width, with mild procheilia and a slightly swollen and low colored part of the lips (Gerasimov, 1949: 31–38). The mandible is wide at the angles, with a very low and inclined ramus. Relief of the masticatory tuberosity and the lower border of the body is quite prominent. The mental eminence is not strongly protruding anteriorly, which suggests a fairly small and rounded chin.

Thus, the sculptural portrait (Fig. 3) displays the face of a representative of the Mongoloid race, which is clear even in the absence of the epicanthus. The face is large, with wide cheeks, and moderately flattened. The shape of the nose is noteworthy due to the combination of weak protrusion of the nasal bones with respect to the vertical profile line, and strong protrusion relative to the horizontal profile. The low and inclined forehead, with smooth frontal tubers and moderately developed supercilliaray part, is a characteristic physiognomic feature as well. These are accompanied by pronounced dolichocrany.

The complexes of craniological and somatological traits observed in the facial reconstructions of these male and female make it possible to identify them as representatives of the Paleosiberian type of the Mongoloid race. The specific complex of traits of this type includes a large dolichocranic vault, an inclined ("receding") forehead, large dimensions of the face, as well as its flatness though not as extreme as in the modern Baikalian and Central Asian types of the Mongoloid race. The nasal protrusion is weak, but, again, it is not extremely flat.

The Paleosiberian type was first described by G.F. Debets in cranial samples of the Neolithic time from the Northern Cis-Baikal region (1948: 59). Debets considered the type as "an ancient form not present in the modern population" (1951: 95). Moreover, he arrived at the following conclusion: "…with respect to all the modern Mongoloid types of the Siberian population, the Paleosiberian type occupies approximately the same position as the Cromagnoid, or Protoeuropean, type in relation to the modern types of the Caucasoid

Fig. 3. Facial reconstruction of the male from mound 5 at Ak-Alakha-5.

race" (Ibid.). Thus, the question of the incompleteness of the morphological differentiation of the Neolithic humanity into consolidated complexes of the main races—Mongoloid and Caucasoid—was for the first time raised in Russian anthropology. At the present stage of the development of science, owing to the manifold increase in the amount of cranial samples, it is getting more and more evident that in the Neolithic North Eurasia, there also existed other morphological complexes unconsolidated from the point of view of the modern racial typology, which show continuity through the time and the succession of archaeological cultures.

The Paleosiberian type was prevalent in the Cis-Baikal region during the Neolithic. Then it appeared in the Hun-Sarmatian time among the Xiongnu burials in the South and East of the Cis-Baikal region and Mongolia (Debets, 1948: 59; Gokhman, 1960; Mamonova, 1974; Tumen, 1985). This type was also detected in the Tungus of the Northern Cis-Baikal (in the family clans having nomad camps in the Upper Angara basin) studied by Y.Y. Roginsky and M.G. Levin in 1927 (Roginsky, 1934). The three small family clans of hunters and reindeer-herders were likely one of the last representatives of the Paleosiberian anthropological type.

According to N.N. Mamonova, who studied the cranial samples from the Sudzhi and Cheremukhovaya Pad burial sites, among the individuals of the Xiongnu tribal union, a Mongoloid component of the Paleosiberian type related genetically to the Neolithic population of the Cis-Baikal region was present (1974). These sites are a part of the Ivolga archaeological complex with the core at a fortified settlement of the 2nd century BC to the 1st century AD, which was a border outpost, a trade, administrative, craft and agricultural center at the northern outskirt of the Xiongnu Empire (Davydova, 1985: 83–88). This suggests that the people displaying the features of the Paleosiberian type could have come to the Altai Mountains from the ethnic groups of the Xiongnu tribal union at an early stage of its formation, contemporaneous to the final stage of the Pazyryk culture. As the morphological complexes of a few studied skulls were assigned by Mamonova to the Paleosiberian type, she suggested that this type was the main in the anthropological composition of the Xiongnu (1974). I.I. Gokhman, who studied another small cranial sample from the burials at the Ivolga fortified settlement, came to the conclusion that the aboriginal Mongoloid component was represented in the sample by the Baikalian type (1960) typical of the Slab Grave culture. Racial components of both Mongoloid and Caucasoid types were detected in the numerous cranial samples from Mongolia studied by Tumen (1985). These observations emphasize the unique complexity of the anthropological composition of the population of the Xiongnu union.

Without touching the complicated question of the formation of the Xiongnu ethnic group, we would note that people of the Paleosiberian type were likely neither a part of the demographic core of the nomads nor a part of their elite stratum. The area of this type, according to existing Neolithic and modern anthropological data, was in the Baikal region, where mountain-taiga or mountain-tundra geosystems are prevalent in the landscape structures (Rakovskaya, Davydova, 2001: 258). Such ecological conditions determined the lifestyle of local people: during the Neolithic, people lived in relatively isolated small groups mainly engaged with hunting and fishing (Okladnikov, 1970). In the early 20th century, the Tungus population was subdivided according to the kin principle, and their occupation activities included hunting (e.g. Baikal seal), fishing, and reindeer-herding (Roginsky, 1934). The Baikalian aborigines have clearly kept the base of their lifestyle unchanged for several thousands of years*. But by the end of the 1st millennium BC, some of those aboriginal groups were involved in the sphere of influence of the Xiongnu state.

There can be very different reasons why individuals displaying the traits of the Paleosiberian race appeared in the Pazyryk population of the Altai Mountains not only as ordinary members but also as elite (female from "frozen" burial 2, mound 1, Ak-Alakha-3). But most likely, those people had some skills and knowledge of particular value for human groups. The anthropological and genetic diversity of the Pazyryk population suggests that it was their ability to accept these traditions that allowed the migrants to become full members of the Pazyryk society.

Conclusions

The first point to be noted that the subject field of discussion between consistent proponents of the population and typological approaches to the units of anthropological classification are the principles operating on the theoretical model of an isolated group of populations of a common origin. In real life, such a model is rather an exception, if exists at all. Migration fluxes initiated by the logic of historical events, environmental and social factors of restructuring of populations, and even stochastic events changing the fate of single persons—all affect the anthropological composition of populations. Therefore, careful attention to the pattern of individual variation of racial diagnostic complexes in cranial samples must remain an immutable rule of their analysis and interpretation of the results. The method of facial

*According to one of the recent series of radiocarbon dates, the Early Neolithic settlements from the Lake Baikal shore are dated to 7214–6123 BP (8160–6910 cal BP) (Goryunova, Novikov, 2018).

reconstruction, providing a visual representation of the appearance of a person, becomes particularly important in this context. The use of this method, in combination with archaeological data, written sources (whenever these are available), myths, and the results of paleopathological research, provides an opportunity to create portraits of ancient people in their local environment, thus, to "animate" the theoretical reconstructions of ethnogenetic processes.

The differentiation of cranial samples into anthropological types has helped us to understand that the Pazyryk culture of the mountain valleys of the Altai has emerged not only as a result of the evolution of the local substrate, but also under the influence of Iranian and Central Asian civilizations through the migration of the individuals carrying their traditions. The role of the Eastern component identified as Paleosibirian via its craniometric and racial (somatological) features was likely not a systematically important factor of the Pazyryk culturogenesis.

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