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LATE BRONZE AGE IN THE MINUSINSK BASINS

A.V. Polyakov

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HIMALAYAN AND CENTRAL ASIAN STUDIES

Editor : **K. WARIKOO**
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CLASSIFICATION AND CHRONOLOGY OF BRONZE KNIVES OF THE LATE BRONZE AGE IN THE MINUSINSK BASINS

A. V. POLYAKOV

ABSTRACT

The article presents a new insight into the classification of solid bronze knives found in the burials of the Late Bronze Age in the Minusinsk Basins (late 15th – late 9th centuries BC). It is proposed to abandon attempts to combine them into a single line of development. Based on the migration concept of cultural genesis in the region, it is hypothesized that they are divided into four separate groups; each of them has its own history of development taken place outside the Sayan-Altai. Besides, a group of “Andronovo” knives is singled out separately, the appearance of which in this group of burials reflects the process of coexistence of cultures in bordering territories.

Keywords: South Siberia, Minusinsk Basins, Late Bronze Age, pre-Scythian time, knives.

The “Karasuk” knives are one of the “brand identities” of archaeology of the Minusinsk Basins. The study of them has been going on for over a hundred years, but the typologies and classifications, proposed by researchers, have not become the basis for a wide range of studies. The problem lies in the fact that all the products of this long chronological period (the end of the 15th – the end of the 9th centuries BC) were built into a single continuous line of development with a gradual transition from one type to another.

Modern research shows that migration processes played a huge role in the Paleometallic Era in the territory of the Minusinsk Basins. During

the Late Bronze Age, new groups of population came to the Yenisei, who brought special sets of artifacts, including knives. As a result, the entire array of these products should be divided into several groups, which, as studies show, have chronological significance among other things (Fig. 1-6). They exist in most cases sequentially, but they are not an evolutionary series. The formation of each new group is a consequence of a new population's appearance with its own set of artifacts in the Minusinsk Basins.

The "Karasuk" knives from the Minusinsk Basins have long become a common name, which is used by archaeologists from the Black Sea region to Transbaikalia in their works. However, if you try to find out some of the most common and characteristic features of these products, you will find that their range is extremely large. Knives can be curved and cranked, with a spike, a stop or without them. The range of pommel options is extremely wide: different versions of a ring or a half-ring, mushroom-shaped, zoomorphic, two-ringed, a ring with three buttons. According to the chemical composition, there are knives made of arsenic copper, and there are knives made of high-quality tin bronze. What is the reason for such a wide range of characteristic features? And is it right to combine all these products into one group? The question of the occurrence of this problem was rightly raised by S. V. Khavrin over 25 years ago (Khavrin, 1994).

At the moment, historically, "Karasuk" is called products originating from monuments of a long historical period from the finale of Andronovo culture to the beginning of the Scythian time. According to modern data of the radiocarbon analysis, its length is estimated at about 600 years — from the end of the 15th century BC to the end of the 9th century BC (Polyakov, Lazaretov, 2019; Polyakov, 2020. pp. 43-44). During the archaeological study of sites in the complexes of this period, more than 100 solid knives have already been found, aside from numerous fragments of blades with different contexts. In the vast majority of cases, they are from burials, which makes it possible to study them on the basis of the modern fractional chronological scale of this period (Lazaretov, Polyakov,

2008). The number of accidental finds has been about a thousand.

The history of studying knives from the Late Bronze Age of the Minusinsk Basins has a long history. Their bright characteristic features were noticed by the first collectors at the end of the 19th century. However, it makes sense to focus on key scientific works that are not descriptive, but offer concepts of their chronological development and classification.

The first work in this field became a section in S. V. Kiselyov's monograph. He proposed the classification which is based on a shape of knives and divides them into three "branches": cranked, arched-spine, concaved-spine (Kiselyov, 1951. pp. 119-122). He associated the cranked forms mainly with the Minusinsk Basins, and in relation to the rest he noted a very wide geographical distribution to the southeast "all the way to the Great Wall" (Kiselyov, 1951. p. 120).

The next study was M. D. Khlobystina's work published in 1962 (Khlobystina, 1962). Relying on the similarity of the cranked "Karasuk" knives with a similar in shape product from Beltyry- the Okunev burial ground-, she draws up a concept of the development of this type of artifacts over time. According to her hypothesis, the chronological indicator is the central angle between a handle and a blade of a knife, which, in her opinion, gradually increased over time. Based on this, the cranked knives, which look more archaic, were considered the most ancient, and the arched and straight ones belonged to a later period. Later, on this basis, a hypothesis was proposed for the chronological development of sites of the Late Bronze Age in the Minusinsk Basins (Khlobystina, 1963). In her works, M. D. Khlobystina relied mainly on collections of random finds of knives from the territory of the Minusinsk Basins ("up to 300 items"), which she divided into 10 groups. According to her opinion, this division reflected the process of gradual development of this type of artifacts. Finds from burial complexes during this period were few (12 items) and did not make it possible to build a classification on this basis. They were involved only in the finale of the work to verify the results obtained.

E.A. Novgorodova continued studying this topic in 1970 (Novgorodova, 1970. pp. 65-96). She used S. V. Kiselyov's classification in

her work and added another type to this scheme - straight ones, which were mentioned in S. V. Kiselyov's monograph, but were not distinguished. In her work, she places special emphasis on the local (in the Minusinsk Basins) origin of the cranked shape of knives, arguing with researchers who ascribe them to Chinese prototypes of the Western Zhou Era (S. A. Teploukhov, S. V. Kiselyov). It is because of its local origin and archaism she considers them the earliest among the Karasuk series. At the same time, she does not try to deduce one group from another, considering them to exist partly in parallel (*Novgorodova*, 1970, pp. 171-176). Following S. V. Kiselyov, she refers only knives of straight forms to the most recent pre-Scythian stratum.

N. L. Chlenova's work was no less large-scale and important, which was presented in the monograph of 1972 (Chlenova, 1972). Based on the study of 635 knives, among which only 55 came from complexes, and the rest of them are random finds, she proposes to distinguish 13 groups that have partly chronological significance. Unlike M. D. Khlobystina's classification, the systematization is based on not one criterion, but on a whole range of measurements and features; among which the most important are: the shape of a knife, the type of a pommel and the method of connecting a blade with a handle. At the same time N. L. Chlenova builds a general view that differs only in some details from the earlier concept. In the same way, as the earliest starting point, composite cranked knives are used, which imitate more ancient samples and in particular a knife from the Okunev culture burial in Beltyry burial ground. The final groups 12-13 are represented by slightly curved samples with a ring-shaped pommel. The author of the concept assumes the gradual development of knives from group 1 to group 13, which is supported by the correlation tables.

These classification works were based on the study of large arrays of random finds. The few knives from the complexes were used very limited and only to evaluate the results already obtained. Such a purely "theoretical" approach led to the fact that the drawn classification schemes contradicted the real field observations on which the chronological scheme

of M. P. Gryaznov was based. Starting from the analysis of complexes and their interrelationship, he built a sequence of changes of the “classical” (or Karasuk) and Kamennolozhsky stages. As a result, a different picture was observed. In his opinion, there were mainly arc-shaped knives with a ring in earlier complexes, and the cranked forms appeared in the Minusinsk Basins later (Pyatkin, 1967; Vadetskaya, 1986. pp. 51-65).

Most researchers imply the existence of only one line of development of knife types, which includes all samples found on the territory of the Minusinsk Basins. This approach is based on the autochthonous concept of the development of ancient populations. That is, it is assumed that one population lived permanently on the Middle Yenisei, which gradually developed their skills in making metal knives, which was reflected in the change in their shapes, sizes and other characteristics. This approach was characteristic of the historical period when these schemes were under development. To date, other concepts based on the data of natural science methods have appeared. The results of paleogenetic studies convincingly show that the formation of key archaeological cultures of the Paleometallic Epoch is associated with very active migration processes (Polyakov, 2019). The formation of Afanasev, Okunev, and Andronovo cultures is based on the appearance of significant groups of migrants on the Middle Yenisei, who almost completely replaced the previous population (Polyakov, 2020). These processes did not stop with the onset of the Late Bronze Age; the study of the fractional chronology of which shows that there is no complete replacement of the population, but there are repeated infiltrations of significant groups of indigenous dwellers, who form independent cemeteries on the territory of burial fields (Gryaznov et al., 2010. pp. 83-94). The proposed system of division into stages and chronological horizons partly reflects these processes (Lazaretov, Polyakov, 2008). The accompanying inventory of burials changes regularly and very dramatically. Each new stage reflects not so much evolutionary processes as the emergence of new types and categories of things.

This work proposes a new approach to the classification of knives of the Late Bronze Age of the Minusinsk Basins, which is based on three

main reference assumptions. Firstly, the increased number of knives, found in the complexes (about 100 items), makes it possible to reject the leading role of random finds. The analysis of the context, in which they were found, allows us to study the statistics of their occurrence with other categories of inventory and features of the funeral rite. Secondly, existence of the elaborated scheme of development and change of sites of this period allows us to analyze not only the relative, but also the absolute chronology of specific groups of knives (Lazaretov, 2006; Polyakov, 2006; Lazaretov, Polyakov, 2008) on the basis of context. The classification of knives, superimposed on the general picture of the processes of the population cultural genesis, makes it possible to determine not only the time of formation of certain groups, but also the reasons for their appearance. And thirdly, the rejection to rely on the autochthonous concept of population addition will allow us to divide objectively groups of knives according to their genesis and not trying to reduce them into a single line of development of forms.

It should be noted at once that the absence of a typological series does not mean that there are no transitional forms between different groups. Their appearance is inevitable. However, it must be understood that they are not the result of a gradual transformation of one group into another. Transitional forms only reflect the processes of their interaction and mutual influence.

“Andronovo” Group: Plate knives without a pommel (Fig. 1-1, 2). To date, only two items have been found in the complexes, but taking into account their fundamental differences and importance for studying the processes of intercultural contacts, there are grounds to isolate them and briefly analyze. Among the random finds, if such items were found, they were most likely not attributed to “Karasuk” ones. As a result, they were not included into the typologies of other researchers. Both items are made in a one-sided casting mold, do not have a pommel and are so simple that they almost do not require additional description.

The knife from Orak III burial ground (grave 4) has a smooth ledge at the transition between a handle and a blade, and a plate section (Fig. 1,

1). Circumstances of its discovery are not entirely clear. Based on G. P. Sosnovsky's diaries, M. N. Komarova writes that the grave has not been discovered. Only two clusters of burnt bones and two vessels with a knife between them were recorded (Komarova, 1975. p. 89). The rite of cremation is characteristic of Andronovo culture sites, but the published vessels belong to the "Karasuk" tradition (chronological horizon I-a of the Late Bronze Age). The only possible explanation is the mechanical mixing of elements of two cultures ("Karasuk" and Andronovo), which has already been considered in a separate work (Polyakov, 2009). The knife from grave 1 of burial mound 81 of Sukhoe Ozero II burial ground was found in more traditional conditions together with an awl near animal bones (Fig. 1-2). All elements of the rite and the accompanying inventory (a vessel, an awl, temporal rings on a skull) demonstrate exclusively traditional features of the stage I of the Late Bronze Age. Mapping shows that both cases belong to the northernmost part of the area, on the border with the Nazarov Basin. Not a single knife has been found in Andronovo culture sites on the Middle Yenisei, but in the territory of the neighboring region - the Upper Ob - finds of completely similar items are known (Matyushchenko, 1973. p.13, Fig. 3-4; Fig. 8-1-13). They are also represented in more remote areas of the Andronovo cultural and historical community (Avanesova, 1991. Fig. 33; Gening, Stefanova, 1994. Fig. 2-1; 6, 24).

Thus, we have two unique finds of knives of this group in the burial complexes. Based on the analysis of the context, we can argue that they are both associated with the earliest chronological horizon I-a of the Late Bronze Age and are represented only in the northernmost burial grounds within the area. In the previously published study, it was shown that there is reason to assume a certain period of coexistence with Andronovo culture in the north in the Nazarov Basin and the earliest sites of the Late Bronze Age (the "Karasuk" stage I) to the south in the Chulym-Yenisei and Syda-Yerbinskaya Basins (Polyakov, 2009). All this leads us to the idea that this group of knives is not actually "Karasuk". Probably, these are Andronovo artifacts that got into the sites of the stage 1-a of the Late

Bronze Age as a result of close contacts taking place at that moment on the border of their junction. This point of view is confirmed by Orak III burial complex (grave 4), where there are traces of cremation, which unequivocally has a connection with the Andronovo tradition.

Group I: Arc-shaped knives with a ring-shaped pommel and special profiling of a ring, a handle and a blade (Fig. 1-3-13). This is a quite numerous (19 items) and very distinctive group of knives. Its main characteristic is not at all “arched with a ring-shaped top”. Knives of other types could be described this way, as well as a large number of post-Andronovo products from Siberia and Central Asia. The leading value is the unique profiling of all elements. The section of a ring pommel is an asymmetric rhombus with a short part closer to the inner part of a ring and a long one facing outward. We can say that a ring has a thickening inside and a sharp edge outside. This radically differs it from ring pommels of other groups, which have an oval or rectangular section. A handle profile has an even more complex shape, which can be described as an I-beam with smooth transitions and sharp edges. A similar cut has a blade slightly concave in planes and a sharp edge of a spine.

This group of knives has also a second extremely important feature — several transverse grooves at the transition point from a handle to a blade (Fig. 1-4, 7-13). There are from one to three of them, and they play an extremely important role in the identification of knives of this group. Unfortunately, they are not always preserved on samples from burials, since heavily crafted specimens were placed in graves, on which this element had already been completely lost (Fig. 1-3, 5, 6). But it can be found in a lot on knives from random finds (Chlenova, 1972. Table 6).

Knives of I group are found mainly in the burials of the Syda-Yerbinskaya and Chulym-Yenisei Basins. In the southern part of the Minusinsk Basins, they are practically unknown in this form. But there is a certain number of products with mixed signs of groups I and II. This is not surprising. Analyzing the context of the burials in which these knives are found, it can be noted that they date exclusively from the early stage I of the Late Bronze Age, the sites of which are represented in the Chulym-

Yenisei and Syda-Yerbinskaya Basins and are not recorded further south. This unique group of knives has a very special meaning, since they can be called "Karasuk" in the full sense of this word. The artifacts of this appearance were brought by the very group of migrants who laid the foundation of the Late Bronze Age on the Middle Yenisei. They are found only in the burials of the initial stage I, and are no longer represented in later burials.

In the process of studying knives of this type in the collection of the State Hermitage Museum, one observation was made that may be of great importance for their further distinguishing and analysis. It was noted that to hold such a knife in your hand with a normal grip is inconvenient. The sharp edges of a handle stick painfully into a hand. Experimenting with the position of a hand on a handle, a fundamentally different grip was selected, which allows you to avoid unpleasant feelings. At the same time, the purpose of some technical details became clear. Its essence lies in the fact that a thumb is placed along the upper plane of a handle, and the other four finger pads rest against the lower plane. This hand position is not quite familiar, but it is quite convenient. At the same time, the contact of a hand with sharp edges of a handle is excluded, but the need for concavity of both sides becomes clear. Fingers fit into these segments very comfortably and do not slip off. With this grasp, a thumb pad lies directly on transverse grooves at the point of transition from a handle to a blade, which provides additional grip and control over the position of a hand on a knife.

It should be noted that this is the only type of knives for which this grip is applicable. All the others have a flat or oval handle profile, as well as a spike or a ledge, suggesting a traditional grip. Wandering from the main topic of the article, it should be noted that all knives of cranked and arched shapes have exclusively a household purpose. They are not applicable in military affairs, since this form does not assume stabbing or chopping blows. Their main purpose is butchering of animal carcasses. The incisions are made in the direction "towards themselves" (that is why they have an arched or cranked shape), which does not imply the need

for a hard grip. With this technique of use, a spike or a ledge at the point of transition from a handle to a blade has no practical significance. They are necessary so that a hand does not slip on a blade when applying strong stabbing blows, i.e., they assume a fundamentally different technique of use. The appearance of such technical elements on knives of arched and cranked shapes, which is characteristic of groups II and III, seems to be a consequence of the influence of completely different, obviously “paramilitary” samples, which probably have a straight shape. This is confirmed by the disappearance of these redundant elements on knives of group IV and even later Scythian samples.

Group II: Arched knives with various types of pommels: a ring sometimes with three “buttons”, mushroom-shaped or zoomorphic (Fig. 2). 17 items were found in graves. In addition to the new forms of a pommel, this group is distinguished by the appearance of a spike at the base of a blade, as well as a change in a handle profile. Now it is either an ordinary I-beam (without smooth transitions and sharp edges) or an oval, in rare cases - a plate. With all the variety of shapes and types of pommels, knives of this group exist completely synchronously, probably, reflecting the population mixing in this period.

Knives of this group are characterized by a massive (up to 80% of cases) appearance of ornaments on them. These are usually triangles directed towards each other on handles (Fig. 2-7, 12), imitation of a lace along its edge (Fig. 2-1, 2, 9) or groups of lines drawn transverse (Fig. 2-3, 4, 6). Only one ornament is registered on a blade — groups triangular chevrons extending from a spike line (Fig. 2-4, 6, 7). Considering that on knives of group I the ornament is presented only in two cases (10%), this is a very significant change, which shows their fundamental difference. It is interesting to note that these ornamental compositions are also characteristic of ceramics originating from graves. Similar simple compositions of horizontal lines are recorded on vessels, as well as on handles of knives, and triangular chevrons hanging down.

The analysis of the context which knives of this type originate from shows their very narrow chronological position. The funeral rite and the

rest accompanying inventory, primarily ceramics, allow us to date these graves only to the (Karasuk-Lugavskoe) stage II of the Late Bronze Age. They appear as part of a very strong cultural “wave” that brought new ritual elements and artifacts to the Minusinsk Basins; many of which date back to the Andronovo tradition. We can say that this “wave” led to the addition of the stage II, and knives of the group II are an integral part of it.

According to the types of pommels, there are reasons to divide them into two main variants.

Variant A: Knives with a ring-shaped pommel (Fig. 2-1, 2, 8, 10-12). In about half of the cases, there are “buttons” on this ring, most often three. The main difference from knives of group I is the change in the profile of a ring. Now it is either oval or triangular with an extension to the outside. The “buttons” on a pommel are of particular importance. In addition to four discoveries in burials, there is a very representative series of accidental finds (Chlenova, 1972. Table 5-14-28). Similar “buttons” are found on other bronze products of this time: earrings, celts, arcs of an OUP (“an object of unknown purpose”), knife handles (Polyakov, 2015). Completely similar knives with three buttons and a spike, a fairly common find in burials of the Yin Era in Northern China (Varyonov, 2017). Studying these complexes, it can be noted that the ornament in the form of “buttons” or “pearls” is also found on other bronze products (celts, spears, spike hammers), forming a certain pictorial tradition. Unfortunately, in the territory of modern Mongolia in the Bronze Age, the non-inventory burial rite prevails and at the moment no similar knives are known, but they are represented on “the deer stones” (Volkov, 2002. Table 17, 18). Thus, the Minusinsk samples turn out to be on the northernmost edge of the territory where such products are widespread.

Subgroup B. Knives with mushroom-shaped pommels (Fig. 2-3-7, 9). Most often this type of a pommel is supplemented with a small ring necessary for fastening a strap (Fig. 2-3-7). The profile shapes of handles are as diverse as possible: an oval, a weakly expressed I-beam, a plate. A blade has a wedge-shaped profile. The vast majority of items have a spike

at the base of a blade. A pommel, when viewed from above, most often has a round shape, which distinguishes them from similar knife caps of the group III, more often oval or sub-triangular. Knives with zoomorphic pommels are probably only a special case of mushroom-shaped ones. Such specimens are extremely rare in burials, but we know a series of accidental finds (Chlenova, 1972. Table 9, 1-10). As well as knives with three “buttons” on a ring, they are of great importance for establishing communication with relatively southern territories, where they are also represented in the complexes of Northern China and on the deer stones of Mongolia (Varyonov, 2004; 2005a; 2005b; Volkov, 2002. Table 22, 23, 36, 41, 47, 50, 76, 78, 79 and others).

Group III: Cranked knives (Fig. 3). It is the shape that is the defining characteristic of this group. It is just necessary to note that occasionally there are items that were worn out to its complete loss. In the vast majority of cases, a pommel is designed in the form of a “mushroom-shaped” cap having an oval or sub-triangular shape. Much less often it can be made in the form of a ring, two rings or in a zoomorphic style, which is probably a consequence of the influence of the population, who left the sites of the stage II of the Late Bronze Age. Handles usually have a plate or “bracket” profile. The transition to a blade is made either in the form of a ledge or a spike. A blade profile is most often T-shaped with a thickening along a spine. In general, the dimensions of cranked knives are noticeably smaller than the two previous types. Ornaments on a blade are almost not found, and on handles they are presented quite often and are very diverse.

As with the previous groups, we see a stable connection of cranked knives with a certain chronological period. M. P. Gryaznov called it the Kamennolozhsky stage, N. L. Chlenova — Lugavskoe culture. The modern chronological scheme assumes their assignment to the (Lugavskoe) stage III of the Late Bronze Age. We made an observation that makes it possible to divide cranked knives into two types that have, in part, chronological significance (Lazaretov, Polyakov, 2008. pp. 44-46). There is no strict border between these two types. The transition is very gradual.

Type 1: Cranked knives with a loop under a pommel and a spike in

the transition from a handle to a blade (Fig. 3-1, 2, 4, 7, 12, 13). They have a slightly earlier chronology and are mainly represented in burials of the chronological horizons III-a and III-b.

Type 2: Cranked knives without a loop under a pommel and with a ledge in the transition from a handle to a blade (Fig. 3-8-11). They are noticeably more common in relatively later burials of the chronological horizons III-b and III-c.

The appearance of group III knives is not the result of a gradual transformation of arc-shaped knives (groups I and II). They are a completely independent line of development, which was not previously represented in the Minusinsk Basins. There is no doubt that they go back to much older types of knives, in which a metal blade was inserted at an angle into a wooden or bone handle. Moreover, in burials of the stage III of the Late Bronze Age, in addition to solid knives, broken off blade tips are quite common, which are placed in a grave instead of entire knives as a cutlery. It is possible that they were originally fixed in wooden handles.

It is quite rightly that in search of the origin of these knives N. L. Chlenova and M. D. Khlobystina pay attention to a knife of Okunev culture from Beltyry burial ground (Lipsky, Vadetskaya, 2006. Table II, 4). Indeed, such products were characteristic of the Chernov stage of Okunev culture. However, this does not mean that their transformation into solid-cast cranked knives took place in the Minusinsk Basins. There is a gap of at least 600 years between Okunev and Lugavskoe samples. There is no doubt that prototypes of cranked knives were used during the Early Bronze Age not only on the Middle Yenisei. The geography of such products was very wide, and the gradual addition of the tradition of making solid knives, imitating combined prototypes, could occur in the vast territories of Central Asia.

Group IV: Plate knives (Fig. 4). Knives of this group are radically different from all the samples described above. They have a very simple shape with a slight bend or even without it. There is no spike or ledge at the base of a handle. A handle profile is platelike, and blades are wedge-shaped. A pommel may be missing or represent a ring or “an arch on a

bracket". There are no ornaments on these knives.

All of them were found in burials of the (Bainov) stage IV of the Late Bronze Age. Previously, according to M. P. Gryaznov's periodization, these sites belonged to the Bainov stage of Tagar culture. However, ongoing studies of the chronology of the sites of the final Paleometallic epoch convincingly show that they continue the development line of the Late Bronze Age and are not directly related to the Scythian time (Lazaretov, 2007).

Attention is drawn to the maximum primitivism of these knives. In fact, they are a straight or slightly curved plate, with one sharpened edge; even a pommel is not always present. Practically nothing connects them with the preceding groups I, II and III. Any transitional options or forms are completely absent. In fact, they are much closer to the "Andronovo" group than to groups I-III.

The chemical analysis of the composition of the metal used in the production of knives, is of particular importance. The analysis of the "Andronovo" group products was not carried out. Knives of the group I are most often made of bronze alloyed with tin (Chlenova, 1972. Appendix 2). The group II is a mixed version, where, along with tin bronzes, there are a large number of products made of arsenic copper. Finally, the group III is represented mainly by knives made of arsenic copper. In few cases, products with tin ligature are found in this group, but, most likely, their appearance is a consequence of the remelting of older products. The process of gradual decrease in the number of products with tin ligature was most clearly traced by the example of the Nizhnyaya Tyoya group of sites (Khavrin, 2001). The group IV products have not yet been studied in terms of their chemical composition.

Taking into account the absence of tin deposits in the Minusinsk Basins, we can confidently state that the first tin bronzes, as well as the tin alloying technology itself, were brought by migrants of the first "wave", who formed the first stage of the Late Bronze Age. In the future, the links with ore deposits, most likely located in Eastern Kazakhstan, were lost, and there was a gradual transition from this metallurgical tradition to

simpler technologies involving the use of metal with a natural increased admixture of arsenic, characteristic of the Sayan-Altai deposits.

CONCLUSION

After analyzing the materials at our disposal, we can note that the entire array of bronze knives found in burials of the Late Bronze Age falls into several distinct groups with chronological significance (Fig. 5). These groups are not connected by a single line of development. Each of them has its own “roots” and can be studied as an independent phenomenon. They were not formed in the Minusinsk Basins, but were brought to this territory by groups of migrants of their carriers. Attempts to build a single development line on their basis were possible only on the basis of an array of random finds. In the case of using only products from complexes for classification, these concepts, built solely on theoretical postulates, are in clear contradiction with already well-proved column sequences.

The “Andronovo” group is still extremely small and is unlikely to be represented by a large number of artifacts in the future. Unfortunately, knives have not yet been found in Andronovo sites on the territory of the Minusinsk Basins, which is a characteristic feature of the funeral rite. Therefore, the name of this group remains hypothetical for now. We have to rely on analogies from burial grounds of other, often very remote regions. There is no reason to attribute these knives to the Late Bronze Age. They are only a reflection of a certain period of coexistence of various population groups in the north of the Minusinsk Basins at the end of the 15th century BC.

Group I can rightfully be considered as “Karasuk” proper. It was these products that were brought to the Yenisei by a group of migrants, the appearance of which led to the formation of the Late Bronze Age. Most likely, they came through Western Siberia from the territory of modern Kazakhstan, repeating the path of the Andronovo (Fyodorov) tribes. It is worth noting the amazing solidity of this group, which demonstrates a very clear set of features that remains unchanged

throughout the stage I. This characteristic can be attributed not only to knives, but also to the funeral rite and other artifacts of this population as a whole. In the Minusinsk Basins at the end of the 15th century BC, a population group with very distinctive and well-established signs that go back to the “roots” of the Andronovo tradition appears. It continues its development throughout the 14th century BC. A completely new level of metallurgy and the use of tin additives in the production of bronze objects are most important.

At the turn of the 15th–13th centuries BC, a new population starts penetrating from the south into the Minusinsk Basins, which has a very interesting set of cultural features combining Andronovo and Central Asian elements. Apparently, they are descendants of the Andronovo population “wave”, that penetrated into the territory of modern Mongolia and Northwestern China from the Kazakh steppes along the southern slopes of Altai. Traces of this southeastern line of expansion are now being actively studied now (Kuchera, 1988; Khavrin, 1992. pp. 45-46; Zadneprovsky, 1992, 1993; Kuzmina, 1994; Molodin, Alkin, 1997; Molodin, 1998; Bekhter, Khavrin, 2002; Chuev, Kitov, 2007; Li et al, 2010; 2015; Kozintsev, 2012 and others). This new population is moving into the Minusinsk Basins from the south through the territory of the Upper Yenisei and brings not only a new set of signs of the funeral rite, but also a significant number of artifacts, from which a set of women’s jewelry and knives of group II should be highlighted. These knives combine the features of the Andronovo (I-beam cross-section of a handle, ornamentation with triangular chevrons, pommels in a ring form) and Central Asian (a spike at the base of blade, oval cross-section of a handle, mushroom-shaped pommels with a loop) traditions. They have a completely independent genesis; and some elements of similarity with group I are determined by their common Andronovo sub-basis. The period of existence of knives of group II on the Middle Yenisei refers to the 13th–11th centuries BC. It was during this period (the Yin Epoch) when very similar samples are brought into the sites of Northern China and are considered there as northern imports (Lin Yun, 1990. pp. 40-42; Chugunov, Rawson, 2019. p. 274).

In the 11th century BC, a new population penetrates into the Minusinsk Basins again from the south through the territory of the Upper Yenisei, which also gradually spreads its influence from the south to the north. M. P. Gryaznov allocated the sites left by them to the Kamennolozhsky stage, and N. L. Chlenova - to separate Lugavskoe culture. According to the modern chronology, this is the (Lugavskoe) stage III of the Late Bronze Age. Probably, it was the same indigenous Central Asian population, who had been in contact for a long time with the post-Andronovo tribes, who appeared on the Middle Yenisei a little earlier at the stage II of the Late Bronze Age. It should be noted that by all its signs and features, this population looks more "barbarian" than its predecessors. First of all, this concerns the technologies of pottery and metallurgy production.

They brought the tradition of making cranked knives of group III. These are special products that differ not only in shape, but also in the types of pommels, ornaments and handle profiles. There are two stages of their development in the Minusinsk Basins. Earlier samples have a loop under a cap and a spike at the transition from a blade to a handle (type 1). Gradually, they transform into type 2 - without a loop and with a ledge instead of a spike. The period of development of this group in the Minusinsk Basins covers the 11th–9th centuries BC. "Coin" knives from Northern China are usually given as an analogy; they also have a cranked shape and date from the Western Zhou Epoch (*Novgorodova*, 1970. Fig. 20, 25).

Finally, in the 9th century BC, another population group appeared which can be considered as harbingers of Scythian collectives' arrival in the Minusinsk Basins. Starting from this moment, the (Bainov) stage IV of the Late Bronze Age is being formed. Some of these sites were previously included by M. P. Gryaznov into the composition of the Bainov stage of Tagar culture. However, modern research allows us to separate them from the Scythian era (*Lazaretov*, 2007). Together with them, a fundamentally new group IV of knives appears, unlike any of the earlier ones. Later, at the turn of the 9th–8th centuries BC they are replaced by the Scythian population.

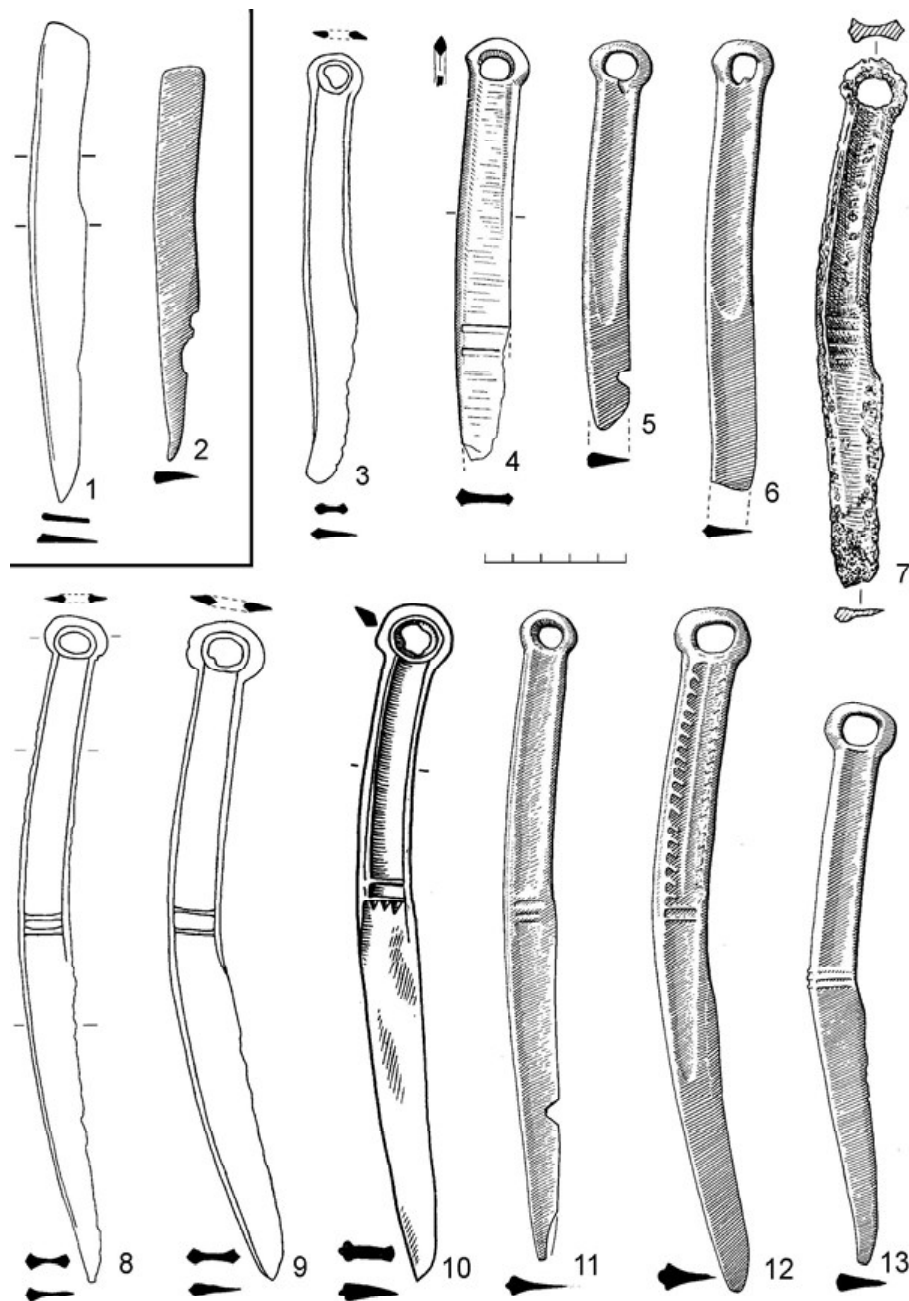


FIG. 1. KARASUK KNIVES : KNIVES OF "ANDRONOVO" (1, 2) AND GROUP I (3-13): 1 – SUKHOOZERO II, MOUND 81, GRAVE 1; 2 – ORAK III, GRAVE 4; 3 – KARASUK I, BURIAL GROUND 56, GRAVE 1; 4 – MARA, MOUND 1, GRAVE 2; 5 – SUKHOOZERO II, MOUND 81; 6 – SUKHOOZERO II, MOUND 81; 7 – MALYEKOPENY III, MOUND 127, GRAVE 2; 8 – OKUNEVULUS I, GRAVE 12; 9 – KARASUK I, BURIAL GROUND 18, GRAVE 2; 10 – UIBAT I, GRAVE 10; 11 – SUKHOOZERO II, MOUND 81; 12 – SUKHOOZERO II, MOUND 81; 13 – SUKHOOZERO II, MOUND 81 (COPPER, BRONZE).

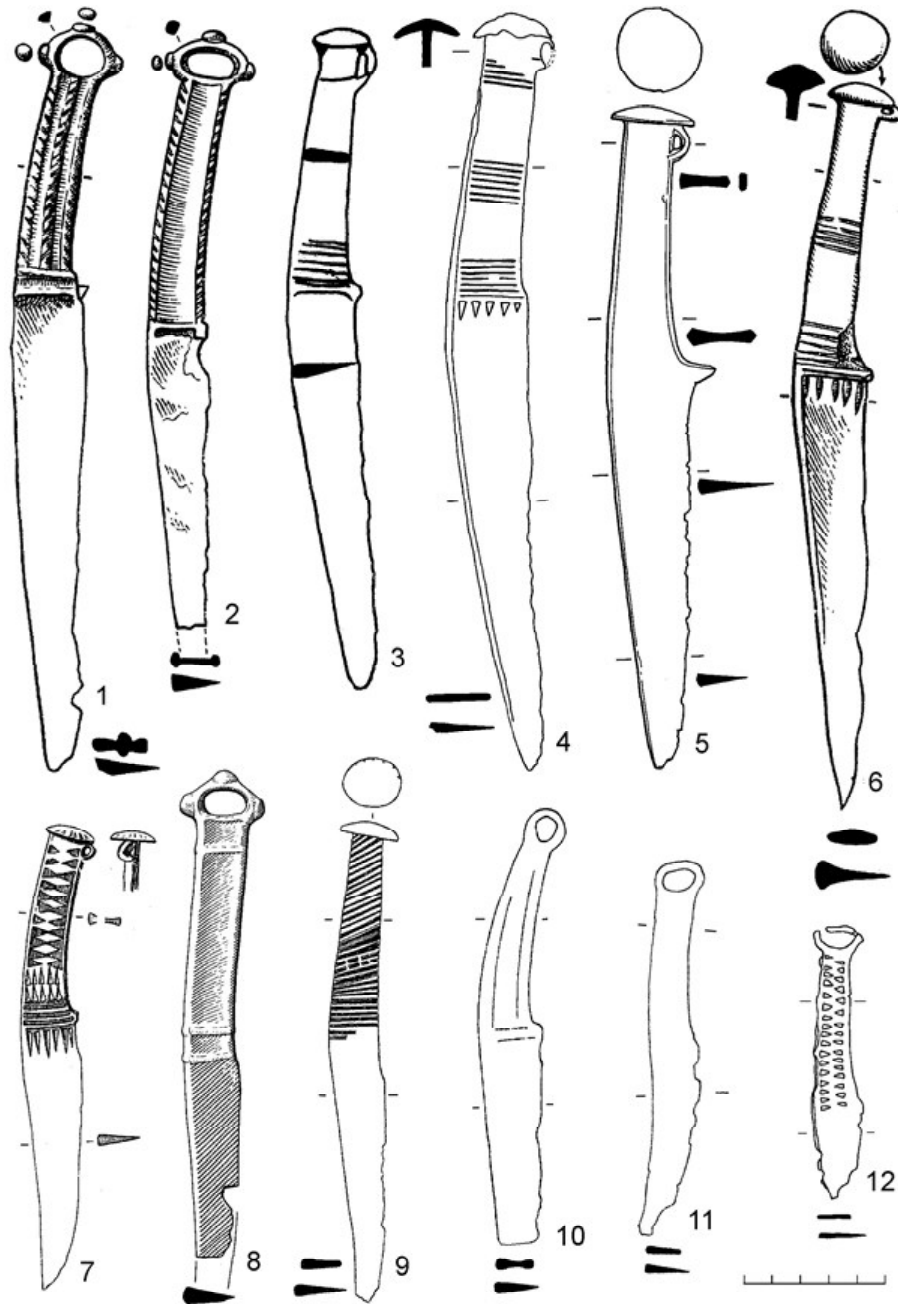


FIG. 2. KARASUK-LUGAVSKOE KNIVES : KNIVES OF GROUP II: 1 – BEYA, GRAVE 3; 2 – ABAKAN BURIALS 15-16; 3 – KHARA-KHAYA BURIAL 33; 4 – OKUNEVULUS II, GRAVE 2; 5 – KURGENNER I, MOUND 28, GRAVE 1; 6 – ABAKAN BURIAL 21; 7 – KAMENKA II, GRAVE ??; 8 – SUKHOOZERO II, MOUND 81; 9 – TERT-ABA, MOUND 18, GRAVE 1; 10 – TERT-ABA, MOUND 19; 11 – TERT-ABA, MOUND 22A; 12 – OKUNEVULUS I, GRAVE 9 (COPPER, BRONZE).

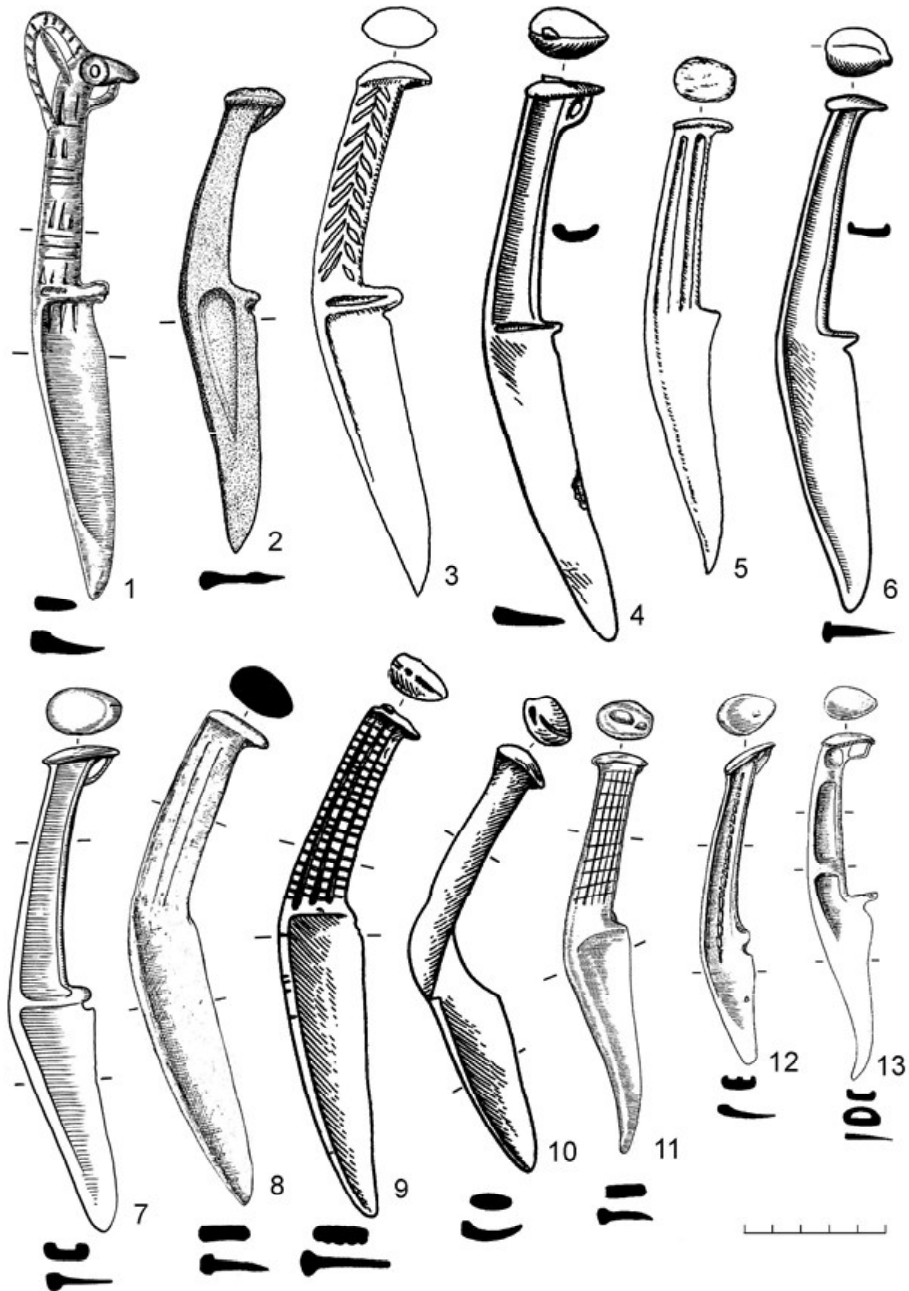


FIG. 3. KAMENNOLOZHSKY KNIVES: KNIVES OF GROUP III: 1, 2 – THE PODKUNIN MOUNTAINS, MOUND 1; 3 – BEYA MINE, MOUND 1; 4 – BEYA MINE, GRAVE 2; 5 – BEYA MINE, GRAVE 3; 6 – BEYA MINE, GRAVE 5; 7 – ARBAN I, GRAVE 60; 8 – USTINKINO, MOUND 8, GRAVE 1; 9 – FYODOROVULUS, GRAVE 10; 10 – FYODOROVULUS, GRAVE 7; 11 – UST-BYUR IV, MOUND 2, GRAVE 2; 12, 13 – UIBAT III, MOUND 81 (COPPER, BRONZE). (1914), MOUND 6; 14 – THE ILYA MOUNTAIN (COPPER, BRONZE).

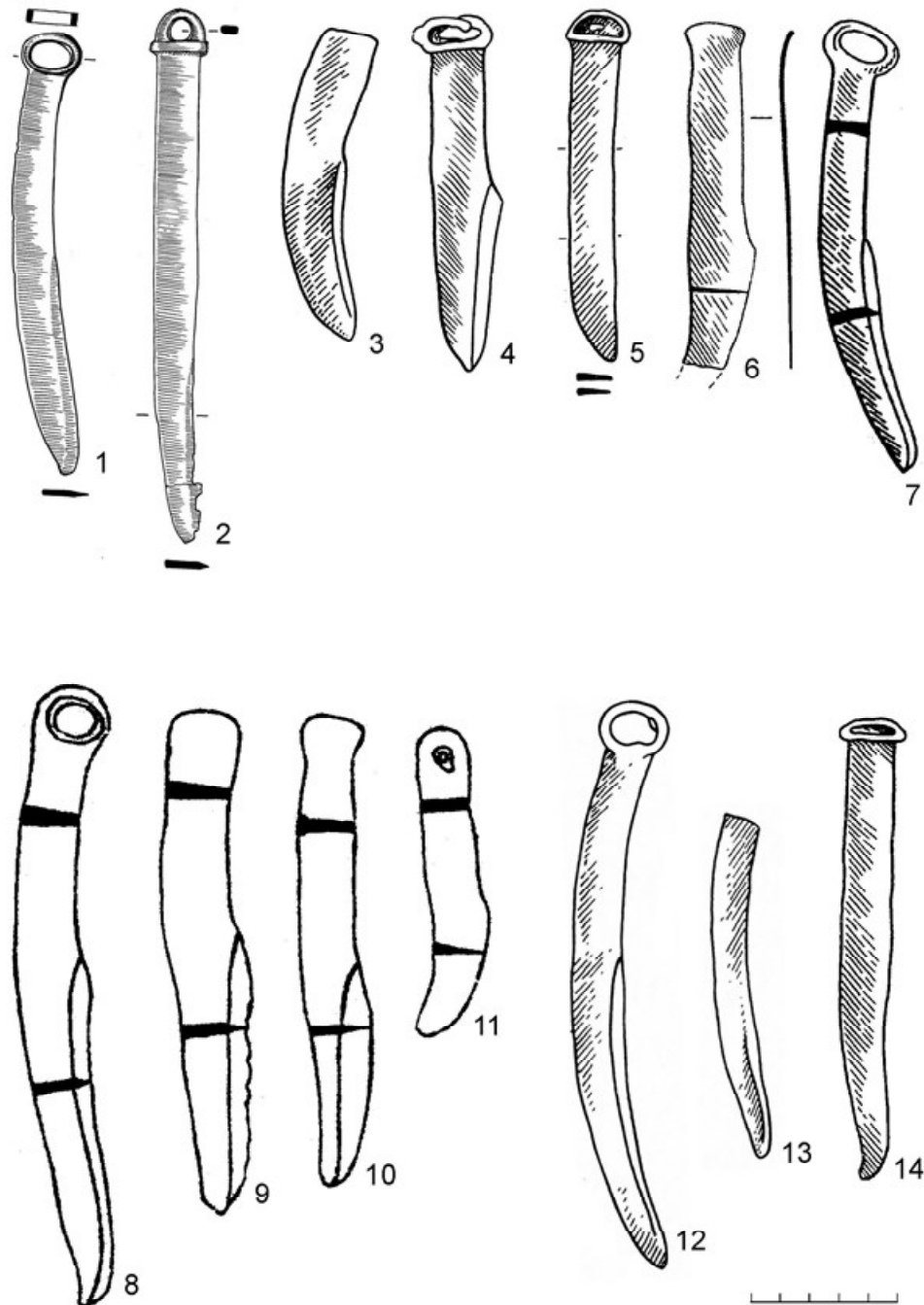


FIG. 4 - BAINOV KNIVES : KNIVES OF GROUP IV: 1 - BYRGANOV V, MOUND 6, GRAVE 1; 2 - BYRGANOV V, MOUND 1, GRAVE 3; 3 - BAINOVÜLUS, MOOUND 4; 4 - BAINOVÜLUS, MOUND 2; 5 - SAMOKHVAL, MOUND 9, GRAVE 2; 6 - MALYEKOPENY I, MOUND 2, GRAVE 3; 7 - KRIVAYA I, MOUND 4; 8-11 - EFREMKINO, MOUND 16, GRAVE 1; 12 - ASKIZ(1914), MOUND 3; 13 - ASKIZ

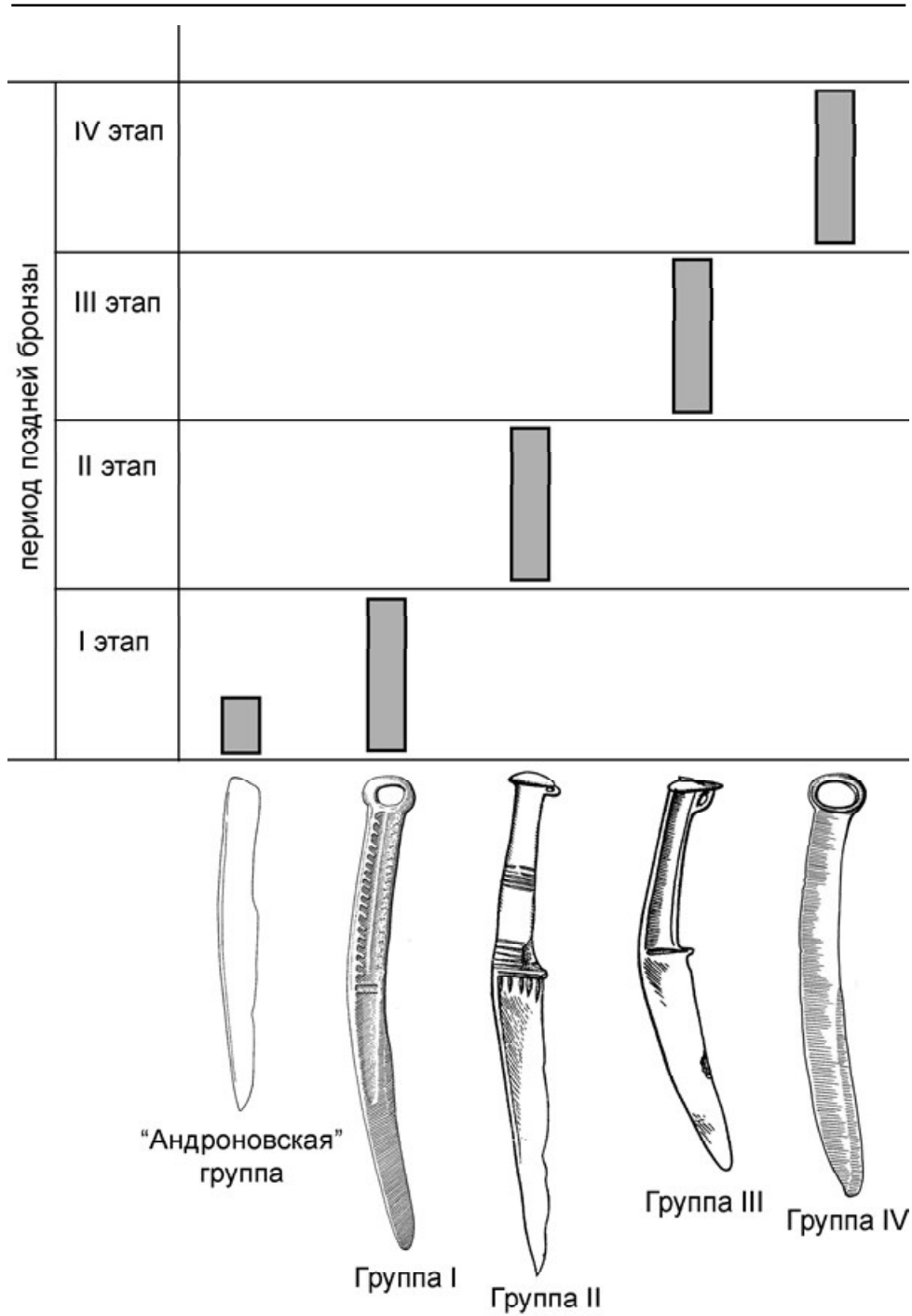


FIG. 5 - DIAGRAM OF THE CHRONOLOGICAL RELATIONSHIP OF DIFFERENT GROUPS OF KNIVES.

The presented division into groups is only the first step of a new stage of studying this category of artifacts. In the future, it is necessary to carry out a much more in-depth consideration of each of the groups separately in order to build typological schemes of development and search for their origins. At the same time, it will be possible to use materials from random finds, which will significantly expand the range of sources. A very narrow chronological position of each of the selected groups is of great importance, which will allow us to build horizontal ties in the vast territories of Central Asia in the future, relying on these iconic artifacts.

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MANIPULATIONS WITH SKULLS IN THE FUNERAL RITES OF OKUNEV CULTURE

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ABSTRACT

The article is devoted to the details of the funeral rite of Okunev culture, presented in the Early Bronze Age (the 24th–18th centuries BC) on the territory of the Middle Yenisei. Rare cases of placing people's individual skulls into the grave are considered. New data from the excavations of recent years are introduced into scientific discourse. Based on the sum of the materials, it is concluded that these skulls also belong to representatives of Okunev culture, probably relatives. Presumably, they were removed from graves for the re-burial. This rite is part of a broader practice of removing bodies of the buried. So far, all known cases relate exclusively to the Chernovskiy stage of Okunev culture.

Keywords: Early Bronze Age, Okunev culture, burials, manipulations with skulls, Minusinsk Basins

Okunev archaeological culture is an amazing phenomenon that developed on the territory of the Minusinsk Basins (Russian Federation) in the 24th–18th centuries BC (Polyakov, 2017; 2022. pp. 95-191). Researchers have repeatedly drawn attention to the fact that there are cases of manipulations with skulls in its funeral rite (Vadetskaya, 1980; 1986. pp. 37-39 No. 5, 18, 20, 21; 2003-2004. p. 16; Maksimenkov, 1980. p. 10). In several burials, including the remains of the buried themselves, additional skulls were found, which no bones of the postcranial skeleton were associated with. On this basis, E.B. Vadetskaya hypothesized the existence of the cult of a head among the ancient population of Okunev culture (Vadetskaya, 1980).

Previously, five similar cases were known: Abakan at the church;

Chernovaya VIII, mound 2, grave 3; Chernovaya VIII, mound 3, grave 4; Syda V, burial ground 3, grave 1; Lebyazhe (1975), grave 3 (Levasheva, 1975. p. 99; Maksimenkov, 1980. p. 5, Tables II – 9, Tables IV – 9, 10; Gryaznov, Komarova, 2006. p. 55, Table. 7; Vadetskaya, 2003-2004. P. 16, fig. V). Only the last of them can be considered a closed complex, which was not entered after the act of burial. The other four were disturbed to varying degrees; that significantly reduces the value of the information received. Additional skulls could not be in the burial initially, but could be brought into the grave at a later penetration into it. Moreover, in all these cases, the additional skulls were located at the top layer of the grave, and not at the bottom.

There is every reason to believe that there was the developed tradition of later additional burying into already existing graves in Okunev culture of the Minusinsk Basins. At the same time, remains of the previously buried people could be moved to the side or removed from a grave and transferred to another. The removing of individual skulls was only a particular manifestation of this tradition. We know the unique cases. For example, in the disturbed grave 1-a of mound 1 of Itkol I burial ground (a stone box 175 x 100 x 70 cm), complete skeletal frames, individual bones and skulls from 22 skeletons (8 adults, as well as 14 newborns and children) were found. At the bottom, in the “in situ” position, the bones of the pelvis, arms and legs of a 14-15-year-old teenager are registered. The remains of other skeletons were absolutely randomly located in the filling of the grave. Moreover, in the upper part of its filling, another grave 1-b was arranged, where there was an almost undisturbed skeletal frame also dated from Okunev culture.

Thus, all actions of additional burying and removing of bones in this grave were carried out during Okunev culture. All skeletons are preserved to varying degrees. There are complete skeletal frames and there are cases when 1-2 bones are missing in them. A skull with a lower jaw and a skull, which the bones of only one forearm correlate with, were found. Unfortunately, it is not yet possible to determine whether body parts were placed in the grave or the absence of some bones is explained by the fact

that during later additional burying the bones of previously buried people were removed from the grave.

Grave 1 of mound 13 of Itkol II burial ground has a similar situation, where almost complete postcranial skeletons of 3 adults and a newborn were in the filling of the grave (Polyakov, 2014. pp. 339, 342-343). In the same burial, a skull (B) without a lower jaw was found, which no other parts of the skeleton could be correlated with. In grave 2 of mound 22 of Itkol II burial ground, in addition to the skeletal remains of three adults, a separate skull of an 8-year-old child was found. Unfortunately, such cases do not allow us to identify whether an additional skull was placed from the beginning or it was brought into the grave during later penetrations.

The additional skulls, found in closed complexes, are much more informative and more important for understanding the essence of the rites performed. Previously, only one such case was known – Lebyazhe (1975), grave 3. In a 140 x 90 x 55 cm stone box made of vertically placed slabs, two skeletons of adults were laid head-to-toe (Fig. 1). Both were on their backs with bent and raised knees. There was a vessel and three human skulls without lower jaws on the feet of one of them. E.B. Vadetskaya notes that “... they were put only to one of the skeletons as things belonging to him personally.” (Vadetskaya, 1980. p. 110).

Over the course of research in recent years, two more cases of the presence of additional skulls in undisturbed graves have been recorded. In grave 6 of mound 3 of Itkol I burial ground (S.V. Morozov’s excavations 2007), a 25-30-year-old man and a 30-40-year-old woman’s paired burial (hereinafter N.I. Lazaretova’s definitions) was found, who were placed with their heads to the southwest. They were placed in the traditional pose – on their backs with their legs bent and with their knees raised up (Fig. 2; Fig. 4: 1, 2). Behind the man’s head, there was an accompanying inventory: a two-part horn harpoon, a tile-shaped whetstone and a small “iron”. In the area of the woman’s head, three polished auditory bones of an animal were found, which served as decorations, and a fragment of a vessel was found in the filling of the grave. 35-55-year-old men without lower jaws and the bones of a 13-14-year-old teenager were laid over her

feet. It is interesting to note that the teenager's skeleton is represented only by a skull with a lower jaw, pelvis, and long bones of arms and legs, which were folded in a neat pile, excluding their joints. Vertebrae, ribs, bones of hands and feet, as well as other small bones were missing. It can be assumed that they were in some kind of a bag, which was placed into the grave.

All four skulls in the grave have traces of parieto-occipital deformity, characteristic only for representatives of Okunev culture (Bonevolenskaya, Gromov, 1997). Following E.B. Vadetskaya, it can be noted that the man's skull and the teenager's bones were intended only for one buried person. Theoretically, it can be assumed that they are relatives of the buried woman. The teenager may be her previously deceased son, who was removed from the grave and reburied to his mother, and the skull of a 35-55-year-old man may represent someone from the older generation of this family (a father, a grandfather?).

The most interesting, in this case, is the fact of removing not only one skull of a teenager, but a complete postcranial skeleton. It follows that removing skulls from grave to grave is only a particular moment of the broader tradition of reburying the deceased. Perhaps, the real percentage of such removing is much higher than we think. In cases of the disturbed graves, which are noticeably predominant in Okunev culture, it is impossible to establish with certainty whether a displaced skeleton was at the bottom of a grave or was removed from another place.

Finally, the third case of a closed complex with additional skulls was recorded in grave 7 of mound 21 of Itkol II burial ground (A.V. Polyakov's excavations 2016). The burial of a 30-year-old woman was discovered (Fig. 3; Fig. 4: 3, 4) in a stone box (135 x 85 x 80 cm) with an undisturbed slab. Her chest and upper spine were completely destroyed as a result of the activity of burrowing animals. The woman was laid in the center of the box on her back with her knees bent and raised up. From the accompanying inventory, only a pendant from the drilled upper left second incisor of a wolf was found in the grave (A.K. Kasparov's definition).

In the grave, two additional skulls were placed on the bases on the

right and left at the shoulder level of the buried one. At the right shoulder of the buried woman, there was the skull of a 20-25-year-old woman without a lower jaw (skull A). It was located in a small niche, partially going under the wall of the box. When sinking, the plate came down right on it. At the right shoulder of the buried woman, there was a skull with a lower jaw of an 18-20-year-old woman (skull B). All three skulls, found in the grave, had parieto-occipital deformity characteristic of Okunev culture. The most interesting, in this case, is the location of additional skulls. Unlike other burials, where skulls and displaced bones were by legs, in the place where the inventory is usually placed; here they are located next to the buried woman. Perhaps, this implies their equal position in the grave.

It should be noted that the severely disturbed, but almost complete skeletons of three adults were found in one of the nearby graves of this mound (Itkol II burial ground, mound 22, grave 3). They did not have skulls, but all three lower jaws were found in the grave. This is hardly an accident. The skulls were deliberately taken out. Comparison with skull A (without a lower jaw) from grave 7 did not reveal their connection.

Penetration into the Okunev culture graves in order to take out a skull has been repeatedly recorded by archaeologists. For example, during the excavation of grave 12 of mound 3 of Chernovaya VIII burial ground, G.A. Maksimenkov discovered that the grave slab had been partially destroyed in the southern part, and only the skull had been taken out from the grave. The rest of the postcranial skeleton remained undisturbed (Maksimenkov, 1980. p. 6). I.P. Lazaretov noted an even more striking case during the excavation of grave 1 of mound 4 of Uibat V burial ground (Lazaretov, 1997. p.27). The postcranial skeleton bones of the woman remained undisturbed, and the skull was taken out so carefully that the temporal rings located to the left and right of it retained their original vertical position.

We know cases of complete removing of human remains from a burial. In grave 3 of burial mound 1 of Itkol I burial ground, despite the completely destroyed slab, a significant number of items of accompanying inventory, located in their places in accordance with the tradition, were found. There

are two temporal rings in the south-western part (by the heads), in the north-eastern (by the legs) - a vessel, a bronze needle case, a knife, and an awl. However, bones of the buried one are missing in the grave. Perhaps, his remains were removed from the grave for the purpose of reburial.

It is necessary to dwell on the cases of discovering ochre traces on skulls from the Okunevskaya culture burials. They are few and poorly studied. The main question facing the researchers is whether the paint was applied directly onto the skull or these are traces of coloring from faces of the buried (Miklashevich, 2003-2004. pp. 23-23). To date, it can be stated that there is not a single case of the discovery of additional skulls with ochre traces. Although, for example, in the already mentioned grave 1-a of mound 1 of Itkol I burial ground, three skulls with traces of coloring were found at once, but all of them had postcranial parts of a skeleton (Fig. 5). On this basis, the version about coloring faces of the buried looks preferable.

Thus, according to the available data, the following conclusions can be drawn:

1. Indeed, in Okunev culture, there was the tradition of placing additional skulls into graves. This can occur at various stages: either during the burial or later during the additional burying/other ritual actions associated with penetration into a grave.
2. Placing additional skulls into a grave is a special case of the more extensive tradition of removing bones of the buried from one grave to another. Perhaps, individual skulls were removed in cases when it was no longer possible to transfer a whole body.
3. In most cases, skulls were removed without lower jaws, that is, at a rather late stage of ligament decomposition. Consequently, it was skulls not heads that were transferred to a grave for reburial.
4. Based on the presence of a characteristic parieto-occipital deformity, it can be argued that these additional skulls belong to representatives of Okunev culture.
5. There are no traces of ochre coloring on additional skulls at the moment.

6. All currently recorded burials with additional skulls date back to the Chernov stage of Okunev culture. For earlier Uibat sites, this tradition has not yet been recorded.
7. If two or more people are buried in a grave, the additional skulls are planigraphically associated with only one of the deceased.

Based on the listed facts, it can be assumed that these actions are connected with attempts to “reunite” close people, probably relatives, in the other world. Considering the general scarcity of known cases (about 1% of the total number of graves), this practice should be considered exceptional. It did not seem to be of mass proportions.



**FIG. 1. LEBYAZHE BURIAL GROUND, GRAVE 3, EXCAVATIONS IN 1975.
VIEW FROM THE SOUTH-WEST.**

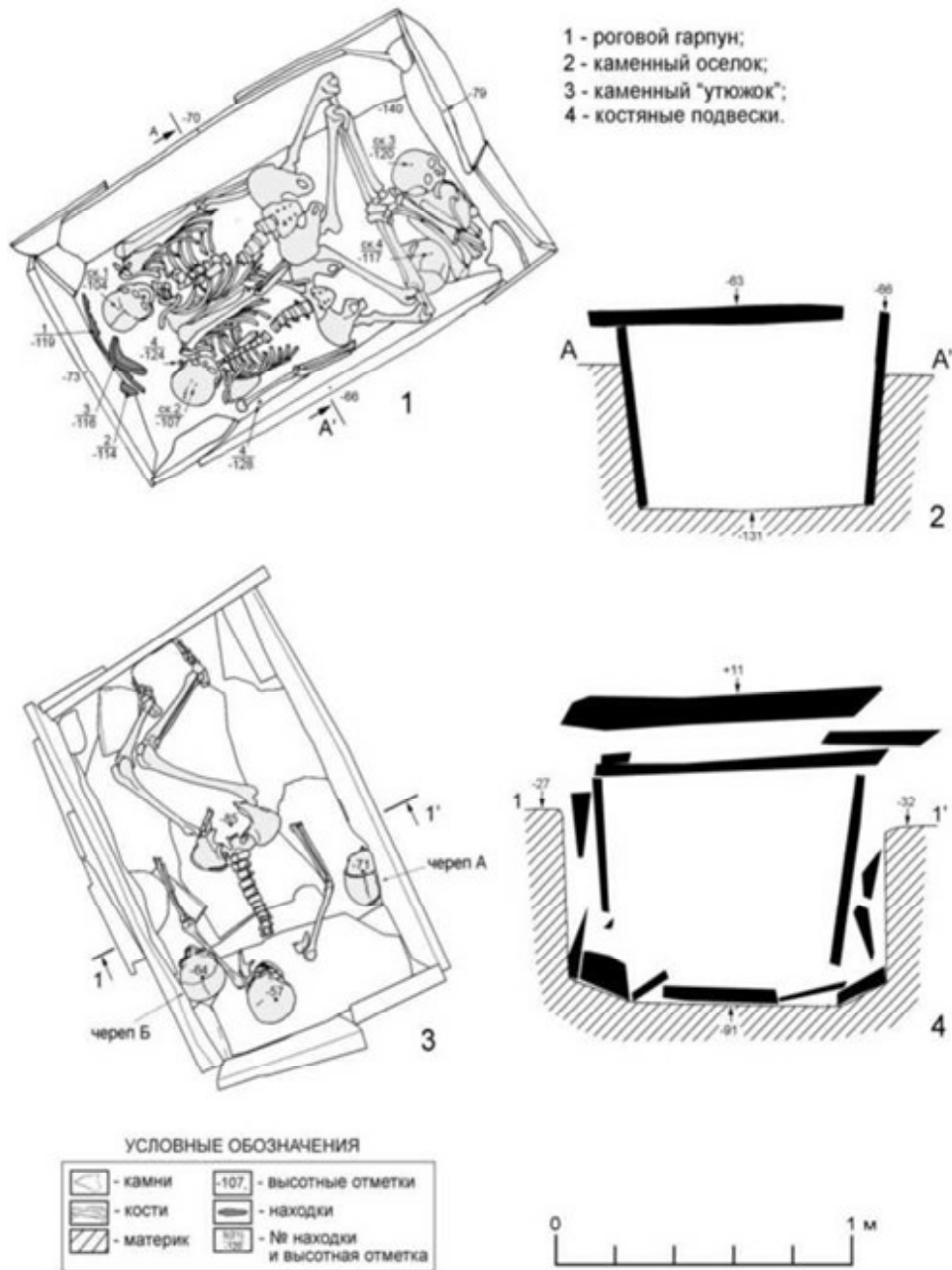


FIG. 2. ITKOL I BURIAL GROUND, MOUND 3, GRAVE 6. VIEW FROM THE SOUTH-EAST.



FIG. 3. ITKOL II BURIAL GROUND, MOUND 22, GRAVE 7. VIEW FROM THE NORTH-WEST.



FIG. 4. PLANS AND PROFILES OF GRAVE 6 OF MOUND 3 ITKOL I BURIAL GROUND (1, 2) AND GRAVE 7 OF MOUND 22 OF ITKOL II BURIAL GROUND.



FIG. 5. ITKOL I BURIAL GROUND, MOUND 1, GRAVE 1-A. A SKULL WITH TRACES OF PAINT.

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OKUNEV MASKS OF THE DZHOI TYPE ARE MARKERS OF ANCIENT PATHS¹

I.P. LAZARETOV

Among the amazing variety of styles and iconographic groups of Okunev anthropomorphic images, one specific and, moreover, quite rare kind of drawings stands out – masks of the Dzhoi type. The peculiarity of this group is in its special geographical localization, the technique of engraving images and features of their iconography. The absolute majority of the well-known Dzhoi style masks are concentrated on several rock outcrops located in remote mountain-taiga areas on the outskirts of the Khakass-Minusinsk Basin. These images are not applied with traditional engraving, as on other petroglyphs, but are made by ochre. The masks themselves are united by a combination of characteristic, easily recognizable artistic techniques: absence of a facial contour, multiple transverse lines parting at the ends, framing the mouth area with angle brackets.

The originality of the images of the Dzhoi group is considered by researchers in different ways, but almost everyone admits its relatively late age within the Okunev pictorial tradition. The basis for such dating was the undoubted typological similarity of Dzhoi masks with some anthropomorphic images on slabs from burial grounds Lebyazhe and Chernovaya VIII (Leontiev, 1978, p. 97; Leontiev, Kapelko, Esin, 2006, pp. 20-21; Savinov, 2006, p. 167). One would think the late date and the

1. The work was carried out with the support of the Program of Fundamental Research of the Presidium of the Russian Academy of Sciences “Historical and Cultural Heritage, and Spiritual Values of Russia”, the project “Formation of the Okunev Cultural Phenomenon”.

unusual geography of the “iconostases” themselves fit logically into the historical context known to us. Indeed, the Andronovo expansion, which developed in the direction from north to south, could well lead to the displacement of part of the Okunev population from the steppe regions to the mountainous taiga periphery of the Khakass-Minusinsk Basin. This assumption could theoretically explain both the strange localization and the progressive decline in the style of Okunev anthropomorphic images in the late period of their existence. However, the very first discovery of a Dzhoi type mask in the Okunev burial complex completely destroys this harmonious concept.

In 2009, during the study of the mound in the burial ground of Uibat-Charkov, several slabs with Okunev images were found, including a stone block with a perfectly preserved mask of the Dzhoi appearance depicted with red paint. The mound itself was a square fence, measuring 15 by 15 meters and made of flat slabs of gray granite, with its edge dug into the earth. The entire inner area was completely laid with massive blocks of stone. The central burial of the mound turned out to be decorated in the form of an extensive dirt pit with shoulder sections. Its depth from the level of the ancient surface was 4.3 meters. Another half dozen burials in dirt pits, pits with shoulder sections, catacombs and stone boxes were located around the original burial. Grave structures, features of the funeral rite and types of equipment do not allow us to doubt that this site belongs to the Uibat stage of Okunev culture, notably its early part.

The slab with the Dzhoi style mask is from the laying of the entrance pit of the catacomb of grave 6. There, it is used as a simple building material and installed in the burial with the image down. The ochre image is made on the end face of the stone block and partially goes on its side plane. According to Yu.N. Esin’s observation, the upper part of the mask, located on the side plane, was preserved noticeably worse than the lower one, drawn on a narrow face. Probably, the stone with the image, before its placement into the grave, was in the open air for some time. Then, it was located in a horizontal position and, possibly, represented the upper part of the rock basset edge on which the images were originally depicted. The

mask itself is three-eyed, with two additional little dashes-“eyebrows”, without a designated outline of a face. The transverse line parts at the outer ends, and the mouth is formed by two lines with similar forks-corners facing inward. Two arc-shaped lines extend upwards from the transverse line, separating the masks’ eyes from each other. The image is somewhat different from most of the “classic” images of the Dzhoi style, but it is still quite recognizable. In the same burial, and also in a reused state, another slab with an engraved Okunev mask was found. It almost exactly repeats the stele from the central burial mound 1 of Uibat V burial ground – absence of a contour, eyes with little dashes of “eyebrows”, a mouth, a horizontal stripe in place of a nose (Lazaretov, 1997, Table XI: 3). All these finds allow us to assert that both the first images, made in the Dzhoi style, and the masks of the Uibat type appear very early, even at the stage of formation of the Okunev pictorial tradition.

The earliest “iconostases” of the Dzhoi group of monuments is apparently the complex in Arbaty (Leontiev, 1978, p. 97). There is the same combination of mask variants in it as in the burial mound 1 of Uibat-Charkov burial ground: one image is similar in appearance to Uibat and Taskhazin samples, as well as several fairly simple Dzhoi type masks (Leontiev, Kapelko, Esin, 2006, p. 20, Fig. 6:1, 2, 4). Similar masks of early types are also present in other “iconostases”. According to them, the functioning of the Arbat petroglyphs and other mountain-taiga locations of Dzhoi style images began at the Uibat stage of Okunev culture, long before the Andronovo expansion. Their appearance on the periphery of the Khakass-Minusinsk Basin requires a different explanation, not associated with chronological reasons.

Another widespread interpretation of Dzhoi type images related to the semantic aspect of the approach to these monuments is not without flaws. There is an opinion that the Dzhoi style masks could reflect the coloring of the faces of participants in ritual actions, being a kind of “teaching aids” in places of collective prayers and initiation rites (Leontiev, 1969, p. 246, 247; Devlet, 1997, p. 245). Why, then, is concentration of images located in such remote and hard-to-reach places? Where did the

steppe Okunev cattle breeders get an irresistible predilection for extreme mountain tourism? So, in order to get to the Kundusuk “iconostasis” and participate in the colorful mystery, it was necessary to walk 120 kilometers upstream the stormy mountain-taiga Amyl River from the nearest settled place and then also to return back. This is an action, which is devoid of real motivation and any common sense.

The version about taiga hunters and fishermen’s involvement in the creation of “iconostases” also does not stand up to criticism. Firstly, the area in the upper reaches of the Amyl River is unsuitable for permanent human habitation due to the lack of stable food sources. Small groups of pine nut foragers or fur trappers could occasionally enter there, but even their stay could not be prolonged. It is doubtful that they regularly and in a certain place held collective prayers or were engaged in artistic creativity. Secondly, this assumption does not explain the amazing uniformity of Dzhoi type images. When comparing them, one cannot help but get the feeling that the images of all the “iconostases”, hundreds of kilometers away from each other, are stenciled. To achieve such uniformity, the people, who created them, had to be in direct contact with each other. Meanwhile, the Kundusuk “iconostasis” and the Dzhoi rock outcrop closest to it are separated along the east-west line by over 200 kilometers of impassable mountainous taiga. It was almost impossible to overcome them, since all the rivers, along which people could only move, flow in this area in a general direction from south to north.

We believe the answer to this riddle is contained in one of the first scientific papers devoted to images of the Dzhoi group. When publishing the images of the Kundusuk “iconostasis”, N.V. Leontiev mentioned that these paintings “are located closely to the path, which connects the eastern regions of the Minusinsk Basin with the Todzhu Basin of Tuva” and referred to M.A. Kastren, who considered this path very ancient (Leontiev, 1969, p. 248). And this path gets started at the mouth of the Tuba River, at its confluence with the Yenisei River! It was there, in 1969, that Ya.A. Sher discovered another Okunev petroglyphs with Dzhoi type images (Ust-Tuba VI according to E.B. Vadetskaya). The Arbat “iconostasis”

marks the beginning of the mountain-taiga section of another path, also leading from the Minusinsk Basin to Tuva, but to its western part. It passed along the rivers Abakan, Malye Arbaty, Dzhebash, Urten, Aksayak, to the Kantegir and beyond. On the Kantegir, at the mouth of the Aksayak, before Tuva became part of the Russian Federation, there was a stationary border outpost that controlled the passage along this path. The same outpost existed in the upper reaches of the Amyl, near the source of the Us River. Both paths - western and eastern - were actively used until the construction of the modern Us and Abaza highroads. And the last known "iconostas", located at the mouth of the Dzhoi River, is also located on the way from the Minusinsk Basin to Tuva. This route passed along the Yenisei, through the Sayan Canyon. One could pass it along only in the winter, on the ice of the river. Hence, all four largest clusters of the Dzhoi type images are confined to the ancient paths connecting the regions of the Middle and Upper Yenisei.

The realization of this fact allows us to explain the striking similarity of the drawings of all the "iconostases" separated by hundreds of kilometers of impassable taiga. This is not surprising, considering that representatives of the same group of people (in this case the Okunevs), who lived in the area of the modern town of Abakan, could choose any of the three abovementioned routes. In summer, it was possible to get to Eastern Tuva along the Tuba and the Amyl rivers, or to go to Western Tuva along the Abakan and small rivers. In winter, when the mountain passes were closed, there was a path on the ice of the Yenisei. Having got to Tuva along one of the paths, a person had the opportunity to return back by another route, to visit several "iconostases" during such a trip at once and to leave their own drawings on them. In the same context, it becomes clear why the Dzhoi type masks were applied on natural rock outcrops, and not on stone steles; and they were executed by ochre, not carved. A person going on a long taiga hike will not carry tools for processing stone and will not waste precious time to create monumental patterns. To embody the idea, it was enough for him to have a minimum supply of paint, a few minutes and a suitable rock surface located next to the path.

But what about the Okunev images of the Dzhoi style carved on the steles? All of them are found in the steppe foothill zone, in places of permanent residence of large groups of people. There, it was possible to make and install such steles without much haste. They mark large and small paths as well. Three of the six steles known to us with the Dzhoi type masks are localized in the area of the mouth of the Askiz River, at its confluence with the Abakan River (Leontiev, Kapelko, Esin, 2006, No. 14, 215, 284). Having got up the Askiz River and overcome the pass, you get to the upper reaches of the Tom River and then to the Kemerovo Region. It is the route, where the modern railway, connecting Abakan and Novokuznetsk, passes. The mound of Uibat-Charkov burial ground, in which an early mask of the Dzhoi type was found, is located on the bank of the Uibat River, at the place where it runs from the mountainous zone into the open steppe. Moving up the Uibat River, you can get to the Terensug River - another major tributary of the Tom River. It turns out that both of these paths, connecting the Minusinsk and the Kuznetsk Basins, have been known since ancient times and actively functioned already in the Early Bronze Age.

It is doubtful that people, who made such long transitions in the extreme conditions of mountainous taiga, had the strength and desire to create "training manuals" that transmit the subtleties of ritual makeup to future generations. Most likely, prayers and sacrifices were performed at the places, where steles with Dzhoi type masks were installed, as well as near the rock "iconostases", with the aim of obtaining the favor of higher powers for a particular campaign. The minimal variability and solidity of the Dzhoi style images, combined with their widest possible geography, suggests that they were dedicated not to some local spirits of a particular area, mountain or river, but to some single deity patronizing travelers and merchants. This image has undergone the most minimal changes over several centuries of the existence of the Okunev artistic tradition. Its development, like other Okunev deities, mainly followed the line of aestheticization and multiple duplication of already known pictorial elements. Over time, the masks acquired an increasingly fantastic and

pretentious appearance due to this.

The recognition of the hypothesis about the conjugation of the Dzhoi type masks and ancient trade routes opens up new opportunities for further purposeful search of them. Rock outcrops, located in the upper reaches of small rivers near the mountain passes of the Western Sayan and Kuznetsk Alatau, may be particularly promising in this regard.

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**D.G. MESSERSCHMIDT'S DRAWINGS OF
"THE STATUE OF ULUG KHURTUYAKHTAS" AND
"THE STATUE OF KHYS'TAS" (1722)
FROM THE VICINITY OF UST-YES**

M.P. CHEBODAEVA

One of the interesting issues in the study of the German scientist D. G. Messerschmidt's legacy at the present stage was that for many decades it was unknown how many authentic drawings from the Siberian expedition (1719-1727) have survived to the present time. For many years it was believed that the author of the drawings was Karl Schulmann, a Swedish young man of 15-16 years old, but this turned out to be not entirely correct because the drawings in the scientist's diaries are dated August 18, September 26 and October 3, 1722. But by this time his companions Karl Schulmann and P. J. Tabbert had left the expedition and there were D. G. Messerschmidt, servant Peter Kranz, cook Andrei Gesler, two Russian orderlies and a boy Ivan Putintsev in it.

When studying D. G. Messerschmidt Foundation in the Archive of the Russian Academy of Sciences in Saint Petersburg, I found 8 original drawings in the scientist's diary, which are dated August 18, September 26 and October 3, 1722: "The Statue of KhysTas"(1722) (Fig. 1), four drawings "Tombstone in Yest-Tyoya" (1722) and "The Statue of Khurtuyakh" (Fig. 2), which were made by D. G. Messerschmidt himself in the vicinity of Askiz and Ust-Yes villages. Presumably, 2 of 8 drawings were made by K. G. Schulmann—"Town Wall" and "Painted Stone" in the vicinity of Abakansk. These 8 drawings were published for the first

time in D. G. Messerschmidt's book *Forschungsreisedurch Sibirien 1720-1727* in the German language in 1962-1968 in Berlin.

At the beginning of April 1718, Messerschmidt arrived at the invitation of Peter the Great in Saint Petersburg to assemble collections and research the natural resources of Russia. The scientist had a good education, encyclopedic knowledge, was a doctor and a naturalist, a talented draughtsman and a philologist who knew Oriental languages.

On November 5, 1718, after a conversation between Peter the Great and Messerschmidt, the Tsar enacted the decree on sending Dr. Messerschmidt to Siberia "to search for all sorts of rarities and apothecary things: herbs, flowers, roots, seeds and other species for medicinal compositions". The materials, collected during the expedition, were to be delivered to the Medical Office. Messerschmidt's expedition did not have a planned route and travel instructions, as well as the established duration of stay in Siberia.

Swedish captured officers joined Messerschmidt in Tobolsk: Captain P. J. Tabbert (Strahlenberg), non-commissioned officer D. Kappel, a pupil of Captain Vrekh's School, Karl-Gustav Schulmann, translator Peter Kranz, cook Andrei Gesler, two Russian orderlies and a Russian 14-year-old boy Ivan Putintsev.

On March 1, 1721, the expedition left Tobolsk for Tomsk. They rode for 9-10 hours a day, stopping only for overnight accommodation and for feeding horses in Russian and Tatar villages. In Tomsk, the local governor Vasily Yelizarovich Kozlov told Messerschmidt about the sites of antiquity - a stone ram brought from Abakansk to Krasnoyarsk and a stone statue of a man located 7-8 versts from Krasnoyarsk, which aroused genuine interest in the scientist.

On July 5, 1721, the expedition from Tomsk went to Kuznetsk; arrived in Kuznetsk on July 30 (the author's note: the road took 25 days). From there they intended to get to the Abakan osrtog through the mountains of the Kuznetsk Alatau and the Uibat steppe. And on August 9, the expedition went to Balyksavia small Tatar canoes along the Tom River. From there, they rode through the mountains and the Uibat steppe to the Abakan

ostrog, where they arrived on September 12, 1721.

Messerschmidt stayed in Abakansk (the Abakan ostrog) for more than 5 months. All his attention was focused on the study of archaeological sites and the purchase of objects from burial grounds, and he also conducted the first archaeological excavations of burial mounds in Russia.

The scientist's companions Philip Tabbert and Carl Gustav Schulmann stayed with Messerschmidt until May 1722, when, after the conclusion of the Peace of Nishtad, they left for Tobolsk and then for Saint Petersburg and Sweden.

On August 21, 1722, the entry about "the Statue of Ulug Khurtuyakh Tas", located near Ankhakovulus (village), appears in D. G. Messerschmidt's diary. It said: "Very close to these grave mounds, finally, after 1 hour of riding through hilly and bare steppes, I reached the statue of Khurtuyakh, very famous among these peoples. I sketched it and attached the drawing here. It is made of gray sandstone and is obliquely dug into the ground. A thick braid hung on the back; Kalmyk and Tatar women still wear their hair a similar braid out of habit. I did not notice any inscription. The pagan Tatars from Yest-Beltir, who supplied me with horses, made many bows in front of her, and each of them rode around her three times, after such a ceremony, they also put food in front of her or on a pedestal on the grass as a sacrifice so that she could satisfy her hunger with it" (Messerschmidt, 2012, pp. 132-133).

In 1727, Messerschmidt came back to Saint Petersburg from a scientific trip, having spent there 8 years, which became exceptional in the breadth of the tasks he set and in the mass of the material he brought. But the scientist could not and did not have enough time to process the assembled collections. Messerschmitt died in Saint Petersburg on March 25, 1735. Part of his scientific library was bought by the Academy of Sciences, part was brought to Moscow University, but most of the materials and collections of the scientist was lost during the fire in the building of the Kunstkamera Museum in 1747.

Thus, currently there are only 8 original drawings of the scientist in the Archive of the Russian Academy of Sciences in Saint Petersburg; 6 of

which were made by Messerschmidt himself and 2 presumably made by draftsman K. G. Schulmann. And it is safe to say that Messerschmitt's drawings became the earliest pictorial material made in the Khakass-Minusinsk region during his journey through Siberia. And D. G. Messerschmidt himself became the first artist who captured the Okunev culture sites of the Bronze Age "The Statue of Ulug Khurtuyakh Tas" and "The Statue of KhysTas" in the 20s of the 18th century.



FIG. 1. "THE STATUE OF KHYS TAS". 1722. 13.5x10.0. PAPER, INK.
THE ARCHIVE OF THE RUSSIAN ACADEMY OF SCIENCES (SAINT PETERSBURG).



FIG. 2. "THE STATUE OF ULUGKHURTUYAKHTAS". 1722. 21.0x9.5. PAPER, INK.
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TREPANATIONS AS A FEATURE OF THE FUNERARY TRADITION
IN THE LATE OKUNEV PERIOD: THE
TRACEOLOGICAL STUDY OF ANTHROPOLOGICAL
MATERIALS FROM ITKOL II BURIAL GROUND

N.I. LAZARETOVA AND A.A. MALYUTINA

The work was carried out within the Program of Fundamental Scientific Research of the State Academy of Sciences on the topics of state assignment No. FMZF-2022-0014 “Steppe pastoral cultures, sedentary farmers and urban civilizations of Northern Eurasia in the Eneolithic Age – the Late Iron Age (sources, interactions, chronology)” and No. FMZF-2022-0012 “The oldest inhabitants of Northern Eurasia: human settlement in the Stone Age, production technologies”

Archaeologists first encountered skulls of the Early Bronze Age with traces of postmortem trepanation as early as in 1973 during excavation of the Okunev culture mound, Razliv X (Pshenitsyna, Pyatkin, 1993; Pshenitsyna, Pyatkin, 2006). For a long time, this complex remained the only one of its kind, despite the fact that the total number of studied Okunev objects had already numbered dozens in those years. Only in 1999, during excavation of another single burial mound Chernovaya XI, Okunev skulls with traces of postmortem trepanation were also found. Unfortunately, this circumstance was not reflected in the publication on materials of the site and was neglected by most researchers (Leontev, 2001). Based on the stylistics of artistic images, both of these complexes were included by D.G. Savinov in the composition of the late, Razliv stage of Okunev culture (Savinov, 2005).

Later, a massive postmortem trepanation of skulls was recorded by A.V. Polyakov during excavation of mound 1 in Itkol II burial ground. It is this bright, qualitative feature of the funeral rite that today makes it possible to accurately determine the belonging of these complexes to the latest, Razliv chronological horizon of Okunev culture. As additional criteria for distinguishing them to a special group, we can note the isolated location of such mounds as part of burial grounds, a free layout of burials inside fences, numerous additional burials in already existing graves, the presence of ritual objects in the almost complete absence of household items, a lot of burials without inventory, a special artistic style (Lazaretov, 2019). The relatively late age of the complexes of the Razliv chronological horizon within the 19th-18th centuries BC is also indicated by the available radiocarbon dates (Polyakov, 2022, pp. 188-189).

The purpose of this article is to introduce into scientific discourse the results of the study of defects identified on the skulls buried from Itkol II craniological collection belonging to the Razliv chronological horizon.

Anthropological materials from Itkul II burial ground, mound 1 are represented by 51 individuals, including 20 adults and 31 children. However, skulls and their fragments of varying preservation degree were available for study by traceological methods only in 20 skeletons, of which 14 were children and adolescents. It is possible to reliably speak about the absence of trepanations only in two cases: of a buried woman over 55 years of age from *grave 5* and a buried man (?) over 55 years of age from *grave 10*. The holes of artificial origin were found on the remaining skulls (Fig. 1). For the detailed analysis of these cases, a visual examination within the framework of the method of traceological analysis and photo fixation of macroscopic traces of intentional damage to the cranial vault were carried out. The holes were described in all parameters, including the method of performing trepanation, location, size, shape, and lack of healing. We made an attempt to determine the method and reasons for making operations recorded on bone remains. In five cases, trepanation in the occipital bone is questionable, the condition of the bone tissue does not allow us to speak confidently about its presence. However, the presence

of a hole in the occipital region suggests a possible artificial nature of the integrity damage of the cranial vault.

The traceological examination of trepanation traces revealed signs characterizing both the methods of performing this operation and the state of bone tissue at the time of its processing. The analysis of the whole set of observations showed that trepanning was performed postmortem with a very fresh state of bone tissue and, most likely, without total removal of soft tissues. At the time of the trepanation, the head was fixed downwards with the front part. Then the bone was pierced by an adze-shaped tool with a grooved blade. The contour of a hole was outlined and set from one blow. The contour of a hole was almost completely punctured, with a partial break along the bottom edge of a hole. The beginning of the process of creating a trepanation hole is characterized by a direct cut of the bone. As the trepanation expanded, cutting with the pressing of the inner surface of the cranial bone with the formation of cleavage facets was performed. Terraced fractures were noted in one case, there are burrs and separation of bone tissue along the plane of the trace, which indicates the plastic state of the bone at the time of the operation. There are no traces on the inner cavity of the skull. The general contour of trepanations is characterized by rounded or oblong outlines. There were no traces of soft tissue cutting on the surface of the cranial bones. The exception is a buried teenager of 12-13 years from grave 17, who has thin traces in the form of cuts perpendicular to the edge of a hole. It is recorded that this individual had two parallel knife cuts on the 7th cervical vertebra along the spinous process on both sides, which also indicates manipulations with soft tissues.

The main instrument for trepanning was an adze-shaped tool with a grooved blade. In few cases, the use of a knife was noted, which can be interpreted as additional cutting of the detached fragment of the skull bone at the time of its breaking (Fig. 2). Sometimes, we can also observe the use of a tool with a straight massive blade (grave 16, skeleton 1). In the latter case, on one side of a hole there is a deep trace - a notch without through penetration into the vault of the skull. The sides of the notch are

torn, with the separation of flakes on the outer plane of the cranial bone. A crack goes from the notch - a consequence of an intense blow. It can be assumed that when the fragment of the skull was separated, some part remained together with soft tissues and a more massive chopping tool was used to remove them.

The combination of tools with different blades when creating a trepanation hole is clearly visible on the skulls from Razliv X. This work was carried out in the funds of N.M. Martyanov Minusinsk Regional Museum of Local Lore, where anthropological materials from Chernovaya XI burial ground, which also belongs to the Razliv stage, were examined. All the buried from Okunev graves had trepanation on their skulls in the occipital part.

The simultaneous presence of occipital-parietal deformity of a skull with a low pole of the occiput, absolutely identical to Chernovaya ones, and the integrity damage of a cranial vault, notably only in the occipital part, sometimes with the use of the occipital suture, even visually allow us to determine unmistakably the skull's belonging to the Razliv chronological horizon of Okunev culture.

The sudden appearance of such an uncharacteristic ritual for the Okunev people is a reflection of one of the aspects of the rich spiritual world and raises the question of the causes and origins of this rite. Undoubtedly, the almost total trepanning of skulls, including children of different ages, including infants, indicates the idea of the Razliv people about belonging to their own group. Obviously, the procedure was performed by "a specialist in the sacred field", well acquainted with anatomy. Only the occipital bone was always trepanned, only sometimes the edge of a hole affects the right parietal bone. The integrity damage of a cranial vault is usually registered either in the center of the occipital bone, or slightly shifted to the right. This means that the ritual manipulation was performed by a right-handed person. Only in one case – of a buried from Razliv X (grave 1, skull B) - a trepanation hole tends to the left, however, due to its preservation, it is impossible to determine its size and right arc.

The discovery of burials of the Razliv chronological horizon in the Ust-Kamyshta-1 burial ground, studied by the South Siberian Branch of the Institute for the History of Material Culture of the Russian Academy of Sciences in the south of Khakassia in 2022, allow us to speak about the presence of trepanations among the Okunev people as a chronological marker. In this case, we are talking about a buried man of 35-45 years old and a child of 5-6 years old, who have manipulations associated with a violation of the integrity of the cranial vault in the occipital region.

S.I. Kruts in his works writes about occipital trepanations on the territory of the Black Sea Region in the Late Catacomb time as an ordinary phenomenon (Kruts, 2017, pp.75-78). However, unfortunately, publications on anthropology do not contain designations of specific sites with trepanned skulls of the Catacomb Period. According to T.A. Kopyova's work "Catacomb culture on the territory of the Crimean Peninsula" – such burials are found in the Sivash Region in the Late Catacomb Period, where along with this, painting of the bottom of chambers, decorating a bed with various patterns and paintings are recorded. Here we can also draw an analogy with the painted tiles from graves of the Razliv chronological horizon. Similar manipulations with skulls are of more interest since with a huge territorial distance these two groups of complexes - the Late Catacomb and the Late Okunev (Razliv) - turn out to be almost synchronous. Moreover, this custom appears massively and suddenly among the Okunev people.

In the complexes of the preceding Chernovaya chronological horizon, we do not know of a single reliable skull with traces of trepanation. What is the reason for the appearance and spread of this phenomenon remains a mystery. Its solution requires the involvement of additional materials.



FIG. 1 TREPANATION IN THE OCCIPITAL BONE ITKOL 2, MOUND 1, GRAVE 4, SKELETON 2 (PHOTO: N.I. LAZARETOVA).



FIG. 2 ITKOL 2-17, MOUND 1, GRAVE 9, SKELETON 3. No. 9 - PHOTO 2 - GENERAL VIEW OF THE FLAKE ON THE INNER PLANE OF THE SKULL AND CUTS FROM SCRAPING (PHOTO: A.A. MALYUTINA)

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**ON THE 300TH ANNIVERSARY OF
D.G. MESSERSCHMIDT'S EXPEDITION TO SOUTH SIBERIA**

V.N. TUGUZHEKOVA

The most important stage of Siberian research and discoveries started. Peter the Great put a lot of effort into organizing the study of Siberia. On his initiative, many foreigners were involved in scientific activities, primarily Daniel Gottlieb Messerschmidt, a Doctor from Danzig, who, on Professor I.F. Brain's recommendation, was invited to Russia. In December 1717, Peter the Great invited Messerschmidt to Russia. And at the beginning of April 1718 Messerschmidt arrived. On November 15, 1718, Peter the Great issued a decree on sending Dr. Messerschmidt to an expedition to Siberia.

In 2021, it was the 300th Anniversary of D.G. Messerschmidt's Expedition through the territory of South Siberia, on the territory of modern Khakassia. It was he who conducted the first archaeological excavations here in January 1722. In the Republic of Khakassia, 2022 was declared the Year of Archaeology, dedicated to the first excavations in Siberia. D.G. Messerschmidt played an important role in the study of Siberia. According to V.P. Vernadsky, Messerschmidt's travels "gave start to the scientific study of Russia; he is the founder of that great collective scientific work, which has been continuously and successively continued since 1717 to the present day, growing more both in its strength and in the breadth of captured interests". Having left Saint Petersburg in 1717, he returned from his trip back to Saint Petersburg only eight years later.

D.G. Messerschmidt traveled through Siberia from 1720 to 1727. He traveled from the Urals to Northern Mongolia and from the Sayan

Mountains to the Lower Ob. It should be noted that Messerschmidt, on his own initiative, included research in the field of geography, history, archeology and ethnography into his work plan in addition to the study of the animal and plant world. He showed particular interest in the peoples living in Siberia – their way of life, occupations, rituals and customs.

D.G. Messerschmidt systematically gathered ethnographic material, compiling a collection of various household items of the peoples in Siberia and making sketches. At his own expense, he assembled a rich collection of clothes, weapons, cult items of the Buryats, Khakass, Evenks (Tungus) and Khants (Ostyaks). On his return to Saint Petersburg, the traveler handed over this collection to the Kunstkamera Museum of the Academy of Sciences.

The result of seven years of work in Siberia is his diary. The handwritten text of the diary has a different title than the two volumes of the diary published in German in the 1960s. The scientist's handwritten diary consists of five notebooks containing 1,599 sheets of finely written text on both sides. The diary begins on March 1, 1721, from the moment of Messerschmidt's departure from Tobolsk to Tomsk, and ends on December 31, 1726 in Vyatka.

An attempt to publish Messerschmidt's diary was made in 1935 by the Institute of Ethnography of the USSR Academy of Sciences, but the volume translated for this purpose was not published and still lies in the Archive of the Kunstkamera Museum.

P. S. Pallas published material from the diary in the 18th century, and V.V. Radlov published excerpts on archaeology in the 19th century. In the 1960s, jointly with the USSR Academy of Sciences (the Institute of Natural Sciences and Technology), the Berlin Academy of Sciences published two volumes of the diary in German.

It should be noted that D.G. Messerschmidt's diary attracted the attention of scientists working in the field of botany, zoology, archaeology, mineralogy; at the same time, ethnographers rarely referred to it and did not use the materials in it (the exception is G.M. Vasilevich's article on the significance of the scientist's diary for Tungusic studies, which appeared

after the publication of the 1st volume of the diary). Thus, Messerschmidt's activity as an ethnographer was not the subject of special research. Meanwhile, this material was new and interesting not only in the 18th century, but even now it deserves the closest attention, being the primary source of our information about the peoples in Siberia. In the first volume of the diary, the entries were first kept by P.J. Tabbert, and after his departure from Siberia in 1722, D.G. Messerschmidt continued to write by himself.

D.G. Messerschmidt and his companions arrived in Tomsk on March 30, 1721, and on July 5, leaving Tabbert (Strahlenberg) in Tomsk, he set off along the Abakan ostrog (a stockaded town). Sailing 3 strugs (a type of flat-bottomed boat) along the Tom River, he came to Kuznetsk and a few days later continued his way to the mouth of the Balyksa River. From here, riding 14 horses, the expedition went through the Tom, mountains and the Terensa River to the upper reaches of the Uibat and by September 6 reached its mouth. Having back to the boats, Messerschmidt and his companions went down the Abakan and the Yenisei for a week and arrived at the Abakan ostrog on September 12. In the valley of the Uibat River, the expedition discovered a large number of ancient burial mounds, including original steles with sculptural images and fantastic masks. "One of the steles with a mask was covered with an unknown inscription, very similar to the Germanic runes. Later, in the winter of 1722, in the northeastern part of Khakassia, in the interstream area of the Tes and the Yerba, another inscription was found – on the stele of a stone statue... Both monuments have been kept in the Minusinsk Museum since the end of the 19th century".

Later, S.E. Malov in his book "Monuments of Old Turkic writing" wrote that the first data on the monuments of the Turkic runic script appeared since the reign of Peter the Great. The first information about these monuments was reported by the serviceman Remezov. Later, details about these monuments are found in works of Messerschmidt and Strahlenberg. So, the monuments with runic writings, found by D.G. Messerschmidt, marked the beginning of the study of the Turkic runic script.

Messerschmidt had three assistants at the beginning of the expedition: translator P.M. Kranz, draftsman K.G. Schulmann and P.J. Tabbert. Tabbert was left by Messerschmidt in Tomsk, where he worked a lot: he kept the diary, collected materials on geography, ethnography, history, archaeology, folk medicine in the vicinity of Tomsk. Tabbert was also engaged in cartography, continuously supplementing and correcting the map of Siberia compiled in Tobolsk. On November 4, 1721, he wrote in his diary: "I am working on the map every day and received good information from a Cossack from Kuznetsk". After calling D.G. Messerschmidt on November 29, Strahlenberg departed on 6 sleighs to him, to the Abakan ostrog, accompanied by 2 orderlies and 3 serving Cossacks. On December 2, he arrived in Burnashevo village, through which "the Krasnoyarsk and Abakan Road" ran. Heavy snow and blizzards forced Tabbert to turn abruptly to the north from the usual road along the Yaya River and to go down to the Chulym River. Following its left bank, on December 5, he arrived in Zyryanskoe village near the Kiya River. Strahlenberg reached the former well-traveled road three days later, going up the Kiya to the Tesin River. Then, having reached the Sert River, he got to the Big Russian/God's Lake by the steppe, through the Uryur and Beresh rivers, and, following along the Chyornylyus and the Chulym, on December 19, he left for the Yenisei near Novoselovo village. Going up on the ice of the Yenisei, he arrived in the Abakan ostrog on December 22 late in the evening.

In January 1722, D.G. Messerschmidt and P.I. Strahlenberg excavated a burial mound of the early Iron Age for scientific and educational purposes on the bank of the Yenisei for the first time in Siberia. Artist K.G. Schulmann made a drawing of the excavated grave. The scientists' purpose was to find out how these pagans arranged their graves in the old days. D.G. Messerschmidt sought to purchase things from "black diggers". There were silver bowls, belt buckles, harness decorations and other things among the finds he encountered. One black digger offered him to buy "a beautiful grave silver, gilded cup with leaves exquisitely carved on it", but D.G. Messerschmidt could not purchase it due to the high price. Although it is

believed that D.G. Messerschmidt “failed to get anything curious”, the collection he collected was of great historical and cultural value. The artifacts themselves have not been preserved to this day, but they are known from drawings. Among them, there were deer plaques typical of Tagar culture, a Tashtyk ceramic vessel, rattling pendants, a plaque with the image of two phoenixes, an overlay from a feline predator dating back to the Middle Ages. The silver vessel with a hunting scene of horsemen with bows and a hunting bird on it, found on the Yenisei and known from D.G. Messerschmidt’s drawing, is of considerable interest.

Messerschmidt’s expedition stayed in the Abakan ostrog until February 15, 1722. Then the travelers went on 16 sleighs down the ice of the Yenisei to Krasnoyarsk. They intended to return to the Minusinsk Basin again in the summer for further study, since the study of the basin was not completed.

D.G. Messerschmidt made a second trip to the Minusinsk Basin from May 13 to October 1722. Then, on October 5, 1722, the scientist arrived in Krasnoyarsk, where he stayed until May 8, 1723. The second stage of D.G. Messerschmidt’s stay in Krasnoyarsk lasted from October 5, 1722 to May 8, 1723.

Messerschmidt went to Mangazeya (a Russian town in the northwest on the Taz River) from Krasnoyarsk. On the way, he had the opportunity to meet the Ostyaks who lived on the banks of the Yenisei (the Yenisei Ostyaks-Kets). On the way from Naryn to Samara Yam, the scientist met the Ostyaks (Khanty) living along the banks of the Ob and its tributaries. He took advantage of these meetings to collect ethnographic information interesting to him.

It is necessary to emphasize Messerschmidt’s painstaking work, which amazes us. P.S. Pallas wrote about this: “D.G. Messerschmidt possessed excellent scholarship, often wrote diaries all night until morning, wrote down everything he learned and collected during the day, leaving only a few hours to sleep. I am astonished at what this man did alone, especially since he observed excessive punctuality in everything”.

Messerschmidt was a German, but he devoted his whole life to Russia

and was almost unknown in his homeland, in Germany. Unfortunately, his works have not been completed and have not yet been published in full. However, despite this, his works came into life, into scientific discourse, although after his death – as early as in the 18th century- and did not vanish into thin air.

D.G. Messerschmidt's collection burned down in a fire in the Kunstkamera Museum in 1747. However, before this fire, in 1738, watercolor sketches were made from many objects by students of the Academy of Arts- by Ivan Sokolov, Anton Pisyakov, Grigory Abumov, Yakov Nichaev and Maxim Mikhaev. Drawings from the collection were discovered in the Saint Petersburg Branch of the Archive of the Russian Academy of Sciences by the famous historiographer A.I. Andreev. Messerschmidt himself wrote about these items at the beginning of his list compiled on April 22, 1725, and indicated the exact purchase date of each item.

The result of D.G. Messerschmidt's work in Siberia is his diary. Unfortunately, the diary is published in German in two volumes, and not fully published in Russian. However, in 2012, the Ministry of Culture of the Republic of Khakassia published *Messerschmidt's Diaries*. Tomsk-Abakan-Krasnoyarsk.1721–1722 .

In 2021, "Daniel Gottlieb Messerschmidt's travelogue. Scientific expedition to Yenisei Siberia 1721-1725" was published under the editorship of G.F. Bykonya in Krasnoyarsk . These Messerschmidt's diaries allow researchers to see Siberia, its history and culture in the distant 18th century.

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**DISTRIBUTION OF BRONZE KNIVES
IN THE EARLY NOMADIC CULTURES OF THE
EASTERN EURASIAN STEPPES***

KEITA, MATSUMOTO

ABSTRACT

Despite the well-known fact that the material culture in different parts of eastern Eurasian steppes underwent transformations under Western (the Central Asian) influence in the middle of first millennium BC, the relationships between such changes in different regions and the preconditions for these changes remain unknown. This work seeks to classify bronze knives using a single index and to analyze changes in the whole eastern steppe zone. The results show that the first half of the first millennium BC in this zone can be divided into three stages.

Until the 8th century BC the whole eastern steppe territory was in a phase of homogeneity due to the influence of Southern Siberia. From the 8th century BC to the 6th century BC a regional character gradually appeared in different regions. The new type (D2), which appeared in the Urals and Kazakhstan at this stage, is one such region. Then in the 6th-4th centuries BC this new type (D2) spread from its place of origin to South Siberia, Mongolia, and the Great Wall of China, and the eastern Eurasian steppe became homogeneous again. It can be concluded that the main changes noted in Southern Siberia, Tuva and the Great Wall zone in the middle of the 1st millennium BC were the result of the spread of new traditions that originated in the Ural-Kazakhstan region around the 7th century BC. And this probably indicates that the "Scythian world", at least in the eastern part of the steppe zone, can be divided into two traditions and phases.

Key words: Eurasian eastern steppes, early nomadic cultures, Scythian world, bronze knives, akinakes.

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INTRODUCTION

Are the changes in the Minusinsk Basin during the period from the Podgornoe to the Saragash stage related to the appearance of a large number of elements of the Eurasian steppe zone in the Great Wall zone Hu? Considering this connection, it is worth noting the general phenomenon that knives, both in the Great Wall zone and in the Minusinsk Basin, came to acquire more and more straight form. The boundary between the blade and hilt came to be unclear, and the tip of the handle came to have a small round hole. If the changes in the two regions are interrelated and resulted from the eastward expansion of Darius I of the Achaemenes dynasty, it is indeed a pan-Eurasian change of great historical significance. However, despite the fact that in previous studies some sources from both regions referred to each other, there was no unified understanding of them in the whole eastern steppe region. Therefore, this paper attempts to unite and classify the knives of the Minusinsk Basin and the Great Wall region and to find out how organically the changes in these two regions are connected.

RESEARCH METHODS AND MATERIALS

It is preferable to classify all knife materials common on the eastern steppes. However, in the published excavation materials, details such as handle sections often remain unknown. Therefore, this paper first classifies knives collected in the Minusinsk Basin (Minusinsk Museum(211)), Mongolia (Central Gobi (33), Southern Gobi (5), Bulgan(2), Khovsgol (3)) and the Great Wall region (Tokyo National Museum(108)), based on 362 knives that were personally seen and studied by the author. Then, on the basis of some characteristics, the manufacturing technology is assumed. In addition, the distribution of the knives is examined in the light of the excavated materials.

Types A, Ba, Bb and C belong mainly to the 2nd millennium BC (see Matsumoto, 2021). In this article we focus on type Bc and follow this type when naming types and subtypes.

COMMON CLASSIFICATION

Type Bc: with a square handle section.

Type Bp: with slightly rounded handle section.

Type D: с перевернутым треугольным сечением рукоятки

Subtypes of Type D

Subdivided according to the shape of the product, the pattern and the decorative part. The designs can be divided into two categories: those in which the indented areas are due to a combination of patterns (elements) such as triangles and commas (i), and those in which no such patterns (elements) exist (g).

Type D1a: Partially patterned design g (many have patterns on one side only). Many pieces have a curved shape.

Type D1b: Design g with patterning all over the piece. Many pieces also have a curved shape.

Type D2: Design i. Many products are straight shaped.

Each type has its own distinctive pommel. For those with no pattern (no design α/β), the pommel and the shape of the piece determined the attribution to the type.

Chronology

Type Bc was widespread until the eighth century BC, but after a time probably began to gradually fall out of use; type Bp flourished during the Spring and Autumn period (eighth to sixth centuries BC); type D1a was present between the eighth and early sixth centuries BC, that is, in parallel with type Bp; types D1b and D2 were used from about the sixth century BC to the third century BC, when iron tools became widespread.

Distribution

According to the data used to classify the trends in the three regions - Minusinsk Basin, Mongolia and the Great Wall Region: type Bc is almost equally represented in the Minusinsk Basin, Mongolia and the Great Wall Region; type Bp is concentrated mainly in the Great Wall Region types

D1a and D1b in the Minusinsk Basin; and type D2 is common in all three regions.

In other words, the regional characteristics of these regions, which were dim in the stage of type Bc (c. 8th century BC), became more pronounced in the next stage (8th-6th century BC), with types Bp in the Great Wall Region and D1a in the Minusinsk Basin. In Mongolia, where Bp and D1a types are scarce, type Bc probably survived. And in the 6th-4th centuries BC, type D2 was widespread all over the eastern steppe, while type D1b was also present in the Minusinsk Basin at the same time. Thus, it was at this stage that, once again, inter-regional commonality increased in the eastern Eurasian steppes.

CONCLUSION

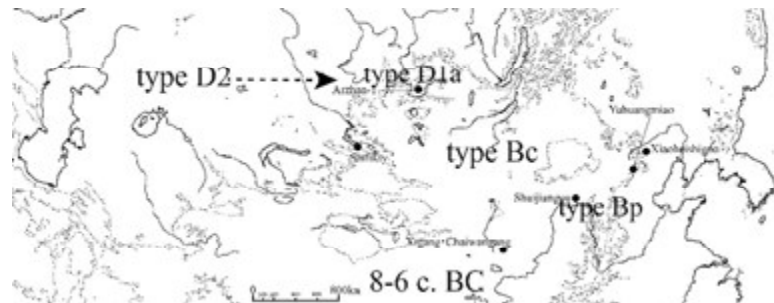
Based on the dynamics of the spread of bronze knife types, the first half of the first millennium BC in the eastern Eurasian steppes can be divided into three stages. First, in the 11th-9th century BC, when type Bc originated in the Minusinsk Basin and was distributed in the Great Wall Region, in Western Siberia and in the Urals (Matsumoto, 2021). Similar in movement to type Bc is the Karasuk daggers (type B) (Matsumoto, 2015).

In the 8th-6th centuries BC, types D1, Bc and Bp spread regionally in Southern Siberia, Mongolia and the Great Wall region, respectively; D2 may have appeared in the Ural-Kazakhstan region during this period. Thus, this period can be regarded as a period of regional formation in different regions.

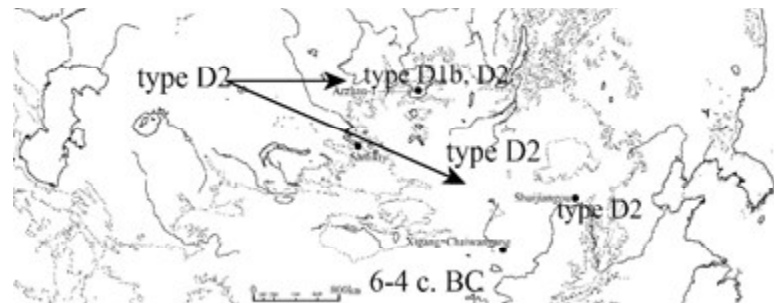
In the 6th-4th century BC, the eastern Eurasian steppes are again united with type D2, although type D1b is found only in southern Siberia. Behind the spread of the everyday tool, the knife, over such a large area we should expect important historical events, including migrations. The same can be said about the small belt ornaments (Matsumoto, 2021) and akinakes daggers (Matsumoto, 2022), which spread from the Urals to the Kazakhstan area and beyond, like type D2.

Considering the above, we can conclude that the main changes

observed in Southern Siberia, Tuva and the Great Wall Region in the middle of the 1st millennium BC were the result of the spread of new traditions that originated in the Ural-Kazakhstan region around the 7th century BC. And this seems to suggest that the 'Scythian world', at least in the eastern part of the steppe zone, can be divided into two traditions and phases.



DIFFERENT TYPES OF KNIVES IN THE 8TH TO 6TH CENTURY BC.



DISTRIBUTION OF TYPE D2 IN THE 6TH-4TH CENTURY BC.

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PALEOLITHIC SITES OF KHAKASSIA: AN OVERVIEW

SERGEY A. VASIL'EV AND VALERIY S. ZUBKOV

ABSTRACT

The paper deals with the Paleolithic sites of the Republic of Khakassia, South Siberia. Main concentrations of the Old Stone Age sites located along the Yenisei River valley, at the Minusinsk Depression lowlands, in the upper reaches of the Abakan River, and at the piedmonts of the Kuznetsky Alatau mountains have been described. In spite of the long-term prehistoric research, the territory under consideration remains unevenly explored. The same could be said about the chronological position of the sites. There are huge temporal gaps between the Levallois-Mousterian of the Dvuglazka Grotto and the oldest Upper Paleolithic occurrences. The majority of the sites belong to the Late Upper Paleolithic Afontova culture dated between ca. 16,000 to 10,000 ¹⁴C yr BP. At the same time at the Abakan River basin there are Late Upper Paleolithic assemblages with close affinities with the Kokorevo culture (Ulugbil, Krivoi Chistobai 1), and an original industry with foliated bifaces (Kuibyshevo II).

Keywords: Khakassia, Yenisei, Abakan, Upper Paleolithic, Afontova culture, Kokorevo culture.

INTRODUCTION

The main aim of the paper is to give a brief general description of the Paleolithic sites known on the territory of Republic of Khakassia in terms of geographical distribution, chronological position and cultural affiliation. The Republic takes a left bank of Yenisei, including western parts of the Minusinsk Depressions (Southern Minusinsk, Syda-Erba or Middle Minusinsk, and Chulym-Yenisei or Northern Minusinsk) and surrounding

mountain chains of West Sayan and Kuznetsky Alatau (Figure 1). Although the first information about the presence of the Old Stone Age in Khakassia dates back to the 19th century (finds described by I. T. Savenkov from the Uzunzhul River and the Izykh Mountain), but for a long time, Paleolithic research was restricted by stray finds and isolated efforts. Let us mention the discovery of the Paleolithic sites on the Tashtyk River by S. A. Teploukhov and V. I. Gromov in 1924–1925. In 1945–1949 E. R. Rygdylon collected the Stone Age surface scatters in the Abakan River valley. It is also worth noting the cache of antler and lithic artifacts excavated by A. N. Lipsky near Sosnovoe Ozero in 1958.

The main achievements in the study of the Pleistocene prehistory of Khakassia were associated with the salvage archaeology activity on the reservoirs of the Yenisei cascade of hydroelectric power stations. First of all, the large-scale excavations campaign directed by Z. A. Abramova in 1960–1967 on the habitation sites located near the river Tashtyk should be mentioned. Z. A. Abramova conducted reconnaissance trips along the left bank of the Yenisei and in the Abakan valley. Exploration on the banks of the Krasnoyarsk reservoir was successfully continued by N. F. Lisitsyn, who discovered the sites of Afanasieva Gora, Sabanikha, and others. Yu. S. Khudyakov and N. F. Lisitsyn carried out prospections searching for the Stone Age sites in the Koibal steppe and the Abakan valley. In 1974–1979 Abramova led the excavations in the Dvuglazka grotto, where Middle and Upper Paleolithic remains were discovered. In 1974 N. D. Ovodov discovered the Malaia Syia site in the foothills of the Kuznetsky Alatau Mountains, excavated since 1976 by V. E. Larichev, and later by Yu. P. Kholuyshkin. On the Upper Yenisei, since 1971, S. N. Astakhov began to study Paleolithic sites in the area of Sayanogorsk (Oznachennoe I) and in the Sayan Canyon of the Yenisei at the area to be flooded by the reservoir of the Sayano-Shushenskaya hydroelectric power station (Kantegir, Dzhoi). These works were continued by S. A. Vasil'ev, who discovered and studied in 1980–1991 a group of Late Paleolithic sites near the Mainskaia hydroelectric power station (Maininskaia, Ui I, II, Maininsky Lesozavod I).

After a break in the 1990s, the study of the Pleistocene prehistory of Khakassia resumed. In 2000, C. Turner carried out small-scale fieldwork in the Dvuglazka grotto. Since 2001, V.S. Zubkov began a systematic survey of the southwestern part of the Republic, where Paleolithic sites were discovered in the valleys of the Abakan, Tashtyp, Dzhebash, BolshieArbaty, and Malye Arbaty (for a brief history of the study of the Stone Age in Khakassia, see Gotlib *et al.* 2014). In 2013, the excavations of Malaia Syia were resumed, and in 2016, the Sabanikha site was surveyed. Since 2017, a group of Russian and Chinese archaeologists headed by N.I. Drozdov carried out fieldwork along the Abakan River near Matkechik and Ust'Sos, and in 2020 V.M. Kharevich started a new excavation campaign at Sabanikha.

THE YENISEI VALLEY WITHIN THE WESTERN SAYAN MOUNTAINS

The southernmost Paleolithic site within the territory of Khakassia was located at the mouth of the Kantegir River in the area later flooded by the reservoir of the Sayano-Shushenskaya hydroelectric power station. The site of Kantegir was associated with the deposits of the second terrace. The Layer 1 of the site was embedded in the buried soil in upper sandy loams. Below, in layered alluvial sandy loams, the remains of Layers 2 to 5 were discovered. The lower cultural layers can be compared with layers 4 and 5 of Maininskaia (*cf.* below), and layer 1 belongs to the Final Pleistocene. The faunal remains consist of Siberian ibex, bison, red deer, there are also fish bones. Hearths and chipped stone concentrations were unearthed in the cultural layers. The finds are similar to Maininskaia and belong to the Afontova culture. Similar industries have been recorded at Dzhoi (a redeposited site associated with second terrace), as well as in the localities associated with the cover deposits of the same terrace level (Maininsky Lesozavod I and II, Bolshoi Karak, etc.; Astakhov 1986; Vasil'ev 1996).

Among the sites of the Maina group, located near the mouth of the

Ui River, the most ancient is the assemblage of the lower cultural layer of Ui I, associated with alluvial deposits of terrace 23–25 m high. The faunal complex is characterized by the predominance of the remains of Asiatic wild ass, bison and Siberian ibex. A charcoal dating of more than 22,000¹⁴C yr BP was obtained, which turned out to be older than a series of dates run out on bone of 17,000–16,000¹⁴C yr BP. The early Sartan age (MIS2) of the site is probable. Stone slab concentrations were unearthed in the layer, which can be interpreted as the foundations of a pillar structure. Of interest is the hearth in a kind of “stone box”. An unusual object was discovered— a structure of animal ribs driven into the ground vertically, or at an angle, most likely the remains of a device for drying skins. The collection of the site includes conical, prismatic and wedge-shaped cores, end scrapers on blades and flakes, retouched blades and flakes, as well as a perforated-tooth pendant, an antler point, bone borers and an original tool made from a fragment of tubular bone.

The main Paleolithic site of the area is Maininskaia. The western part of the site is located on third terrace (25–27 m). In the section under the Neolithic remains, a cover stratum of sediments with a series of cultural layers (A-1, A-2 and A-3) dated by 12,100–11,700¹⁴C yr BP indicates that the site was inhabited at the end of the Pleistocene, and the age of layer B is estimated at about 15,000¹⁴C yr BP. Of interest is the spatial division of the area of the upper (A-1–3) cultural layers into the southern part with hearths (remains of a dwelling unit were discovered in layer A-3) and numerous bone remains, and the northern part, which was a specialized lithic processing workshop.

The lower (eastern) part of the site was connected with second terrace (16–18 m) and contained a series of Late Paleolithic cultural layers occurring in the upper strata (Layers 0 and 1) and underlying alluvial sands and sandy loams (Layers 2-1, 2-2, 2-3, 2-4, 2-5, 3, 3a, 3b, 4, 5, 6, 7, 8, and 9). The fauna includes the remains of predominantly Siberian ibex, bison, and red deer; over time, the proportion of bison in the fauna decreases. Radiocarbon dates for layers 5 to 1 mainly lie in the range from 16,000 to 12,000¹⁴C yr BP. During the excavations, a large number of

structural features were investigated in the form of chipped stone concentrations and hearths, including those with stone linings. In Layer 3, an isolated accumulation of selected tools, blanks, and a hammerstone was discovered, which can be regarded as a cache of a Paleolithic flintknapper.

A vast collection of lithics allows us to trace the stages of the evolution of the Afontova culture on the Upper Yenisei. Among the cores, single- and double-platform, discoidal, flat Levallois cores, wedge-shaped and butt-ended microcores predominated. There are also celt-like, prismatic, and cylindrical cores. The main classes of tools are various side scrapers, end scrapers on flakes, and splintered pieces. There are retouched flakes, retouched blades, notches and denticulates, backed bladelets, and burins. Small points, borers, choppers, composite tools, original disc-shaped tools, and *limaces* have been found. The site delivered a series of bone and antler points with one and two grooves and without grooves, bone fasteners with a head, an antler hammer and a handle. The discovery of a unique anthropomorphic figurine in Layer 5, the only object of baked clay of the Paleolithic age in Russia, attaches particular importance to the site (Figure 2).

Directly opposite Maininskaia, there was another multilayered site, Ui II. Here, in section of the second terrace, under the Holocene sedimentary unit with cultural layers, layered alluvial sands occurred, including Paleolithic layers 2, 3, 3a, 4, 5, 6, and 7. These strata overlapped a pebble bed with remains of Layer 8. Judging by the comparison of sections, Ui II in the Pleistocene formed a single whole with the lower level of Maininskaia, now separated from it by the mouth of the river. The faunal remains are characterized by the predominance of red deer, there are also bison, Asiatic wild ass, hare, etc. A series of radiocarbon determinations indicate the late Sartan age of cultural layers from 7 to 2 (14,000–13,000¹⁴C yr BP).

The most ancient Layer 8, was the traces of lithic workshop for the splitting of pebbles picked up on the spot. In the overlying layers of the site, numerous hearths were investigated, including those with slab

linings. In Layer 7, a complex unit was studied, which consisted of two structures surrounded by stones and two external hearths. The objects can be interpreted as the remains of a dwelling and a light shelter. Another domestic unit was investigated in Layer 2. The lithic industry is similar to Maininskaia. It is worth noting a series of beads made of fossils and a polished slate pendant. In Layer 2, a grinding slab and an anvil were found (Vasil'ev 1996; Vasil'ev *et al.* 2005).

Directly on the northern slope of the Western Sayan Mountains at the junction with the Koibal steppe lowlands, the Oznachenoe I site was located, associated with a layer of loams on a slope of the terrace 30–35 m high. The fauna was dominated by reindeer. The cultural layer with a few artifacts has been dated by bone to 15,000–14,000¹⁴C yr BP (Astakhov 1986).

THE SOUTHERN MINUSINSK DEPRESSION

Near Sayanogorsk, on an 8–10 m terrace, there was an Aerodrom surface site; the assemblage can be assigned to the Afontova culture (Astakhov 1986).

Among the sites of the Abakan valley on the shores of Sosnovoe Ozero ('Pine Lake'), A. N. Lipsky investigated an interesting object. Under a sandstone slab in a square hole, a cache was found containing 8 flat antler points and 10 stone items (side scrapers and flakes), as well as 5 fragments of a horse bone, probably blanks for the production of tools. Localities of the Final Paleolithic (Sosnovoe Ozero I–IV) were discovered nearby, where stone tools were found along with the bones of horse, Asiatic wild ass, and roe deer (Lisitsyn and Khudyakov, 1997). Some other sites located in the Abakan–Yenisei interfluvium (Smirnovka, Arshanovka, Borki, etc.; Abramova *et al.*, 1991) could be referred to the Pleistocene.

Ulugbil is noteworthy, where stone products lay on blowouts together with bones of bison and reindeer. Among the finds are wedge-shaped microcores, Mousterian points, retouched blades, side scrapers, end scrapers, etc. The blade industry of the site is similar to the Kokorevo

culture (Lisitsyn and Khudyakov, 1997). Probably, a number of localities discovered in different years in the area of Bolshoi Monok, Matkechik, and Ust'Sos can be assigned to the Paleolithic, although it can be difficult to distinguish Final Pleistocene and Early Holocene lithic pieces (Abramova, 1975; Lisitsyn and Khudyakov, 1997; Drozdov *et al.*, 2017a). At Khyzyl-Khaia, accompanied by bison and red deer remains, prismatic and wedge-shaped cores, sidescrapers, end scrapers, and retouched blades were found. At Kongure, bison bones and lithics, including a series of retouched blades and Mousterian points, were collected on wind blowing; the remains of a cultural layer were identified (Lisitsyn and Khudyakov, 1997). At Matkechik I, a few finds were recorded at two levels in deposits of the terrace 8–12 m high of the Abakan River (Drozdov *et al.*, 2017b).

THE UPPER REACHES OF THE ABAKAN RIVER

Particularly noteworthy is the vast lithic workshop of Kuibyshevo II, located in the valley of the Abakan tributary, the Dzebash River. The cultural remains were associated with thin bed of loams overlying the weathering crust at the 70–75 m level (there are finds confined to the 60–65 and 90 m levels). The location of the site is confined to the outcrops of veined quartzite found less than 1 km west from the site. The main part of lithic industry is similar to the assemblages of the Afontova culture with the predominant use of flakes as the main form of tool blanks, large single-platform cores, wedge-shaped microcores, side scrapers, end scrapers, and splintered pieces. At the same time, there is a series of burins, including elongated pieces, made on retouched blades, similar to those found in the assemblages of the Kokorevo culture. The assemblage includes an interesting series of thin foliated bifaces.

Not far away, in the valley of the Krivoi Chistobai stream, on a 35–40 m terrace, the Krivoi Chistobai I site was found. Here, under stratigraphic conditions similar to those of Kuibyshevo II, a Paleolithic cultural layer associated with cryoturbated loams overlying the weathering

crust was unearthed. The lithic industry includes single and double platform cores, wedge-shaped microcores, sidescrapers, end scrapers, burins, etc. In a number of parameters (blade technique, the presence of a series of retouched blades, end scrapers and burins on blades, an elongated leaf-shaped point), the assemblage is similar to the Kokorevo culture.

A series of sites is associated with the low terraces of the Abakan River and its tributaries. Mozharov Uval Isit on a 27 m terrace on the right bank of Abakan. Here, the remains of two Upper Paleolithic cultural layers were identified, in the lower of which a hearth accompanied by stones was unearthed. In the area of the hearth, an accumulation of artifacts was recorded, as well as bones of bison, red deer and elk. There is a radiocarbon dating about 14,000¹⁴C yr BP. Single-platform cores for flakes, microcores and side scrapers were found. Judging by the appearance of the stone industry and the character of antler points without grooves, the assemblage can be attributed to the Afontova culture.

On the valley of the Bolshie Arbaty river Matros I is located. In the sandy loams of 5–6 m terrace, the remains of the Layer 2 were unearthed dated at 14,900–13,900¹⁴C yr BP. There were bones of argali (predominant), elk, reindeer, red deer, roe deer, bison or aurochs. Among the lithics are single-platform cores, knives, side scrapers, end scrapers, accompanied by an antler dagger-shaped tool with a groove. Nearby, on an 8–12 m terrace, there is Bolshie Arbaty I. The site yielded the bones of elk and argali. Wedge-shaped microcores, side scrapers, knives, end scrapers were found.

Few remains from the lower cultural layers at the sites of Sigirtup I, Bolshie Arbaty II, Semenovskiy Ruchei I, Krivoi Chistobai II, and Kuibyshevo III could also be assigned to the Late Pleistocene (Zubkov *et al.*, 2019)

THE SYDA-ERBA DEPRESSION

The Grotto of Dvuglazka is located in the Tolcheia river valley. Archaeological remains have been recorded in Layers 2 (Mesolithic),

4 (Upper Paleolithic), and 5 to 7 (Mousterian). The fauna of the last layers was dominated by the remains of the Asiatic wild ass, horse, and woolly rhinoceros (bison dominated in Layer 7). Of the other species, we note red deer and saiga. Numerous traces of gnawing on the bones indicate the complicated nature of the accumulation of the faunistic complex, mainly associated with the habitation of cave hyenas in the grotto. Finds from the Mousterian layers include a double-platform core, discoidal cores, a series of Levallois points, side scrapers, notches and denticulates. For the Upper Paleolithic Layer 4, a radiocarbon dating *ca.* 26,500 ¹⁴C yr BP was obtained, which allows us to attribute it to the Late Karginsky (MIS3). Unfortunately, the other dates reported for the site are contradictory and for the most part lack a clear association with stratigraphy. Among the faunal remains from Layer 4, the bones of mountain sheep, horse, and Asiatic wild ass predominated; it is interesting to note the presence of the Baikal yak. A small collection consists of a single-platform core, retouched blades, end scrapers on retouched blades, and a point. An original wedge-shaped ornamented bone tool with grooves and a pendant were also reported (Abramova *et al.* 1991; Lisitsyn 2000; Turner *et al.* 2013).

On the shore of the Krasnoyarsk reservoir, eroded localities with Paleolithic finds (Kunia, Mokhov Ulus, Sovetskaia Khakassia, Malye Kopeny, etc.) were examined. Krutogorskoe I was associated with deposits of the 40 m level of the Yenisei. The composition of the lithic collection (retouched blades, Mousterian-like points, end scrapers) makes it possible to attribute the assemblage to the Kokorevo culture (Abramova *et al.*, 1991).

THE CHULYM-YENISEI DEPRESSION

An important cluster of sites of the Afontova culture, now flooded by the Krasnoyarsk reservoir, was investigated on the banks of the Tashtyk River. The cultural layers of the sites were connected with the second terrace of the Yenisei. In the section of the Tashtyk I site, under a layer of upper sandy loams with traces of buried soils, a complex interbedding of sands and sandy loams followed. Three cultural layers lay in them, which yielded

numerous remains of reindeer, as well as argali, horse, red deer, saiga, bison, hare, etc. Radiocarbon dating from Layer 1 is approximately 12,000¹⁴C yr BP. At Tashtyk II, excavations uncovered upper sediments with four horizons of buried soils. At the base of the second paleosol, the remains of Layer 1 were found, and Layer 2 was unearthed in the lower part of the sequence and lay already in the alluvial part of the section. As in Tashtyk I, most of the bones belonged to a reindeer, there are remains of a horse, saiga, bison, etc. Hearths and remains of a lithic workshop for the manufacture of side scrapers were discovered in the cultural layers. The nearby site of Tashtyk IV contained cultural remains at two levels, which were deposited in the sediments of second terrace, covered by a modern landslide. Reindeer and bison bones were identified. A radiocarbon date of 14,700¹⁴C yr BP was obtained for the lower level of artifacts (Abramova, 1979).

The Afontova culture includes materials collected at the site of Pervomaiskoe II. Judging by the stratigraphic position of the artifacts and the lithic industry, the Podgornovskaia, Chernovaia I, II, and other sites date back to the final phase of the Pleistocene (Abramova *et al.*, 1991).

The cultural layer of the Pervomaiskoe I site is embedded in the upper sandy loams. From the bone sample from the destroyed part of the site, a radiocarbon dating of about 12,900¹⁴C yr BP was obtained. Among the finds are retouched blades, points, side scrapers, burins, and end scrapers. The material is similar to the Kokorevo culture (Lisitsyn, 2000). Presumably, materials from Sidorikha are assigned to the same culture (Kharevich *et al.*, 2020a).

However, there are older assemblages in the area. Thus, the cultural layer of the Afanasieva Gora site was associated with clays on a 40 m slope of a terrace-like level. The bones of mammoth, reindeer, horse, argali were collected near the excavation area; the fauna from the small excavations is indeterminate. The lithic inventory (retouched bladelets, small points, end scrapers, burins, etc.) is similar to the assemblage of Tarachikha and we can assign them to the same cultural tradition of the middle phase of the Upper Paleolithic of Yenisei (Lisitsyn, 2000).

On the shore of the Krasnoyarsk reservoir is Sabanikha. The cultural remains occurred above the horizon of brown sandy loam (interpreted as fossil soil of the Karginsky, MIS3) in deposits of 40 m level. The fauna was dominated by the bones of red deer, bison and argali. Radiocarbon dates run out on charcoal samples from the fireplaces are from *ca.* 26,900 to 22,900 ¹⁴C yr BP. The finds include large single- and double-platform cores, retouched blades (including pieces with concaved edges resembling Aurignacian forms), end scrapers on blades and retouched blades, end scrapers with pointed base, bifacial sidescrapers, choppers, etc. The site produced a series of artifacts made of bone and antler—adzes, points without grooves, eyed needles, as well as stone beads (Lisitsyn, 2000; Barkov and Meshcherin, 2018; Kharevich *et al.*, 2020b).

THE KUZNETSKY ALATAU PIEDMONTS

Far away from the Yenisei, in the valley of the Belyi Iyus River, the Malaia Syia site is known. The site sits on the slope of the ravine at a height of 32–35 m. Thick cultural layer is associated with redeposited buried soil bearing traces of cryoturbation and is overlain by a layer of upper loams. Among the faunal remains, the bones of reindeer, wild sheep or goat, and bison predominated. A series of radiocarbon dates is contradictory (range from 34,500 to 17,800 ¹⁴C yr BP). Recently, a number of AMS dates have been obtained in the range of 34,000 to 29,000 ¹⁴C yr BP. The industry of Malaia Syia is based on large blades, on which end scrapers, side scrapers, and burins were manufactured. There are many retouched blades, including some pieces with curved outlines. There is a series of bone and antler points without grooves, as well as blanks of personal ornaments and pendants made of serpentinite (soft stone) with holes. The lithic industry has much in common with the finds from Sabanikha and probably belongs to the same cultural tradition (Larichev and Kholyushkin, 1992; Lbova *et al.*, 2013, 2015).

CONCLUSION

Despite the efforts of several generations of researchers, the vast territory of Khakassia remains unevenly studied in terms of the Paleolithic. Even in the repeatedly surveyed section of the Yenisei valley in the area of Maina-Sayanogorsk, as shown by the results of field trip in 2013 (Astakhov *et al.*, 2019), it is possible to discover new sites. The strip of northern foothills of the West Sayan Mountains stretching from Sayanogorsk to Bondarevo seems promising for the search for the remains of the Old Stone Age. On the Upper Abakan River region, the valleys of some tributaries (Bolshie Arbaty, Malye Arbaty and the basin of the middle reaches of the Dzhebash River) were selectively surveyed, but there are still a lot of white spots at archaeological map. On the banks of the Krasnoyarsk reservoir, there are numerous sites currently eroded, as evidenced by the finds of E.A. Miklashevich (personal communication). The practically complete absence of Paleolithic remains in caves and rockshelters (see Abramova *et al.*, 1991: 12; Derevianko *et al.*, 2000), which are abundantly represented in the territory under consideration, remains mysterious. The Grotto of Dvuglazka is the only exception.

Equally great is the uneven temporal distribution of the Paleolithic sites. There is a large chronological gap between the Levallois-Mousterian of the Dvuglazka Grotto and the most ancient Upper Paleolithic known in the area under consideration. The overwhelming majority of the sites belong to the late Sartan (MIS2) period, the final phase of the Upper Paleolithic, and are mainly represented by assemblages of the Afontova culture. At the same time, traces of the Kokorevo culture (Ulugbil, Krivoi Chistobai I) and a particular variant of the Yenisei Late Paleolithic with foliated bifaces (Kuibyshevo II) were identified in the Upper Abakan area.

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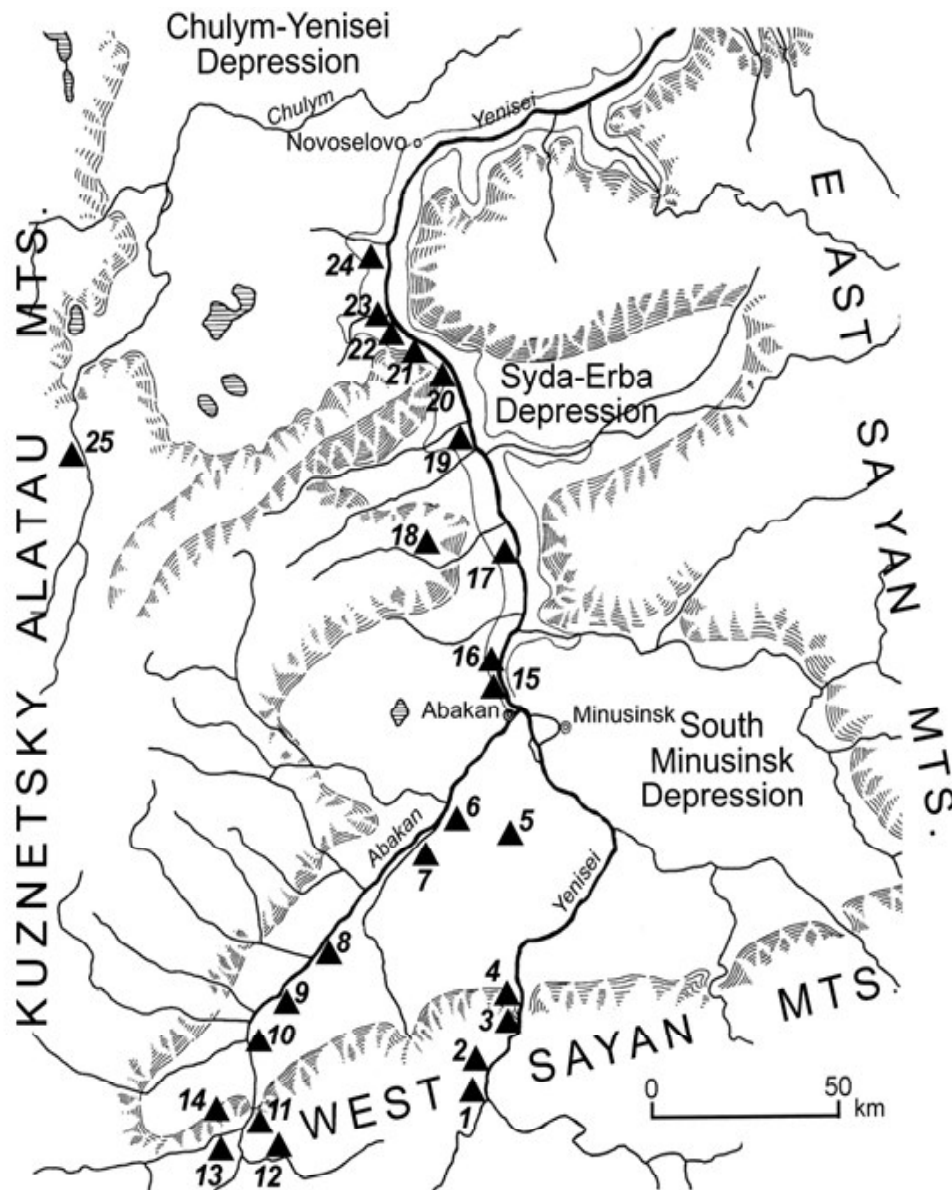


FIGURE 1. LOCATION MAP OF MAJOR PALEOLITHIC SITES IN KHAKASSIA

- 1: KANTEGIR; 2: DZHOI; 3: MAININSKAIA, MAININSKY LESOZAVOD I, II, UI I, II; 4: OZNACHENNOE I, BOLSHOI KARAK, AERODROM; 5: SMIRNOVKA, BORKI; 6: ARSHANOVKA; 7: SOSNOVOE OZERO I-IV; 8: ULUGBIL; 9: KONGURE, MATKECHIK I, UST'SOS; 10: BOLSHOI MONOK, KHYZYL-KHALA; 11: MATROS I, BOLSHIE ARBATY I, II, SEMENOVSKY RUCHEI I; 12: KUIBYSHEVO II, III, KRIVOI CHISTOBAL I, II; 13: MOZHAROV UVAL I; 14: SIGIRTUP I; 15: KUNIA; 16: MOKHOV ULUS; 17: SOVETSKAIA KHAKASSIA; 18: DVUGLAZKA; 19: MALYE KOPENY; 20: KRUTOGORSKOE I; 21: SABANIKHA, SIDORIKHA; 22: AFANASIEVA GORA, TASHYK I-IV; 23: PODGORNOVSKAIA, PERVOMAISKOE I, II; 24: CHERNOVAIA I, II; 25: MALAIA SYIA.

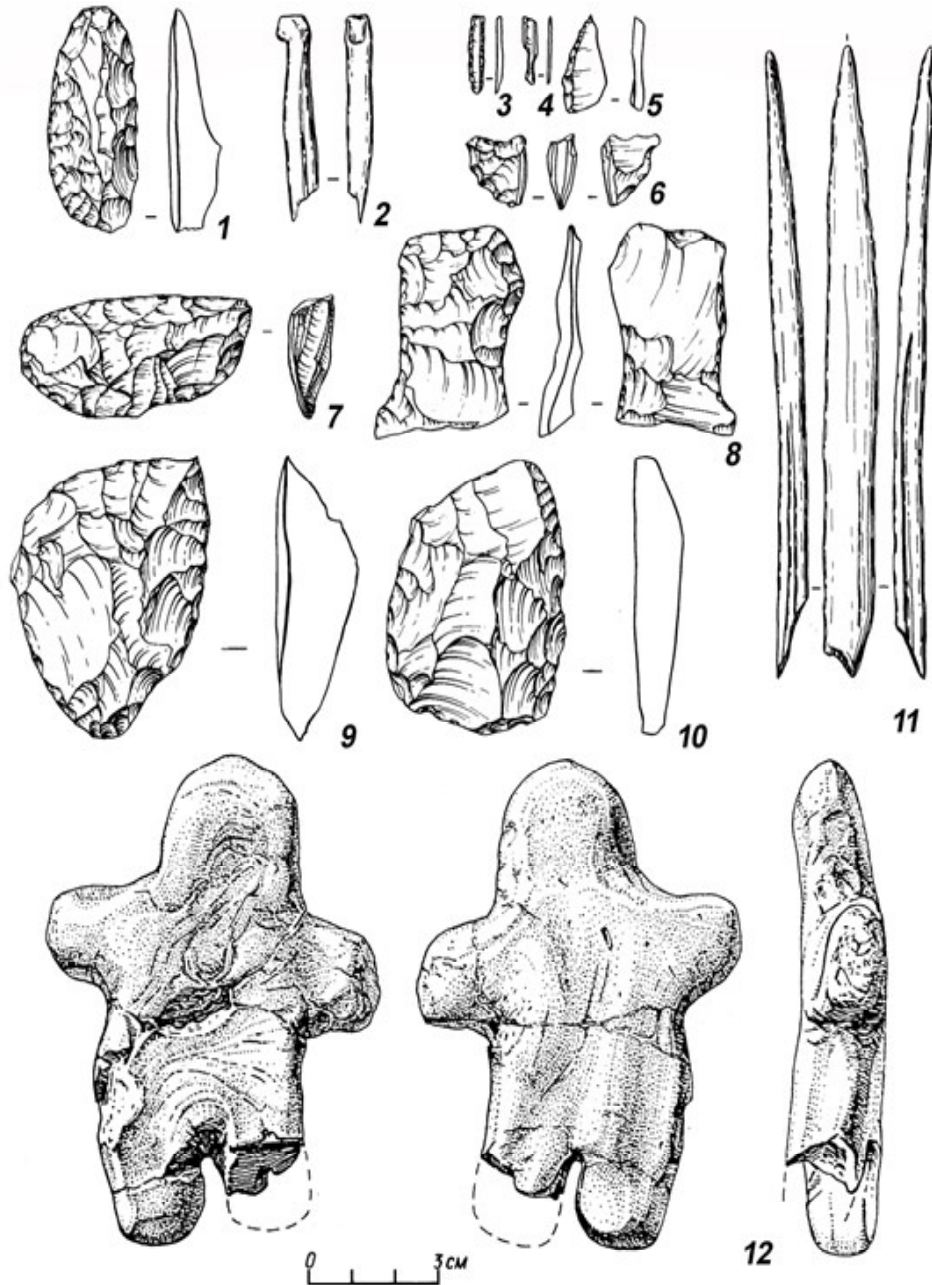


FIGURE 2. LITHIC, BONE AND ANTLER ARTIFACTS, AND A CLAY FIGURINE FROM MAINNSKAIA.

1: END SCRAPER; 2: BONE FASTENER; 3, 4: RETOUCHE BLADELETS; 5: SMALL POINT; 6, 7: CORES; 8: CHISEL-LIKE TOOL; 9, 10: SIDE SCRAPERS; 11: ANTLER POINT, 12: CLAY FIGURINE.

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TAGAR CULTURE (1ST MILLENNIUM BC) ON THE MIDDLE YENISEI IN CENTRAL ASIA*

N.A. BOKOVENKO

The ancient societies of Central Asia, due to their peculiar geographical location, occupy an important place in the suite of cultures of the Scythian type of the 1st millennium BC of steppe Eurasia. One such peculiar powerful cultures of this region is Tagar culture, located in the steppe basins of the Middle Yenisei Basin (Fig. 1-2).

HISTORICAL PERSPECTIVE

The history of excavations of this culture dates back three centuries, since the excavation of the Tagar mound for scientific purposes by D.G. Messerschmidt's expedition (1720-1727) in 1722, but as an independent cultural formation, it was first identified by S.A. Teploukhov and named the Minusinsk mound culture (1929, pp. 41-64). According to the changes in grave structures, funeral rites and accompanying things, he identified 4 stages of its development: stage 1 – the 7th century BC; stage 2 – the 6th century BC; stage 3 – the 5th century BC; stage 4 – the 2nd century BC - the beginning of our era.

The same year, S.V. Kiselyov proposed a slightly different periodization; and a new name was introduced for the Minusinsk mound

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culture, which turned out to be the most suitable - Tagar culture (Kiselyov, 1929, pp. 257-267). It was based on a complex of interdependent and interrelated characteristic types of things. Tagar culture is divided by him into three stages: the first stage dates from the 10th-7th centuries BC, the second - the 7th-4th centuries BC, the third – the 3rd century BC - the turn of our era. Later, M.A. Devlet systematized the accumulated archaeological material on the burial structures of Tagar culture in accordance with S.V. Kiselyov's three-stage division; but many monuments still remained behind the scheme she proposed (Devlet, 1958, pp. 59-69). Her systematization of funerary sites was the most thorough and promising at that time, but did not receive further development. Some modern researchers of Tagar culture are inclined to a similar three-stage periodization (Kuzmin, 1979, pp. 44-47; Subbotin, 2001).

N.L. Chlenova proposed a different vision for the formation and development of Tagar culture in a number of her works (1967, 1972). In her opinion, several cultures and cultural groups coexisted simultaneously in the Minusinsk Basin: Lugavskoe culture dates from the 14th-6th centuries BC, Karasuk culture - from the 12th-6th centuries BC, Bainov group - from the 8th-6th centuries BC, Podkunya-Kokorevo culture - from the 8th-6th centuries BC, mixed Karasuk-Tagar – the 7th-6th centuries BC and Early Tagar with Karasuk-Tagar remnants – the 7th-6th centuries BC. Thus, according to N.L. Chlenova, two cultures existed simultaneously in the Karasuk Epoch, and four more cultural groups - in the Early Scythian Period (the 8th-6th centuries BC) (Chlenova, 1972, p. 129). The falsity of the concept of this hypothesis is given in G.A. Maksimenkov's works (1975a, pp. 48-58; 1975b, pp. 159-167).

Based on the analysis of significant Tagar material in the 50-60s of the 20th century, S.A. Teploukhov's four-stage periodization was finalized by M.P. Gryaznov (1968) (Fig. 3). Based on the change in the designs of burial structures, burial rite, accompanying inventory, Tagar culture, genetically dating back to local Karasuk culture of the Bronze Age, was divided by him into four successive stages: 1 - Bainov (the 7th century BC), 2 - Podgornoe (the 6th-5th centuries BC), 3 - Saragash (the 4th-3rd

centuries BC), 4 - Tes (the 2nd-1st centuries BC). With the accumulation of new material, obtained due to the intensive work of the Krasnoyarsk and Middle Yenisei expeditions of the Institute for the History of Material Culture of the Russian Academy of Sciences, this periodization is refined and fragmented (seven successive stages are distinguished; the initial of which dates back to the 8th century BC) (Gryaznov, 1979, pp. 4-5). M.P. Gryaznov's four-stage periodization is mainly used and the new studied sites relate primarily to it (Vadetskaya, 1986; Bokovenko, Moshkova, Mogilnikov 1992; Bokovenko, Krasnenko 1988; Bokovenko, Smirnov 1998; Maksimenkov, 2003; German, 2007) (Fig. 2-3).

Recently, a hypothesis has appeared, according to which the Bainov stage of Tagar culture is attributed to the Late Bronze Age (Lazaretov, 2005, pp. 86-88; Lazaretov, 2007, pp. 93-105). Later, these developments were included in the chronology of the Paleometallic Epoch sites of the Minusinsk Basins (Polyakov, 2022, pp. 285-289). Indeed, some elements of the culture of the Bainov stage have similarities with the cultural sites of the Bronze Age (stage 4 of this chronology), which indicates the continuity of these cultures, but new elements, that appeared at the beginning of the 1st millennium BC and which continue throughout the Tagar culture (funerary stone fences with vertical steles, the funeral rite, jar-shaped vessels, bronze objects, etc.), so far speak of the prematurity of such division of sites.

It is fundamentally important that the detailed analysis of the Early Tagar traits creates prerequisites for revising the chronological framework of some stages and making the beginning of Tagar culture at least as old as the 9th century BC. For example, a series of radiocarbon dates from the Early Tagar burial grounds Khystaglar are in the range of the 11th-10th centuries BC, and Tigir Taidzhen-4 - within the 10th-2nd half of the 9th century BC (Alekseev, Bokovenko et al., 2005, pp. 109-114, Bokovenko, 2010).

This early dating of sites is also confirmed by numerous radiocarbon dates on various samples (wood, coal, bone, organic matter) made in various laboratories around the world (Görsdorf, Parzinger, Nagler, 2004;

Alekseev, Bokovenko, Boltrik, and etc. 2001, pp. 1085-1107; Bokovenko, Zaitseva, Gil, Lebedeva, Sementsov, 2003, pp. 19-22; Alekseev, Bokovenko, Vasilev, Dergachyov, Zaitseva, Kovalyukh, Kuk, Plicht, Possnert, Sementsov, Scott, Chugunov, 2005; Polyakov, Svyatko, 2009, pp. 20-56). Thus, the beginning of the Tagar Epoch is at the turn of the late 10th-early 9th centuries BC and no later. In our opinion, the absolute dates of the stages are as follows: the Bainov stage – the 10th-9th centuries BC, the Podgornovo stage – the 9th-7th centuries BC, the Saragash stage – the 7th-3rd centuries BC, the Tes stage (culture ?) – the 2nd century BC-1st century AD (Fig. 3-4).

CULTURAL ASPECT

It is traditionally believed that Tagar culture was formed on the basis of the preceding Karasuk culture, as evidenced by the representative archaeological material, although cultural impulses from the West are also traced during this period, genetically related to the western regions and allowing us to see the Kazakh-Central Asian impulse of cultural innovation on the Middle Yenisei in the first half of the 1st millennium BC, as was written by N.L. Chlenova (1967, p. 216) and is now confirmed by archaeological material (Podolsky, 1980, pp. 126-134; Bokovenko, 2015). The real way of penetration of both the population and goods into the Minusinsk Basin from Eastern Kazakhstan, where Begazy-Dandybai culture existed, is most likely through the upper reaches of the Tom and further along the Askiz River with access directly to the Khakass steppes.

FUNERAL RITE

Tagar burial grounds are found almost throughout the entire territory of the south of the Krasnoyarsk Region and the Republic of Khakassia, and due to the presence of high vertical stone steles along the perimeter of the tile fence, are quite clearly visible even now (Fig. 2). The earliest burial grounds are numerous and similar in fence designs; the later ones have

fewer mounds and represent a cluster of various burial sites. A characteristic feature of the Tagar burial tradition is the burying of the dead within a square or rectangular stone fence of vertically dug (sometimes horizontally folded) slabs, at the corners of which vertical stones were installed along the perimeter of a fence.

In the Early Tagar period (the 9th-6th centuries BC), fences were similar in size and proportions to Karasuk ones and did not always have high steles at the corners, although fences reached 1 m in height (Chlenova, 1990; Savinov, 2012) (Fig. 5). Fences were often attached to each other, the fence plates themselves were reinforced with buttresses; vertical stones appear in a fence, the number of which can be eight. There are usually one or two graves inside a fence, the last one, as a rule, is erected later. The main type of burial structure is a stone box or a dirt pit, in which one, less often two people are buried. The general trend of the Tagar funeral tradition is the enlarging graves, the gradual replacement of boxes with wooden log cabins with a thick wooden floor of several layers and an increase in the number of the buried, the transformation of large graves into collective crypts. If at first the buried, laid on their backs in an elongated position, had a stable orientation with their heads to the southwest (less often to the northeast), then in collective burials it varies. A man usually had one or two vessels with liquid food above his heads, and certain pieces of cow meat, less often sheep and horse, - under his legs. He was also given weapons: an ax hammer, usually along a body, a dagger and a knife - on the left side of the belt, a quiver with arrows - near legs (Chlenova, 1990, p. 211). Women have a knife or purse with toiletries (a mirror, a comb) on their belt; clothes are decorated with numerous beads, piercings and pendants. There are complex sets of various necklaces and beads with which the clothes, headdress or hair of the buried are decorated.

In the Early Tagar Period, at the Podgornovo stage, there are mounds of nobility up to 4 m high and with a fence side of 30 m, furnished with 10-13 steles (Gryaznov, 1968, p.190; Vadetskaya, 1986, p.80), where rich burials were made in spacious log cabins with a powerful overlap (Kara-Mound, Uzun-Oba, Tigei, etc.).

At the next stage, the Saragash stage, there is a further development of funeral rites and structural designs of a grave upper part. Fences are of eight-twenty stones, large, up to 200-300 sq.m., inside there were two, three or more subquadrated graves with collective burials. Along with family crypts, where up to 200 members of a certain clan or family were gradually buried through a special entrance, there were also individual graves of the richest men and women. Children's burials were made either in stone boxes separately or in collective burials together with women. The burial inventory is approximately the same as at the Podgornovo stage, but the shapes of ceramics, labor items and weapons undergo certain changes. The general trend in the development of bronze products is the reduction of the size down to miniature, completely unusable. At the same time, numerous bronze and gold plaques in the form of a deer appear, which are sewn on a costume of the buried and, apparently, represented a kind of orders, since they are in male military graves.

During this period, an elite aristocracy was formed in the Tatar society, as evidenced by huge mounds up to 20 m high, located in the Salbyk Valley, 60 km north of Abakan. The Big Salbyk Mound, excavated by S.V. Kiselyov, had a pyramidal embankment 11 m high and a large fence of huge (up to 50 tons) slabs (Fig. 7). Each side of the fence (up to 75 m long) consisted of massive slabs and vertical stones 4-6 m high. On the east side, there was an entrance decorated with vertical slabs. The 5 x 5 m square grave, 1.8 m deep, was completely robbed; the remains of seven people, scraps of gold foil and a bronze knife were preserved. But the grandeur of the structure itself and the labor costs of its construction (the fence plates were brought 20 and 70 km away) testify to the burial in Salbyk of a person of the highest rank, the leader of the union of Tagar culture tribes (Kiselyov, 1951, p. 189; Gryaznov, 1968, p. 191; Vadetskaya, 1986, p. 95).

In Tagar culture, at the Saragash stage, due to the continued tradition of constructing long-term crypts, when, apparently, it was necessary to preserve the corpse of a deceased person for some time before burial, the custom of mummification arises (Vadetskaya, 1986, p. 85). These changes occur at the Tes stage of Tagar culture (Fig. 8). The changes are very

significant, since they are associated with the appearance of the new Xiongnu-Xianbei population, therefore some authors consider it a separate Tes culture (Kuzmin, 2011, p. 14). An important feature of this period is the continuation of the development of the tradition of burial crypts and the emergence of a new phenomenon – separate underground burial ground. A large number of various pottery (jugs, polyhedral, cauldron-shaped), iron knives and buckles, and numerous accessories (multicolored beads, necklaces, bronze figured buckles) were laid to the buried. The traditions of mummification of the buried, which were described above, also continue. It is possible to reconstruct the sequence of the development of this process on a number of sites. At first, skulls and separately laid bones (some of them are not in the anatomical order) that had been outside the grave for some time (Tagar Island, Malaya Inya, Bazunovo, Kopyovo, etc.) were buried in ordinary crypts with a corpse-laying. Then attempts were made to bury bones in the anatomical order (but, unknowingly, they were messed and their positions were changed) - Tepsei VIII. Finally, in order to avoid a complete decomposition of a corpse, a spine was fastened with thin rods threaded specially drilled holes in it. Limbs were attached with the same rods (Medvedka II, Mayak, Sabinka III, etc.). The next stage, complementing operations with a body, is a complex processing of a head and an attempt to preserve facial features of the deceased. Special studies on the restoration of the entire sequence of operations allow us to trace them in detail: 1 - the release of a body of the deceased from soft tissues, 2 - the manufacture of a clay head with an attempt to restore portrait likeness, 3 - the attachment of bones and the manufacture of a mannequin body, 4 - the attachment of a clay head with a “body” and the final design of a mannequin, its coloring and dressing (Kuzmin, Varlamov, 1988, pp. 146-155, Kuzmin, 2011, pp. 177-179). Similar complex operations with a body were recorded during this period in Altai (Bashadar, Pazyryk) (Gryaznov, 1950; Rudenko, 1960; Polosmak 2001), in Tuva (Urbyun III, Balgazin, etc.) and in Eastern Kazakhstan (Samashev, Faizov, Bazarbayeva 2001).

At a later time, especially in Tashtyk culture, not mummies but dolls

stuffed with grass were buried. They were dressed in clothes, painted masks were put on their heads in the form of a leather ball, and a bag with calcined bones of the deceased was sewn inside (Kyzlasov, 1969, pp. 93-96).

The material culture of the Tagar Epoch is extremely diverse; there are especially many beautifully made objects made of bronze (tens of thousands), which indicates an extremely high level of bronze casting and ancient traditions of this production (Grishin, 1960; Sunchugashev, 1975).

Weapons are mainly represented by three categories: daggers, hammers and arrowheads. Daggers differ in the shape of a cross-guard and a pommel of a handle: with a straight cross-guard and a liner pommel and with a butterfly-shaped cross-guard and a pommel of different types (dismembered roller, in the form of a ring, zoomorphic, etc.). By the end of Tagar culture, cross-guards degrade; the newly appeared iron daggers continue to imitate the shapes of daggers with a straight cross-guard. In the 4th-3rd centuries BC daggers are reduced in size up to miniatures, although shapes do not change.

Ax hammers and battle axes are also very typical of Tagar culture. The earliest ones have a circular poll and a polyhedral spine, with a mushroom-shaped spine on a long sleeve/eye. Over time, the sleeve decreases, and a poll is often made in the form of animal figures (goats, deer). Axes also have mushroom-shaped polls or are decorated with the heads of birds of prey or boar figures. Arrowheads vary in shape, although they are numerically inferior to other regions (Tuva, Kazakhstan), where dozens and hundreds of them are found in quivers of the buried. The earliest ones are two-bladed on a long sleeve, often with a spike, later types are triangular, three-pointed with a hidden sleeve or petiolate.

The tools of labor are very numerous and diverse). Preliminarily, several thousand knives are found, and their real typology is a matter of the future. It is also complicated by the fact that many shapes, smoothly passing into one another, only slightly change some detail of a knife, and the difference is manifested in the design of a handle: ring-shaped, with

small and large holes, with slots, loop-shaped, liner, with zoomorphic decorations and various engravings, etc. In some cases, to create the elegance of a knife, it was tinned and a geometric pattern was scratched with a thin blade on the upper part of a handle. Awls are tetrahedral and differ in the design of a head. The earliest ones are nail-shaped, the later ones are with a double head. Sickles are slightly bent and technically imperfect and may indicate undeveloped agriculture.

There are extremely numerous items of horse equipment (bits, psalms) and, although almost all of them come from random finds, their diversity and excellent quality of production indicate the high importance of this category for the Tagar society (Bokovenko, 1986) (Fig. 9). The abundance and variety of horse equipment items, numerous rock carvings are quite convincing evidence of the importance of horse breeding in Tagar culture.

The dishes were made of clay, wood and cast from bronze. The pottery, mostly found in burial complexes, is quite standard - a jar shape with a poor ornament in the form of parallel grooves, indentations and a "pearl" pattern, zigzag. By the end of the Tagar Era, vessels on a pallet and of a cauldron shape predominate; and jugs also appear. Due to poor preservation, wooden dishes are rare, only by virtue of the burned cameras it is possible to record a large number of charred objects made of wood and birch bark. These are round, ellipsoid, square wooden trays and tables, cauldron-shaped vessels and ladles, apparently widespread among nomads (Bokovenko 1995; Bokovenko, Krasnienko, 1988).

A large number of bronze cast boilers on a pallet (from 5 to 100 liters in capacity) were also found in the Minusinsk Basin (Bokovenko, 1981). They usually have an ornament in the form of a rope on the side; handles differ in configuration (ring-shaped, horseshoe-shaped, loop-shaped, with mushroom-like processes, without them, zoomorphic) (Fig. 10). Herodotus mentions them in connection with the rite of sacrifice and, apparently, they were multifunctional in a nomadic environment, especially since some were found near ritual sites.

Toilet articles were stored either in leather bags (handbags) or in wooden caskets (Fig. 11). There are numerous carved bone and figured

hair picks, occasionally wooden ones are preserved (Dalny mound). An interesting object is a head scratcher, usually decorated with a circular ornament and a zoomorphic figure at one end. Bronze piercing and biconic beads, glass, carnelian, paste beads, which make up whole necklaces in combination, are quite typical. Hemispherical bronze (sometimes covered with gold foil) plaques adorn a headdress and a costume of the buried, a chest is decorated with plate tiaras and pendants with zoomorphic heads.

In the Tagar Era, the animal style dominates in rock art, which is depicted on many things (Fig. 12). In this era, art is also largely enriched with new images and plots, large plot compositions arise, such as the Boyar Petroglyphs (Devlet, 1976) (Fig.13). Old ones develop and become more complicated (horses by the tree of life, the plot of the road). Along with fairly simple, multifaceted plots of ritual and mythological content appear ("the sacred deer", "the solar horses", "the horse at the world tree", "hunting scenes", "procession of sacrificial animals", etc.), which are associated with complex ideological views of the Tagar society and fundamentally characteristic of the entire steppe world (Sher, 1980; Bokovenko, 1998).

Religious beliefs in the Scythian Era are still being formed. Rock carvings of this time on the Yenisei also testify to the established shamanism with all the attributes (a headdress, a tambourine, a mallet) (Fig. 14). Zoroastrian elements are primarily traced in the funeral rite of Tagar culture and the nomads of Central Asia. In addition to the tradition of purifying bonfires at the bottom of grave pits before burying (Arzhan, Yesino, Badanka, Teplaya, etc.), various attributes have also been found that may be associated with the burials of priests. Thus, in the Tagar mound (Medvedka II) in Khakassia, one of the buried was found with a bundle of twigs wrapped in birch bark (Bokovenko, Krasnienko 1988: Fig. 8), the functional purpose of which is perfectly illustrated both on numerous gold plates from the Oxus Treasure, and in written sources, quite definitely testifying to the existence of soothsayers (with divination twigs) in the Scythian environment (Herodotus IV: 67). These examples, of course, do not deplete all the diversity of the most diverse religious elements that

manifest themselves in nomadic cultures. Their detailed analysis is still to be done. Thus, the system of religious views of Central Asian nomads in the Scythian era was a synthesis of shamanism (practically established), the northern version of Buddhism and the eastern version of Zoroastrianism, and which can be conditionally called "Sayan-Altai" (Bokovenko, 1996, pp. 39-42).

Thus, the materials of Tagar culture and neighboring nomadic cultures of Central Asia about the developed forms of funerary structures, a complex developed system of funeral rites and perfect types of weapons, horse equipment and art are already at the early stages of their development (the 9th-8th centuries BC), which is a bit earlier than similar cultures of the Scythian type of the Northern Black Sea Region.

It should also be noted that according to the anthropological type, the Tagarians were representatives of European ethnicity and very close to the Scythians of Europe, the Mongoloid admixture increases only by the end of the Tagar Era (Kozintsev 1977).

By the turn of the era, significant changes are taking place in Tagar culture and society, which can be explained by a number of reasons: firstly, bronze products are replaced by iron ones; secondly, along with crypts, large burial grounds appear and the funeral rite partially changes, which is apparently due to the influx of a new more Mongoloid population. A new era begins – the era of the Great Migration of Peoples associated with the powerful migrations of nomadic peoples (Huns-Xiongnu, and even later Turks, Mongols) from Central Asia to the west, up to the Black Sea and Central Europe.

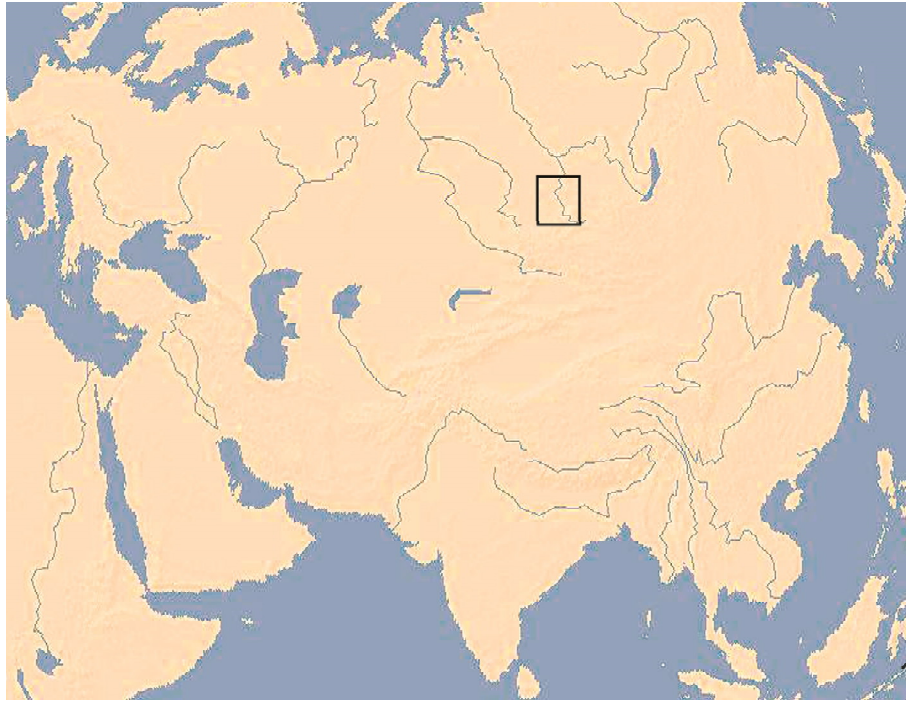


FIG. 1. LOCATION OF TAGAR CULTURE.



FIG. 2. THE TAGAR BURIAL GROUND OF TOLSTY MYS IN THE SOUTH OF THE KRASNOYARSK REGION.

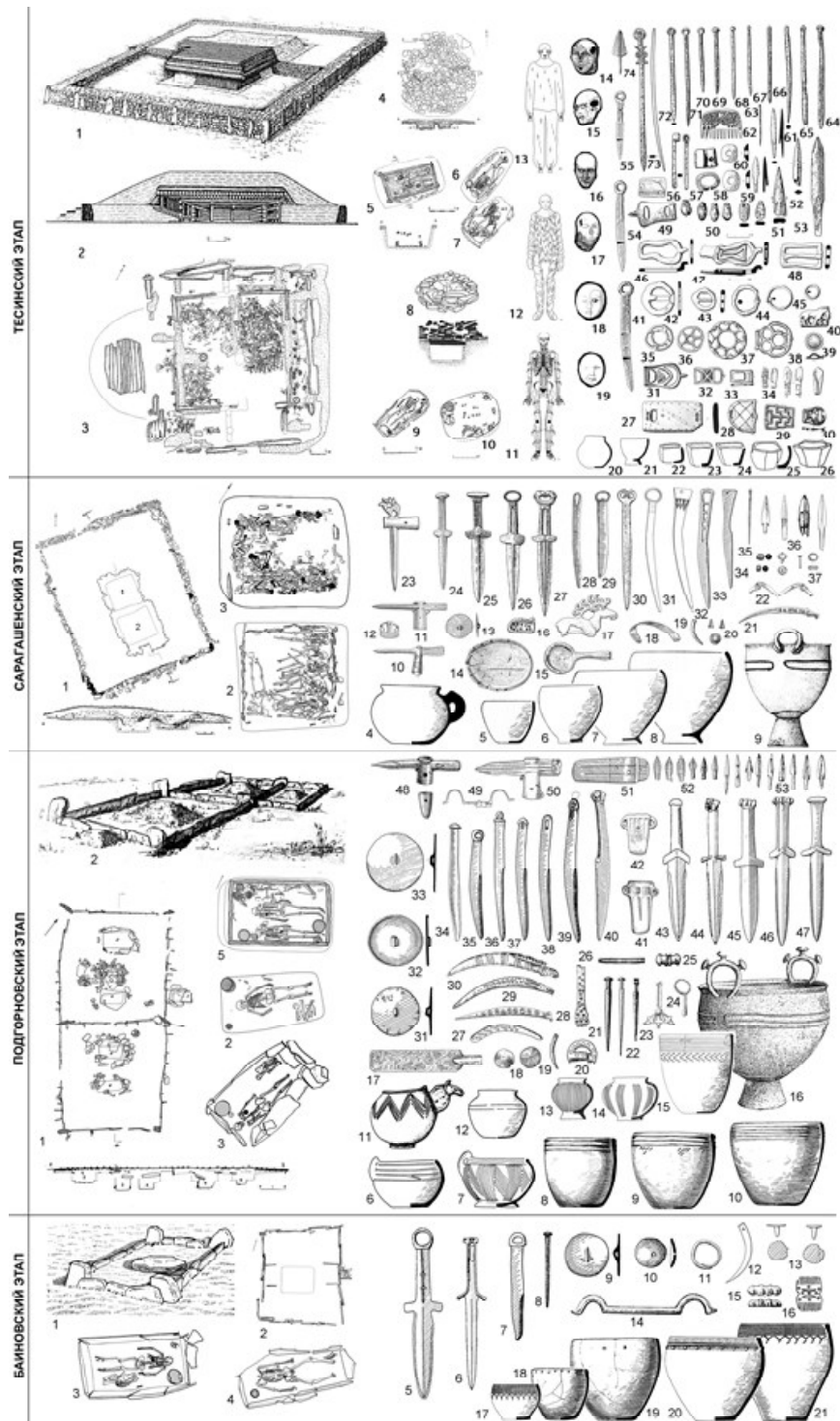


FIG. 3. DEVELOPMENT STAGES OF TAGAR CULTURE

ХРОНОЛОГИЯ ТАГАРСКИХ ПАМЯТНИКОВ ПО С14



FIG. 4. RADIOCARBON CHRONOLOGY OF TAGAR SITES

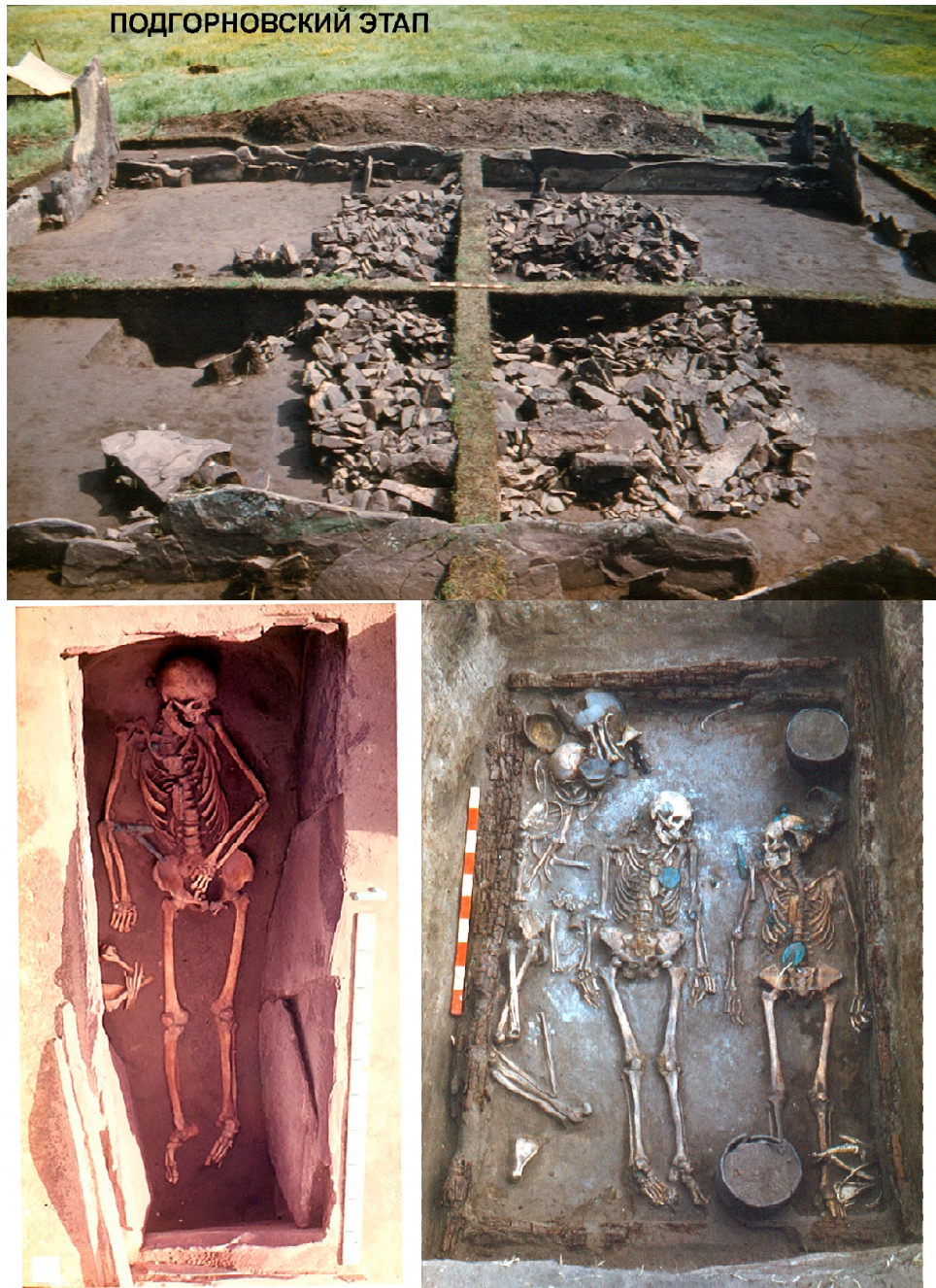


FIG. 5. THE FUNERAL RITE OF THE PODGORNOVO STAGE OF TAGAR CULTURE



FIG. 6: SALBYK

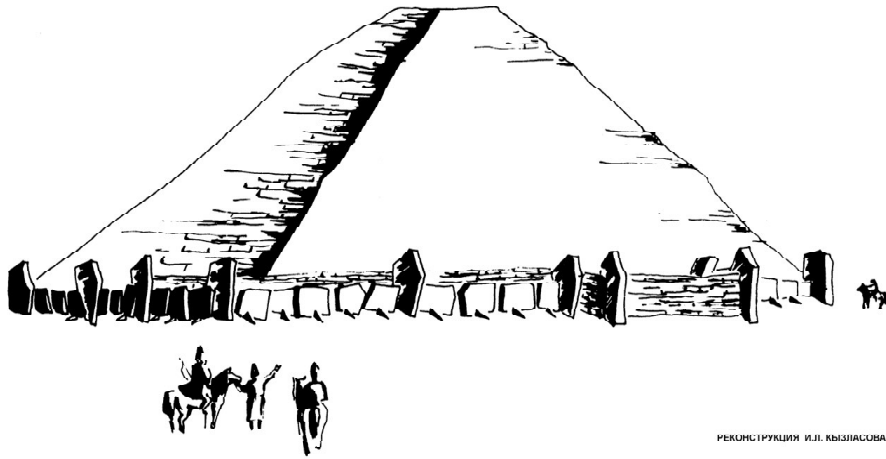


FIG 7: ELITE BURIAL MOUNDS IN THE SALBYK VALLEY.

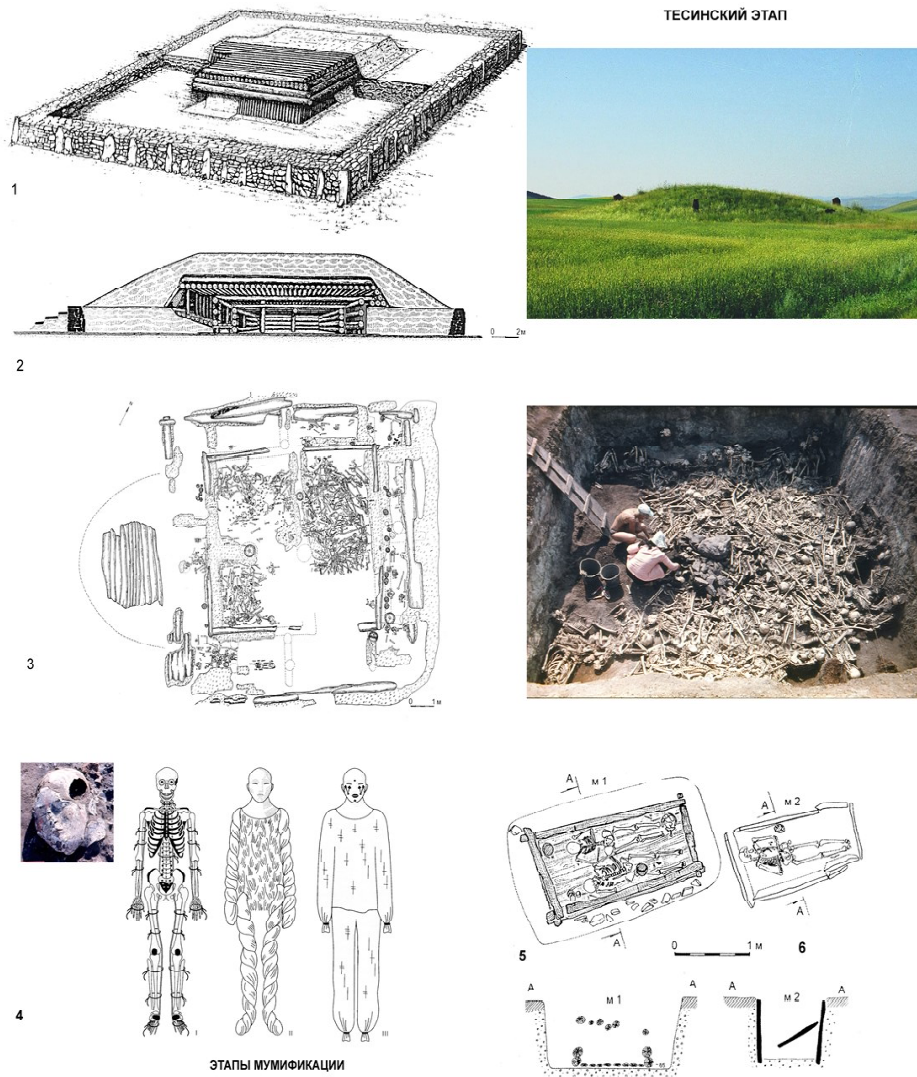


FIG. 8: THE FUNERAL RITE OF THE TES STAGE OF TAGAR CULTURE

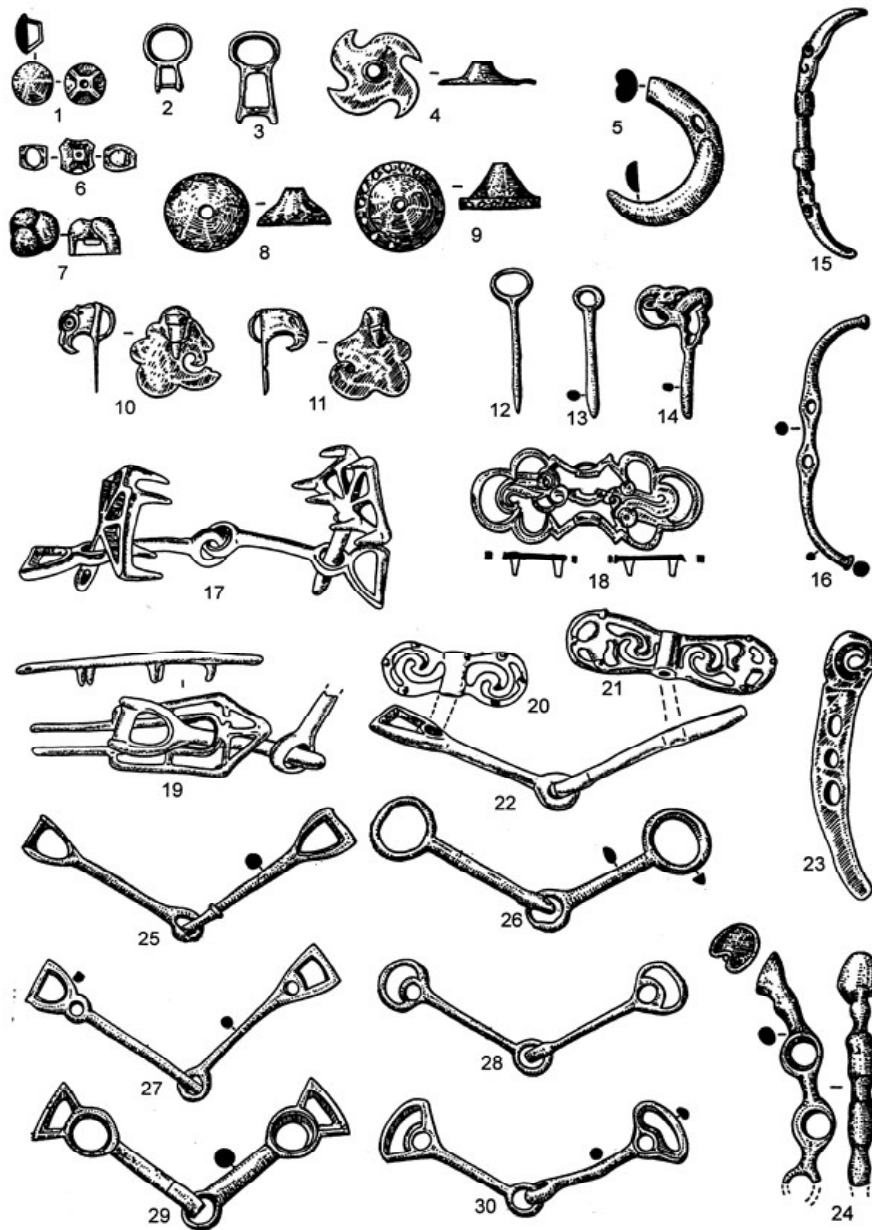


FIG. 9: HORSE EQUIPMENT OF TAGAR CULTURE



Fig. 10: BRONZE CAULDRONS OF TAGAR CULTURE

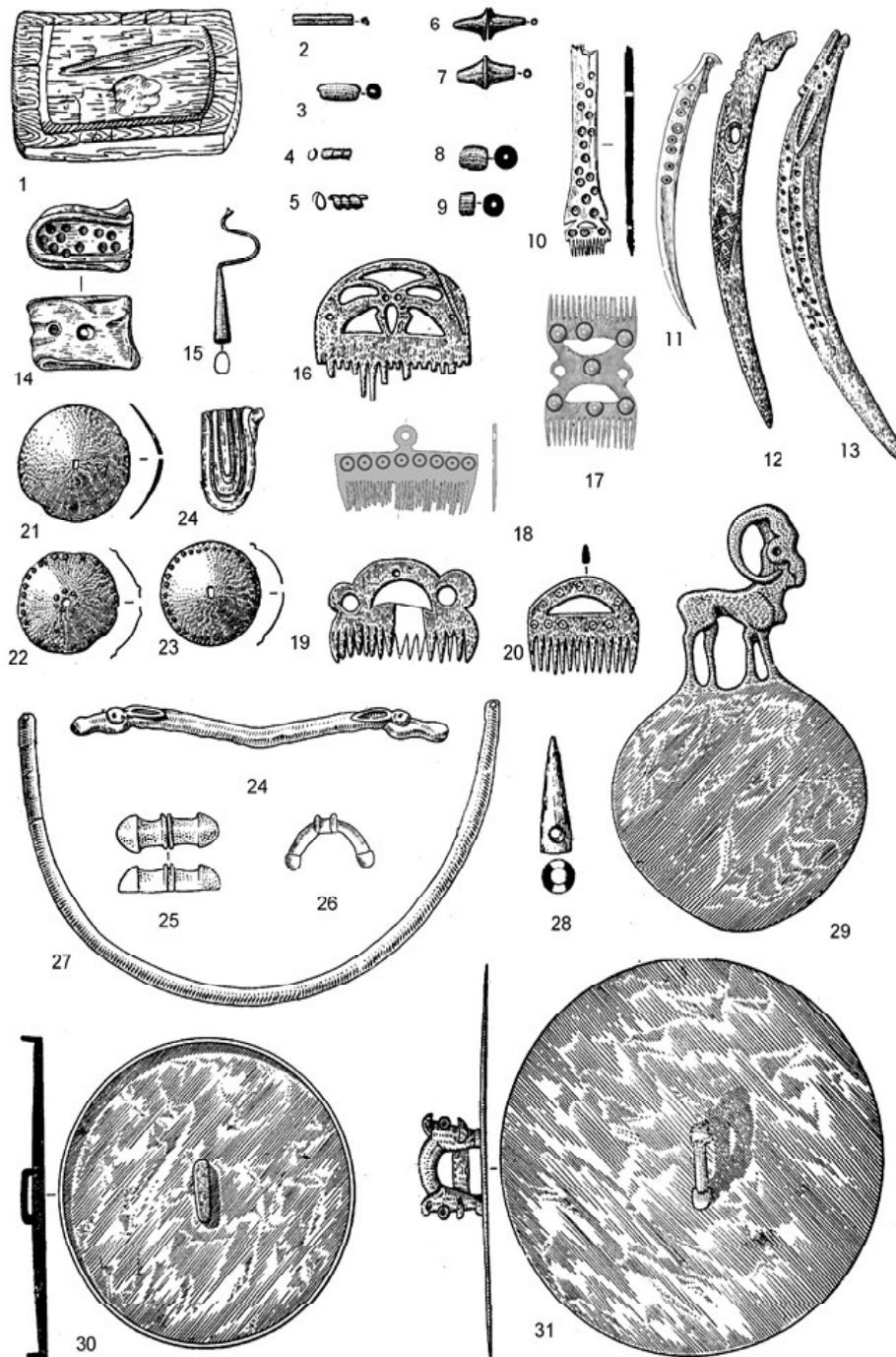


FIG. 11: TOILETWARE OF TAGAR CULTURE

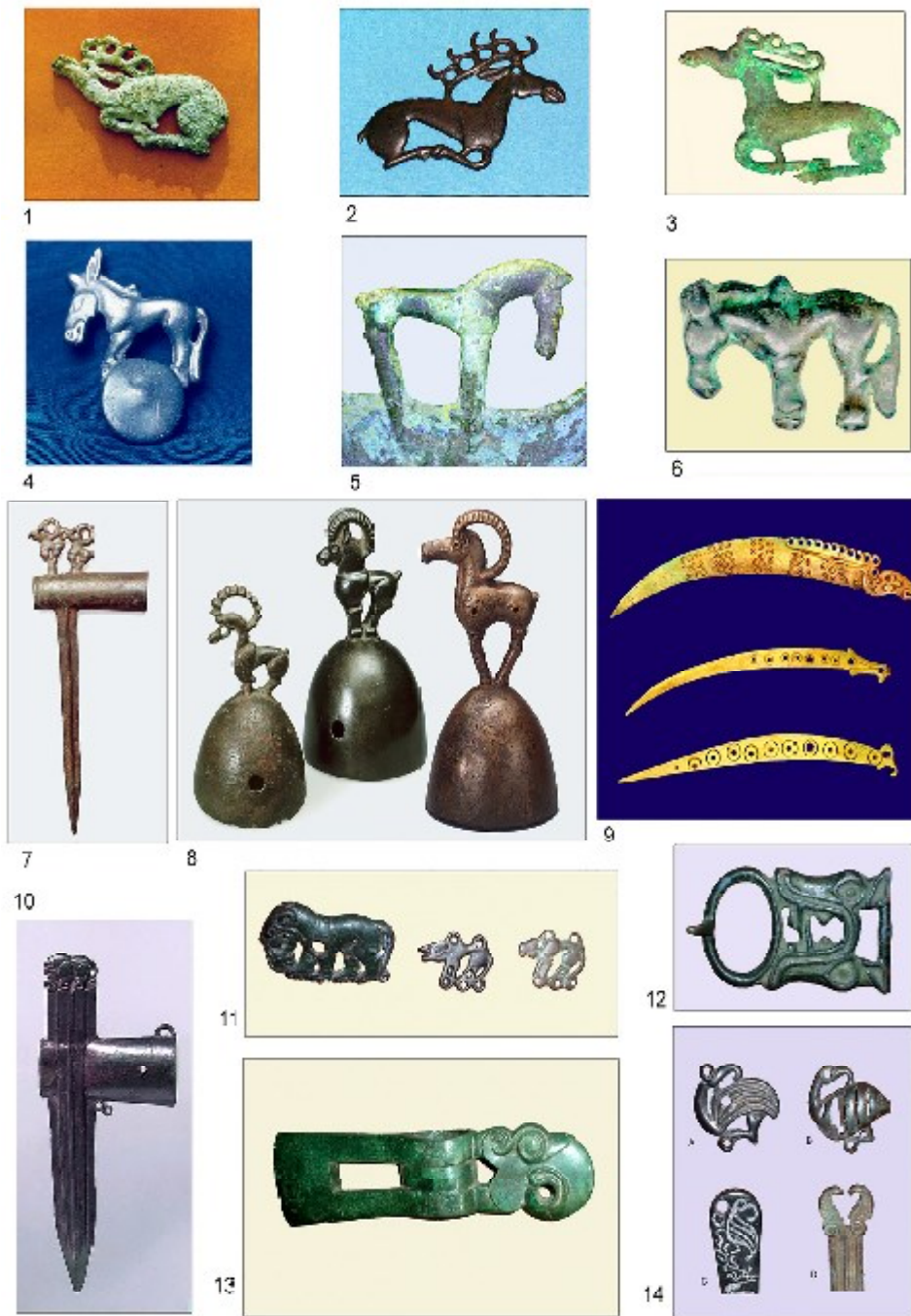


FIG. 12: IMAGES OF THE “ANIMAL” STYLE ON THE ITEMS OF TAGAR CULTURE



FIG. 13: ROCK IMAGES OF TAGAR CULTURE

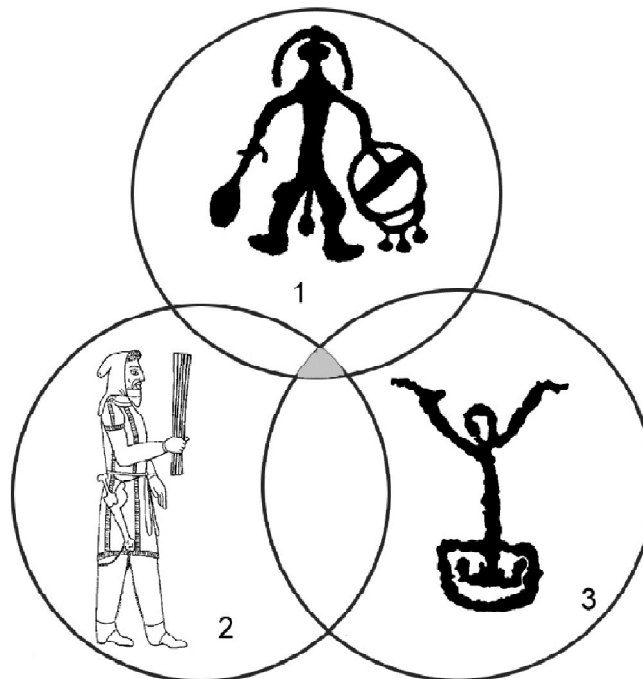


FIG. 14: THE PROPOSED SCHEME OF RELIGIOUS BELIEFS OF TAGAR CULTURE:

1 – SHAMANISM, 2 – ELEMENTS OF ZOROASTRIANISM, 3 – THE NORTHERN VERSION OF BUDDHISM



FIG. 15: THE TAGAR BURIAL GROUND OF SAFFRONOVO

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OBITUARY

ALFRED AR'EVICH POZNYAKOV (17.07.1936 – 31.03.2023)



On March 31, 2023 Alfred Ar'evich Poznyakov, great friend of India, famous traveler, film and photo artist, the Honored Worker of Culture of the Russian Federation, teacher of the Altai Regional College of Culture and Arts, passed away at the age of 86.

Alfred Poznyakov, as member of the Russian Geographical Society, traveled extensively in Russia particularly Siberia with scientific expeditions, Mongolia, India, Kazakhstan. His last expedition in 2019 was to Colombia and Ecuador. From each trip, he brought a lot of photographs and films dedicated to different peoples, their culture, revered shrines. He had an unusually subtle sense of the beauty of nature, and he admired the richness and diversity of cultural of ethnic groups and peoples that inhabit our planet.

Each of his films (more than 30) received several regional, Russian

and international awards. His wonderful films, unique photos and slides are kept in museums of Siberia (in Altai State University, Altai State Pedagogical University, Tomsk State University, Novosibirsk Academic City) and in the Museum of Man in Paris.

Alfred Poznyakov was one of the founders of the Department of Photography and Video Creativity at the Altai Regional College of Culture and Arts, where he taught Fundamentals of Photographic Art, Mastery of Video Shooting and Fundamentals of Cameramanship from 1984 to 2022.

He attracted his students for those involved in scientific expeditions, instilling in them an interest in the study of ethnography, natural and cultural heritage of the indigenous peoples of Russia. Alfred's students work in their specialty in USA, Germany, Moscow, the Altai Republic, in the television companies of Barnaul (Altai Territory).

He wrote more than 100 articles about the culture of Altai, about the history of the development of photography in Barnaul, made a portrait gallery of his contemporaries (archaeologists, culturologists, artists, teachers, etc.). Alfred Poznyakov collected numerous materials about his travels, participation in scientific expeditions, long-term observations of the activities of archaeologists and close cooperation with culturologists and penned down in his monograph *Worldview Born in the Mountains*, the presentation of which took place on the occasion of his 85th birthday. Earlier, he celebrated his 80th birthday with his companions on the Himalayan expedition at the Pensi Pass in Ladakh (India).

Alfred Arieovich was a bright, extraordinary personality. Friendly, sympathetic and attentive, he enjoyed well-deserved respect from colleagues and students.

The memory of such a bright soul and an inexhaustible thirst for creativity, who passionately loved life, will remain in our hearts, and his name will forever be inscribed in the history of the culture of Altai, Russia and beyond.

Irina Zhernosenko



**FEROM LEFT PROF. K. WARIKOO, DR. IRINA ZHERNOSENKO, STASS AND ALFRED POZNYAKOV,
DISCUSSING PLAN FOR EXPEDITION TO INDIAN HIMALAYAS, AT KARAKOL VALLEY,
GORNO ALTAI (JUNE 2015)**

HIMALAYAN AND CENTRAL ASIAN STUDIES is a quarterly Journal published by the Himalayan Research and Cultural Foundation, which is a non-governmental, non-profit research, cultural and development facilitative organisation. The Journal is devoted to the study of various issues pertaining to the Himalayan and trans-Himalayan region in South and Central Asia or parts thereof, connected with its environment, resources, history, art and culture, language and literature, demography, social structures, communication, tourism, regional development, governance, human rights, geopolitics etc.

While the principal concern of the Journal is on its focal area, i.e., from Afghanistan to Myanmar including the Central Asian states of Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, China, Mongolia, Nepal, Bhutan and the Indian Himalayan States of Jammu and Kashmir, Himachal Pradesh, Sikkim, Uttarakhand and North East states; papers with a broad sweep addressing environmental, social, cultural, economic, geopolitical and human rights issues are also welcomed.

The objective is to make a scientific appraisal of the issues confronting the Himalayan and adjoining region in South and Central Asia or parts thereof, and to make specific policy oriented studies and need based recommendations as the means to promote the human, educational and economic advancement of the peoples of the region besides preserving and enriching their ethno-cultural, literary and historical heritage. Promotion of human rights, social justice, peace, harmony and national integration are the other key areas in which the Himalayan Research and Cultural Foundation has been active.

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