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NIZHNYAYA SOORU SETTLEMENT IN CENTRAL ALTAI: SOME OUTCOMES OF THE STUDY AND PROSPECTS FOR FURTHER RESEARCH

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Abstract: More than 150 years have passed since V.V Radlov began the first excavations to study the Afanasievo culture in the Altai. To date, mortuary complexes have provided the majority of cultural and biological material for the Afanasievo culture and have served as the basis for robust analyses and interpretations, even though their potential has not been fully exhausted. Critically, Afanasievo settlements have been very poorly studied. One of the most important reasons for this gap in our knowledge is the lack of surveys for occupational sites of communities in the Altai dating to the end of the 4th to the beginning of the 3rd millennium BCE. The available information on the Afanasievo culture gives hope that this research agenda will be eventually implemented. At the same time, it is important to bring existing results into the scientific literature and analyze available materials with modern methods. This article provides information about the Afanasievo settlement Nizhnyaya Sooru, which was discovered in the Karakol River Valley of the central Altai. In spite of the small scale of previous excavations, the findings attracted archaeological attention and have been described in several publications. Inspection of this settlement in 2019 and 2020 revealed that the cultural deposits were actively being destroyed by erosion. Here, we present our observations, photographs, and a topographic plan of the site, while outlining the prospects of future research at Nizhnyaya Sooru.

Keywords: Altai, Afanasievo culture, Nizhnyaya Sooru, settlement, animal bones, ceramics, stone tools, radiocarbon dating, topographic plan

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ПОСЕЛЕНИЕ НИЖНЯЯ СООРУ В ЦЕНТРАЛЬНОМ АЛТАЕ: НЕКОТОРЫЕ ИТОГИ ИЗУЧЕНИЯ И ПЕРСПЕКТИВЫ ДАЛЬНЕЙШИХ ИССЛЕДОВАНИЙ

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Резюме: Изучение археологических памятников на Алтае, относимых к афанасьевской культуре, насчитывает более 150 лет. Начало этого процесса было заложено раскопками под руководством В. В. Радлова. К настоящему времени при исследовании погребальных комплексов получены существенные по объему научные материалы, которые уже стали предметами всесторонних анализов и интерпретаций, хотя их потенциал до конца не исчерпан. Совсем слабо изученными оказались поселения. Это связано с несколькими факторами, среди которых главный — неосуществленные обследования для специальной фиксации мест проживания населения Алтая в конце IV — начале III тыс. до н.э. Имеющиеся сведения позволяют надеяться на перспективность такого направления работ. При этом важно ввести в научный оборот ранее полученные результаты и на современном уровне проанализировать имеющиеся материалы. В данной статье представлена информация о поселении Нижняя Соору, которое было обнаружено в одной из горных долин Центрального Алтая. Несмотря на незначительные по объему раскопки, были получены находки, которые привлекли внимание исследователей, что нашло отражение в нескольких публикациях. Осмотр указанного поселения в 2019 и 2020 гг. обозначил проблему дальнейшего разрушения культурного слоя. Зафиксированные наблюдения, полученные фотографии и тахеометрический план памятника представлены в данной статье. Обозначены перспективы дальнейших исследований.

Ключевые слова: Алтай, афанасьевская культура, Нижняя Соору, поселение, кости животных, керамика, каменные орудия, радиоуглеродное датирование, тахеометрический план

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Introduction

For several decades in Eurasian archaeology much attention has been paid to the so-called Afanasievo culture, the sites of which have been studied over a large region — not only in Russia (Altai, Khakasia, Tuva), but also in Eastern Kazakhstan, China (Xinjiang) and Mongolia [Tsyb, 1984; Pogozheva et al., 2006; Burial and settlement complexes..., 2006; Afanasiev Collection, 2010; Afanasiev Collection 2, 2012; Vadetskaya, Polyakov, Stepanova, 2014; Kovalev, 2019; Merz, 2021; Honeychurch et al., 2021; et al.]. Of course, expansion and refinement of the delineated range of the Afanasievo culture is not excluded. In this situation, there is a need to align the accumulated information with the concepts that characterize the archaeological materials at various taxonomic levels. It is absolutely clear, that the available volume of data raises the question on designation of a cultural-historical community, for which there may be sense in abandoning the name “Afanasievo”. Regional manifestations of this phenomenon should be considered as separate archaeological cultures, not excluding the identification of local variants [Masson, 1976, fig. 1] and consideration should be made to special types of sites. Therefore, one of us has already expressed the idea of designating the Saldyar culture of the Afanasievo period in the Altai [Surazakov and Tishkin, 2007, p. 86; Tishkin and Seregin, 2012, p. 202; Tishkin, 2018, p. 30], based on the materials of Saldyar-I monument, published as a monograph [Larin, 2005].

The possibility of revised designations for the Afanasievo culture requires additional discussions, although the cultural specificity of the studied sites is clearly observed in the known cultural areas, among which the Altai Mountains are paramount. The peculiarities of the Afanasievo culture are mainly based on the results of research on human burials. Such excavations in 1865 were carried out by V. V. Radlov [Kiryushin, 1985], and later under the leadership of S. I. Rudenko in 1924, 1925 and 1929 [Rudenko, 1926; Vadetskaya, Polyakov, and Stepanova, 2014, pp. 34–35; Konstantinov et al., 2018, p. 19]. In the 1930s, they were continued by G. P. Sergeev, G. P. Sosnovsky, and S. V. Kiselev [Sosnovsky, 1941; Kiselev, 1951, pp. 55–59; Vadetskaya, Polyakov, Stepanova, 2014, p. 3; et al.]. The results of this work and later studies were reflected in two dissertations [Tsyb, 1984; Fribus, 1998]. A brief history of the study of the Afanasievo culture of the Altai was published by O. V. Larin [1988]. By the present time there has been published a summary of the sites of the Altai Afanasievo culture [Vadetskaya, Polyakov and Stepanova, 2014, pp. 5–120]. Most of the materials from the mortuary complexes have been analyzed in different aspects [Ancient cultures..., 1994; Larin, 2005; Pogožheva et al., 2006; Grushin et al., 2006; Stepanova, 2019; etc.]. Unfortunately, targeted excavations of settlements were seldom carried out. The obtained materials were put into scientific circulation [Abdulganeev, Kiryushin, and Kadikov, 1982; Pogožheva et al., 2006, pp. 18–26; Mamadakov and Stepanova, 1998; Shulga, 2012; Vadetskaya, Polyakov and Stepanova, 2014, pp. 6–7, 9, 15–16, 23–24, 26–31, 33–34, 36–37, 40–41], but their impact was small. It is the study of the settlements that is worth paying close attention to at present. Such monuments are important for gaining a complete picture when reconstructing the subsistence of the Altai population at the end of the 4th and beginning of the 3rd millennium BCE. Therefore, the purpose of this article is to present small but important results of the study of the Nizhnyaya Sooru settlement located in the Central Altai (Fig. 1.-1). On this basis, it is worth considering the prospects of its excavation.

The Nizhnyaya Sooru settlement is situated about 2 km south-eastward from Kulada village in the Ongudai region of the Altai Republic (Russia) on the first terrace of the Karakol river near to the modern cattle farms (Fig. 1.-2). The geographic coordinates of its location, fixed by GPS-receiver (WGS-84), are as follows: N — 50° 40.069', E — 085° 48.483' (± 4 m). The altitude above sea level, demonstrated by the same instrument, was about 1110 m, indicating a mid-mountain zone, which covers the largest area of the Central Altai and has its own geographical features [Kiryushin and Tishkin, 1997, p. 94–97]. The characteristic intermountain valley in the Nizhnyaya Sooru valley, gradually descends and widens closer to the flood plain. According to the local residents of the valley, this lower section is not covered by snowpack in winter because the winds prevent snow accumulation. This circumstance allows cattle to feed on the remaining dry grass in winter, in addition to the use of cultivated fodder. Most likely, the setting of the local valley was an important factor in selecting the area for ancient and modern cattle husbandry.

History of the study of the settlement and the recovered materials

In the Nizhnyaya Sooru valley, many mortuary and memorial sites have been recorded, which belong to the Afanasievo period, Pazyryk culture, Turkic communities, and modern times. Early Turkic fences were partially investigated by A. S. Vasyutin [Seregin, Vasyutin, 2021]. The results of the excavations of sites attributed to the Eneolithic [Seregin, Vasyutin, 2020], which can be correlated with the Nizhnyaya Sooru settlement, should be mentioned.

Ancient and modern cult places [Ilyushin, 2011], as well as the results of pictorial activity [Mukhareva, Miklashevich and Seregin, 2021], were identified.

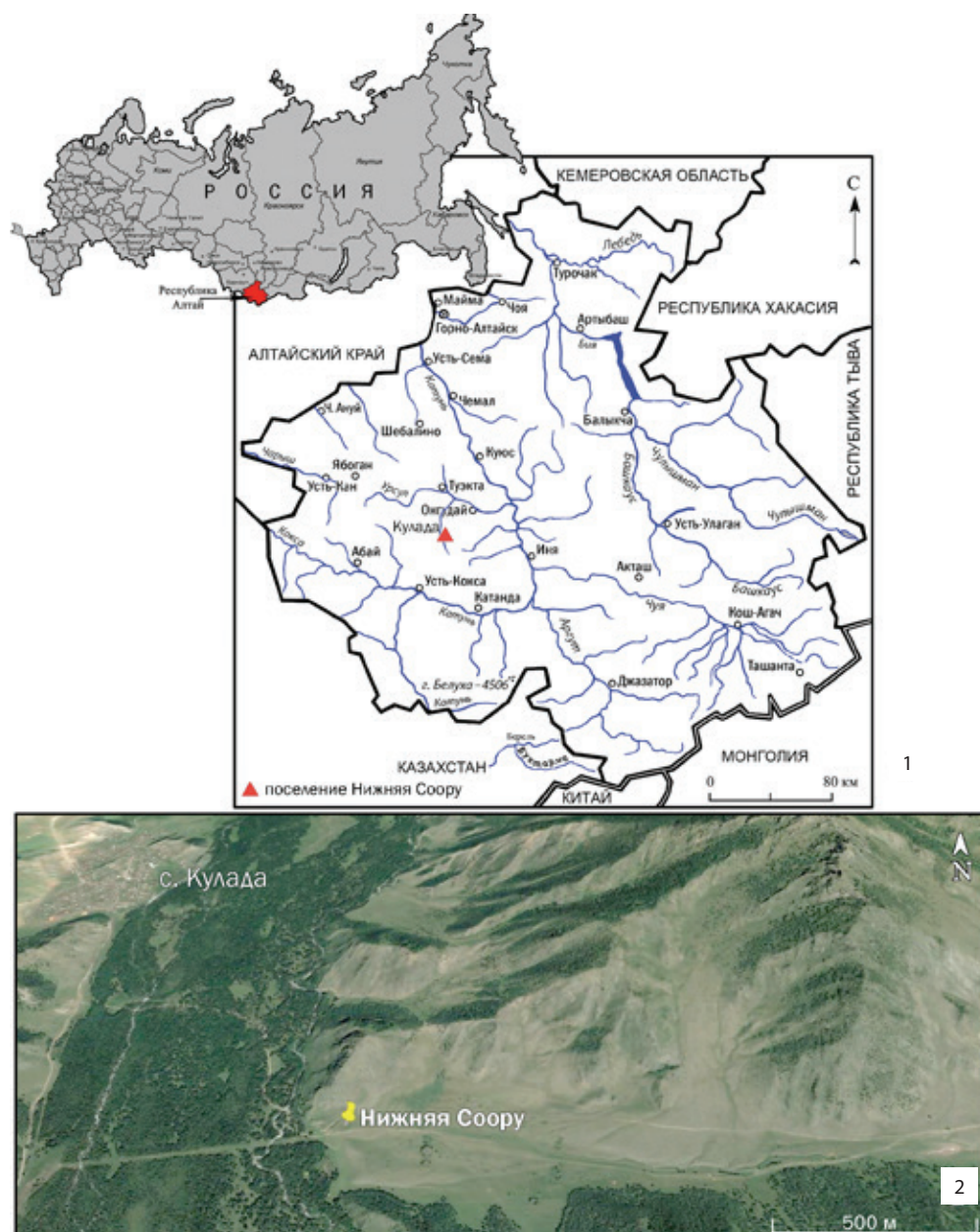


Fig. 1. The location of the settlement of Nizhnyaya Sooru:
 1 – on the schematic map; 2 – on a picture from space
 Рис. 1. Место расположения поселения Нижняя Соору:
 1 – на карте-схеме; 2 – на снимке из космоса

The Nizhnyaya Sooru settlement was revealed in 1994 by the Altai archaeologist O. V. Larin, while inspecting the growth of an erosional ravine into the site's boundary. In prevent destruction of the cultural layer, an excavation with an area of only 2.4 square meters was made at the same time [Yelin and Larin, 1998, pp. 66–67]. Information about the findings has been published in detail [Larin, Kungurova and Stepanova, 1998; Kosintsev, 2005]. In 1997 another researcher from Gorno-Altaysk V.A. Kocheev again examined the site and collected surface material [Larin, Kungurova, Stepanova, 1998, p. 67], which is probably stored in the A. V. Anokhin National Museum of the Altai Republic (Gorno-Altaysk). In autumn 1998, the cultural layer of the settlement was examined by Yu.T. Mamadakov and A.A. Tishkin during the Altai excursion with their German colleagues from Dresden (Germany). Very small collections of pottery and bone fragments were obtained, and stone products from the Middle Paleolithic site of the Mousterian industry were found at a nearby quarry [Kungurov and Tishkin, 2000]. At the end of July 2019 (during a planned expedition to Mongolia) further erosion of the settlement was noted and geographical coordinates were recorded by an archaeological detachment of Altai State University led by A. A. Tishkin.

Small excavations at the Nizhnyaya Sooru settlement were planned in 2020. However, due to the pandemic, the expedition did not take place, although S.P. Grushin received an excavation permit. When visiting the monument, it was possible to photograph the extent of the archaeological site and the nature of its erosion (Fig. 2.-1). In particular, it was observed that the cultural deposits were overlaid by a dense layer of coarse gravel, as well as subsequent alluvial deposits, which over time had formed a layer about 0.6 m thick and was already well sodded (Fig. 2.-2, 3). In some places, a carbonaceous layer was observed (Fig. 2.-4), as well as in the precipice of the ravine there was a visible firepit (Fig. 2.-2).

The thickness of the cultural layer of the Nizhnyaya Soru settlement excavated in 1994 was about 0.16 m. Cultural material (pottery, stone items, animal bones) was rather densely accumulated. The excavation exposed a rectangular feature, embedded in the C horizon (materik) and consisted of four stone slabs (32×25×3–4 cm in size). The bottom of the feature also appeared to be lined with slabs. Soot on the inner walls of the feature suggested it was a hearth. The excavation yielded 33 lithic artifacts, which were analyzed in detail and wear-trace determinations were made [Larin, Kungurova, Stepanova, 1998]. The main lithic finds were chips and splinters. Three blades of irregular outlines were found, which were made with a rather simple technique of cleavage. During the use wear analysis, N. Yu. Kungurova identified three splinted pieces, saws, and burins, indicating that they were used in the manufacture of wooden products. Three grinding tools, which could be used for processing metal objects and a so-called “iron” for smoothing seams on leather items were also found. Two fragments of clay spindle whirls were found. One of them was made from a fragment of a vessel. The recovered ceramic assemblage represents about 25 vessels, including a censer. It was not possible to restore the vessels completely. It was noted that some fragments stylistically differ from the typical Afanasievo pottery [Larin, Kungurova and Stepanova, 1998, p. 72].

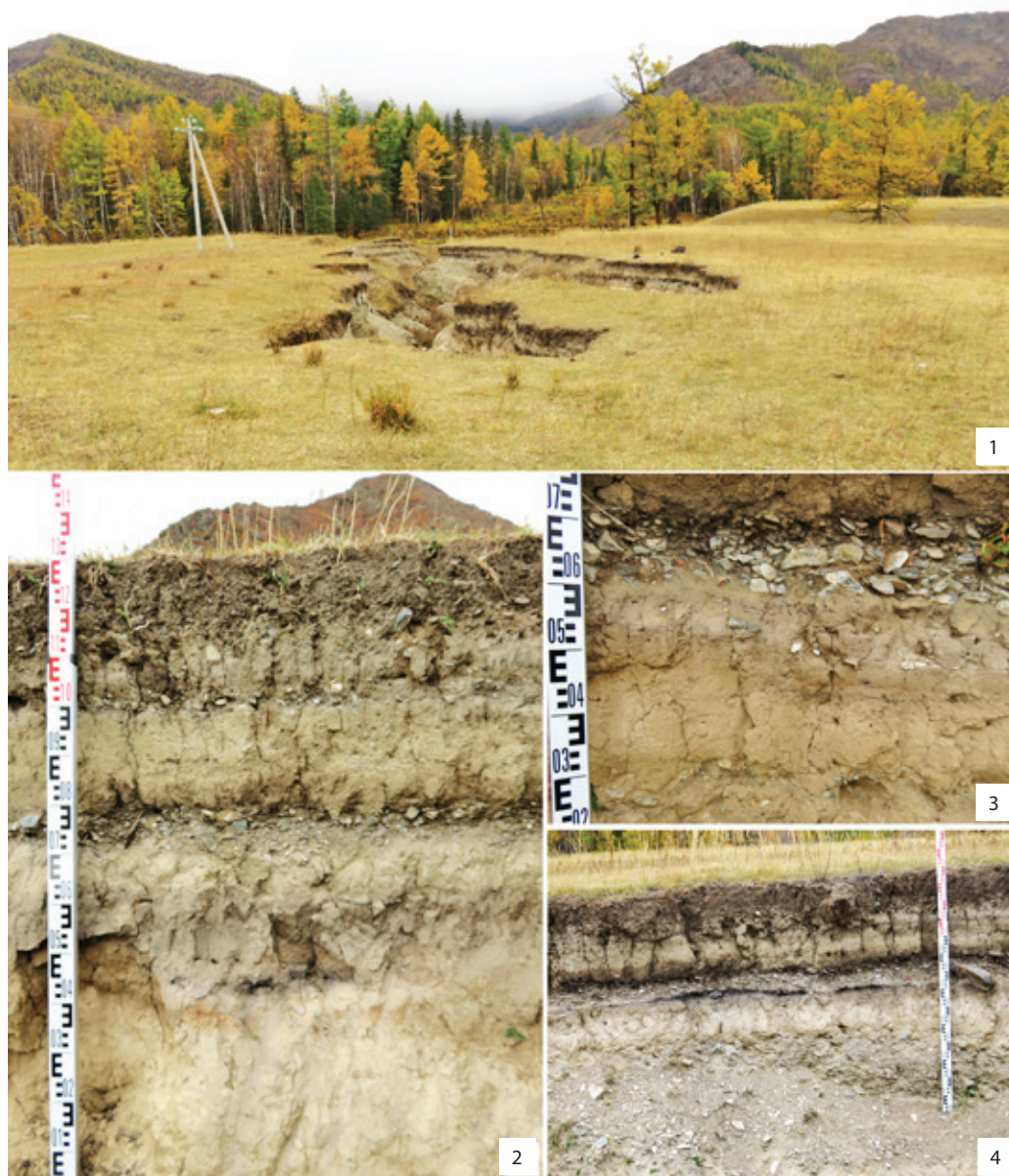


Fig. 2. Nizhnaya Sooru: 1 – the modern type of destruction; 2 – the wall of the broken ground; 3 – the cultural layer; 4 – the carbonaceous layer

Рис. 2. Нижняя Соору: 1 – современный вид разрушений; 2 – стенка оврага; 3 – культурный слой; 4 – углистая прослойка

The excavation recovered bones of cattle (41 specimens), caprines (229 specimens), horse (4 specimens), wild animals (separate specimens from deer, fox, badger) and indeterminate remains, of which 198 specimens are closer to mammals. All skeletal elements attributed to caprine belonged to sheep (probably from 19 individuals). According to the wear stages of faunal teeth, P. A. Kosintsev distinguished the following age groups: 6–12 months, seven individuals; 12–24 months, five individuals; over 24 months, seven individuals. This age composition allowed him to point to the meat productive strategy of sheep husbandry. It was also noted that the sheep of the Afanasievo culture were smaller than the sheep of the Early Bronze Age in southwestern Siberia and Northern Kazakhstan, as well as the Sintashta community [Kosintsev, 2005].

On the basis of the analyzed materials the Nizhnyaya Sooru settlement was attributed to the Afanasievo culture, but absolute dating was not performed. The importance of studying the site as one of the most “pure” of the Afanasievo culture was noted [Larin, Kungurov and Stepanova, 1998, p. 72].

Problems and their discussion

Selected sheep teeth from the excavations of the Nizhnyaya settlement became the basis for paleogenetic analysis and AMS dating [Hermes et al., 2020]. But before proceeding to a brief overview of these results, it is worth paying attention to some relevant points related to the origin of the Afanasievo culture, the interest in which is recently “heated” by paleogenomic research, during which close genetic affinity between individuals of the Yamnaya cultural community and individuals of the Afanasievo culture (community) was established. On this basis, an unambiguous conclusion is made about the migration of the eastern “Yamnaya” to the region of South Siberia and a corresponding arrow is prominently drawn on the map of the Eurasian steppes representing the early Bronze Age [Allentoft et al., 2015, p. 169, fig. 1]. It makes sense to discuss this situation, as the fact of the alleged mass migration is not so obvious archaeologically and is very problematic. More probable, in our opinion, should be considered the migration of closely related (“pre-Yamnaya”) people from one center but in different directions to the Volga and farther east, but not through Northern Kazakhstan, where a completely different (Botai) community prevailed, but possibly through the region of present-day central Kazakhstan. This hypothesis requires testing. However, at the present stage such a point of view does not contradict the available archaeological materials and has already been expressed in a relatively similar form [Fribus, 2006]. The migrants who arrived in Altai, within a narrow time window and nearly across the whole region, found the mountain-valleys suitable for pastoralist herding. In this way, they reconfigured their subsistence strategies that differed sharply from local strategies, which were based on Neolithic foraging and hunting. It is possible that earlier Afanasievo people (before the Altai was reached) lived in similar montane ecosystems. Otherwise they may have stopped in the resource-rich Ob-Irtysh interfluvium, as the bearers of the Elunino culture did at the end of the 3rd millennium BCE [Kiryushin, 2002, p. 82–91]. But, it seems, a choice was made in favor of familiar mountain landscapes for pastoralist production. Here, it is worth mentioning that the population of the Andronovo culture did not occupy the Altai Mountains but instead they densely occupied the surrounding foothills in the middle of the 2nd millennium BCE. This pattern is well evidenced by the results of archaeological research. The famous Russian archaeologist M. P. Gryaznov [1955, 1957]

directly connected the cause of the absence of Bronze Age sites in the Altai Mountains with the economic system of the Andronovo culture (community) being better suited to the lower plains.

The chronological designation the Afanasievo community in the Altai requires clarification. In some publications it is indicated as Eneolithic [for example: Seregin, Vasyutin, 2020], in others as Early Bronze Age [for example: Dashkovsky, Stepanova, 2018], as well as the Bronze Age [for example: Burial and settlement complexes..., 2006] or the Paleometallic era [for example: Dashkovsky, 2019]. The chronological framework of the sites of Afanasievo cultural community studied using radiocarbon dating is defined in a broad chronological framework: from the 2nd half of 4th to the 1st half of 3rd millennium BCE [Poliakov and Svyatko, 2009, pp. 25–27, fig. 3; Kiryushin et al., 2010, p. 61], which nicely corresponds to the Eneolithic period. This conclusion is also supported by the fact that no bronze artifacts were found in any of the Altai sites of that time. It is clear that Afanasievo metallurgy was limited to copper working [Grushin et al., 2009, pp. 7–23].

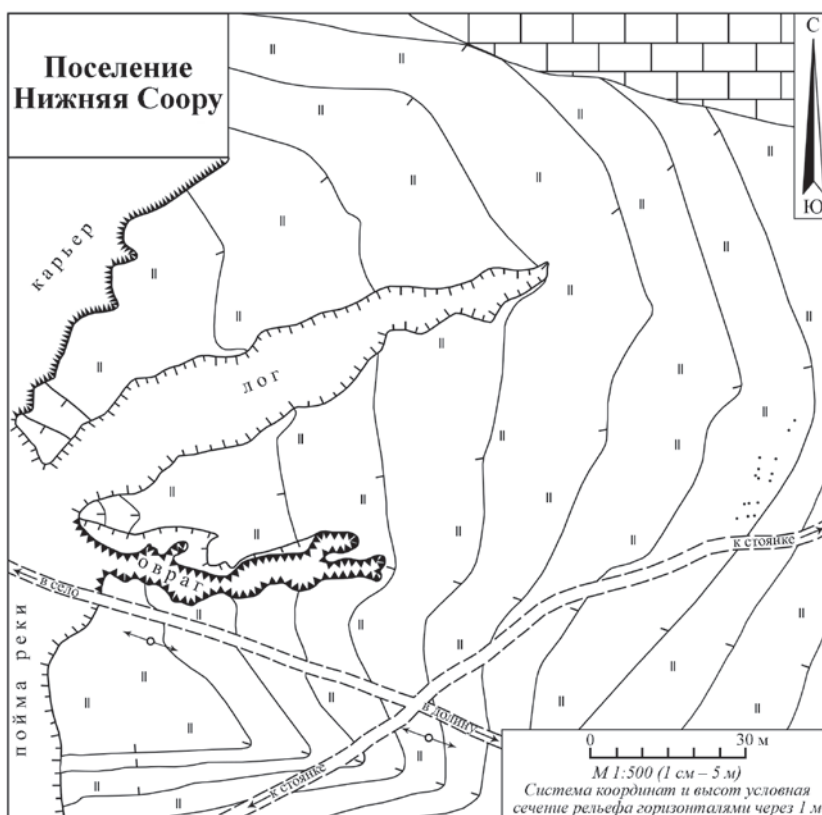
The AMS dating of sheep teeth from the Nizhnyaya Sooru settlement and materials from other sites in the Altai (Maly Dugan, Pervy Mezhelik-I) not only marked a chronological interval of 3300–2900 BCE [Hermes et al., 2020], but also pointed to the need for further work on this topic. These dates partially confirmed the previously obtained radiocarbon determinations for the Afanasievo culture. However, the solution of the chronological issues for the sites of the Altai Eneolithic period is still far from reach. No less important were the results of the initial stage of the paleogenetic study of domestic sheep [Hermes et al., 2020]. In our opinion, studies of the osteological materials of these animals together with other data will allow for the determination of the origins of the Afanasievo phenomenon, while also isolating the waves of community movements to the region.

Conclusion

There is significant prospect for further research at the Nizhnyaya Sooru settlement. By the present time a topographic plan (Fig. 3) has been obtained, which reflects the erosional situation with the site and highlights the importance of excavations. In addition, geophysical surveys of one of the sites have been conducted. The results of electrotomography are still in progress. The surveys indicate the spread of the cultural layer to the north of the ravine. It is not fixed in the southern wall.

The Nizhnyaya Sooru settlement is a rescue site, which raises the urgency of thorough archeological excavation. The experience of previous works allows us to count on obtaining large amounts faunal skeletal remains for traditional zooarchaeological analysis, proteomics (Zooarchaeology by Mass Spectrometry — ZooMS), paleogenomics, and AMS dating. A separate problem is the determination of the importance of domesticated horses in Afanasievo subsistence. For this, the available finds are still scarce. A separate project remains to be done to further study pottery and stone artifacts, as well as to establish their geographic sources. It makes sense to carry out palynological and phytolith analyses for environmental reconstructions. Observations of the geomorphological plan are important to understand the processes that took place before and after the formation of the cultural layer. It is crucial to understand the cause of formation of the massive gravel layer, which overlapped and partially disturbed the cultural layer. Thus, future excavations will significantly complement

and implement the modern program of multidisciplinary research, which will provide critical new information about the still poorly understood Afanasievo culture.



Условные обозначения

	— граница карьера		— полевая дорога		— линия электропередач
	— граница лога		— граница оврага		— оstepненный участок
	— горы		— вертикальные камни		— линия горизонтали

Fig. 3. Nizhnaya Sooru. Topographic plan
Рис. 3. Нижняя Соору. Тахеометрический план

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