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## REVIEW OF PRELIMINARY RESULTS OF ARCHAEOLOGICAL RESEARCH IN THE AREA OF MOUNT AIYRTAS IN 2022, CENTRAL KAZAKHSTAN

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**Abstract.** The mountainous area of Aiyrtas is located in the Karkaraly district of the Karaganda region. There, in previous years, the first sites of the early Iron Age were discovered and explored. Among them, eight mounds from three burial grounds were excavated, and settlements of the early Iron Age, Kazakh winterings were also found. In the summer of 2022, under the guidance of the author, a strip 2.6 km long was identified on the upper slope of the mountain, where 8 settlements of the early Iron Age are compactly located. Excavations of the Aiyrtas-3 settlement were carried out. On an area of 432 m<sup>2</sup>, remains of stone foundations of dwellings and outbuildings were discovered, which, judging by the finds of stone tools and ceramics, belong to two historical eras: the Late Bronze Age and the Saka period. At the same time, questions of the chronology of the upper level of buildings (structures 1–3) will be corrected in the course of obtaining the results of radiocarbon analyses. A few iron objects are associated with the top layer of the site. In the course of research, old Kazakh winterings were discovered, among which, as the author believes, there are earlier ones than those studied in previous years.

**Key words:** Central Kazakhstan, Mount Aiyrtas, Early Iron Age, Tasmola culture, settlements, old Kazakh winter quarters

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## ОБЗОР ПРЕДВАРИТЕЛЬНЫХ РЕЗУЛЬТАТОВ АРХЕОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ В РАЙОНЕ ГОРЫ АЙЫРТАС В 2022 Г., ЦЕНТРАЛЬНЫЙ КАЗАХСТАН

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**Резюме.** Горная местность Айыртас находится в Каркаралинском районе Карагандинской области. Здесь в предыдущие годы были открыты и исследованы первые памятники раннего железного века. В том числе были раскопаны восемь курганов из трех могильников, а также найдены поселения раннего железного века, казахские зимовки. Летом 2022 г. под руководством автора на верхнем склоне горы была выявлена полоса длиной 2,6 км, где компактно расположены восемь поселений раннего железного века. Проведены раскопки поселения Айыртас-3. На площади 432 кв. м открыты остатки каменных оснований жилищ и хозяйственных построек, относящихся, судя по находкам каменных орудий и керамики, к двум историческим эпохам: эпохе поздней бронзы и сакского периода. Вместе с тем вопросы хронологии верхнего уровня сооружений (сооружения 1–3) будут корректироваться в ходе получения результатов радиоуглеродных анализов. С верхним слоем памятника связаны немногочисленные железные предметы. В ходе исследований обнаружены старые казахские зимовки, среди которых, как полагает автор, имеются более ранние, чем те, которые исследовались в предыдущие годы.

**Ключевые слова:** Центральный Казахстан, гора Айыртас, ранний железный век, тасмолинская культура, поселения, старые казахские зимовки

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### **I**ntroduction

Mount Aiyrtas, in the area of which archaeological research was carried out, is located on the territory of the Karkaraly district of the Karaganda region of the Republic of Kazakhstan. It is located at a distance of 80 km in the east-southeast direction from the city of Karkaraly.

“Aiyr” in the Kazakh language means something forked, for example, a pitchfork. For the rocky landscape of the Kazakh upland, abounding in various uplifts in the relief, this expression often indicates a hill, which has a small saddle in the middle. If we take into account that “tas” in the Kazakh language is a stone, then we can understand the following meaning of the word Aiyrtas — “Forked stone”, that is, a mountain that has a saddle at the top when viewed from the side. Even at the first glance at this area, it turned out that the name coincides with the peculiarity of this mountain.

The peak with a saddle is located in the northwestern part of the mountain range. Here is the modern cattle breeding farm Aiyrtas, at a short distance from which to the southeast there are two more — Japar and Yestek. It is with this part of the entire mountain range that the main sites of the ancient era are associated.

Our scientific expeditions to Aiyrtas already have their history. In 2014, and 2019 here 8 burial mounds of the early Iron Age were investigated as a part of three burial grounds — Aiyrtas-1, Aiyrtas-2, and Yestek. The main part of the excavated sites belongs to the Tasmola culture of the early Iron Age of Central Kazakhstan. Some burials that did not contain dating materials, except fragments of iron products, may also belong to later periods. Also, in an article devoted to these materials, it was specifically indicated that it was necessary to search for settlements of the early Iron Age at that place (Beisenov, Shashenov, 2020).

Two skulls from two kurgans from the burial grounds of Aiyrtas-1 and Yestek, belonging to the Tasmola culture, were studied by anthropologists and published (Beisenov et al., 2015).

In 2021, the next trip took place, during which small settlements of the early Iron Age were discovered near the Aiyrtas farm, located in gorges, among stone peaks and rocks. Another result of this exploration expedition was the discovery of old Kazakh winter quarters.

In the summer of 2022, research on the sites of Mount Aiyrtas was continued. The archaeological expedition worked in two groups. The main group was engaged in excavations of the settlement of the early Iron Age Aiyrtas-3, the second group carried out reconnaissance to search for and document the sites in the area of Mount Aiyrtas. The archaeological season on Mount Aiyrtas took more than one month. During this time, one settlement was excavated, new burial grounds and single mounds of the early Iron Age and the Middle Ages were found, as well as old Kazakh winters. During these searches, the distant outskirts of the Aiyrtas mountain range were also examined. Special work is required to process and comprehend all this data. This report presents brief results of the studies.

### **Materials and Discussions**

The Aiyrtas mountain area stretches from northwest to southeast, about 10 km long. The highest points have an absolute height of more than 1000 m. The elevation is characterized, especially in high areas, by rather steep slopes, and densely indented beams. Numerous bedrock outcrops are well recorded. The carbonaceous rocks that make up the mountains are overlain by eluvial-deluvial deposits. Chestnut soils are covered with forb steppe vegetation, where sagebrush-fescue communities predominate. There are many thickets of steppe acacia (karagan) here.

Large plains are located on the northern, northeastern, and eastern sides of the mountain. From the west and south, the relief is hillier. The whole area is bordered from the west, north, and east by the channels and dried-up branches of two steppe rivers. This is the Tundik River, quite well-known in the landscape of the eastern part of the Kazakh uplands, flowing to the west of Mount Aiyrtas in a northeasterly direction. The second river Aigyrzhal flows from the southeast and flows into the river Tundik, its right tributary. About the Tundik River, the district under consideration is included in the area of its upper reaches.

Before our expeditions, archaeological research was not carried out in the area of Mount Aiyrtas. The works of 2022 turned out to be the most ambitious when our first excavations were carried out at the settlement and many distant corners of Aiyrtas were examined.

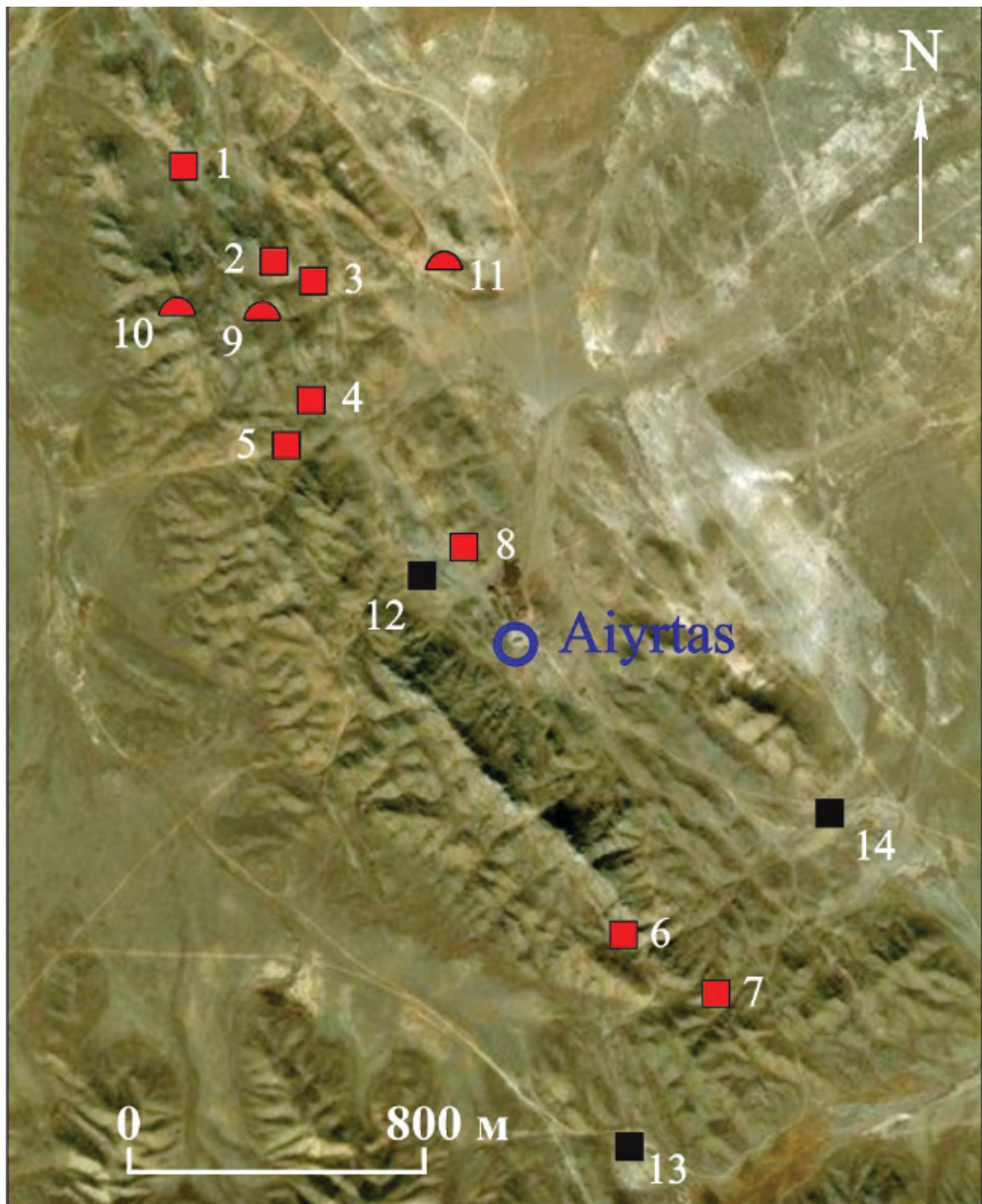


Fig. 1. Main research area: 1–8 – settlements of the early Iron Age Aiyrtas-1 – Aiyrtas-8; 9, 10 – kurgan Aiyrtas-1 and Aiyrtas-2; 11 – Early Iron Age burial ground Aiyrtas-4; 12–14 – old Kazakh winters Aiyrtas-1, Aiyrtas-2, and Aiyrtas-3

Рис. 1. Район основных исследований: 1–8 – поселения раннего железного века Айыртас-1 – Айыртас-8; 9, 10 – курганы Айыртас 1 и Айыртас-2; 11 – могильник раннего железного века Айыртас-4; 12–14 – старые казахские зимовки Айыртас-1, Айыртас-2 и Айыртас-3



Fig. 2. Aiyrtas-4 burial ground

Рис. 2. Могильник Айыртас-4

When presenting an overview of the main results, the main research areas should be indicated. This is the vicinity of the modern Aiyrtas farm, where one compact group of settlements of the early Iron Age is located. The prepared map included precisely the monuments of this small area (Fig. 1).

Here, along a 2.6 km long strip, eight settlements, two mounds, and one burial ground of the early Iron Age were recorded. Three old Kazakh winters are marked separately on the map. In addition, the areas of four settlements, Aiyrtas-2, Aiyrtas-4, Aiyrtas-5, and Aiyrtas-6, are almost completely occupied by old Kazakh winterings. On the territory of another settlement, Aiyrtas-8 (Fig. 1.-8), there are small Kazakh graves. A survey of this area showed that these graves are associated with the wintering of Aiyrtas-1 (Fig. 1.-12), which is located not far from the settlement. Thus, out of seven old Kazakh winter quarters, four are located on the territory of ancient settlements, and three are isolated. All settlements and old winters are located high, at around 900–950 m.

Several other sites are located outside the indicated range (Fig. 1).

Near the modern Asylbek farm, on the bank of a small spring, one settlement of the Bronze Age was found. Not far from the Yestek farm there is one settlement of the early Iron Age, the territory of which is also occupied by the ruins of an old Kazakh wintering. This site is located 3.5 km from the settlement of Aiyrtas-7 to the southeast.

In the valley, located on the northern and northeastern sides of the mountain and where a wide panorama opens from the peaks of Aiyrtas, there are funerary sites. These are burial grounds and single kurgans. Most of them are undoubtedly associated with the Early Iron Age, there are also burial mounds from the Middle Ages.

The Aiyrtas-4 burial ground (Fig. 2) is the closest to the Early Iron Age settlements. From the settlement of Aiyrtas-3, where the excavations were carried out, to this burial ground is 360 m.

To the southeast of the Aiyrtas farm, numerous old Kazakh winters were found in gorges and small narrow valleys. Upon closer inspection, sites of ancient settlements can be found near them or under them.

In 2022, excavations were carried out at the Aiyrtas-3 settlement. This site is located on the northeastern high slope of the mountain (Fig. 3), in a natural niche resembling a foundation pit, which is closed on the northern and eastern sides by two more ridges. Even during the first inspection of the settlement, it was clear that its area has two sectors. In the southern part, three buildings were compactly located (Fig. 3), in the northern part there were heavily destroyed and weakly expressed other structures. Therefore, two excavations were made on the site. The total excavation area is 432 m<sup>2</sup>.



Fig. 3. Settlement Aiyrtas-3. Excavations I and II

Рис. 3. Поселение Айыртас-3. Раскопы I и II



Fig. 4. Excavation I. A – view during the first cleaning of structures and surfaces. B – view after dismantling the wall of structure 2 and final cleaning: 1, 2, 3 – the foundations of the walls of structures 1–3; 4 – the base of the wall of the structure of the lower horizon; 5 – stones from the walls of structures of the lower horizon; 6 – the edge of the housing pit of the lower horizon

Рис. 4. Раскоп I. А – вид в ходе первой зачистки сооружений и поверхности. Б – вид после разборки стены сооружения 2 и окончательной зачистки: 1, 2, 3 – основания стен сооружений 1–3; 4 – основание стены сооружения нижнего горизонта; 5 – камни от стен сооружений нижнего горизонта; 6 – край жилищного котлована нижнего горизонта

In the area of excavation I, which uncovered the main, southern, part of the settlement, there are three structures (Fig. 4.-A, B), the foundations of which are made of stone. The base

of structure 1, located on the western edge of this sector, is better preserved. Its shape is close to an elongated oval. Dimensions — 8×5.4 m. To the east of it is structure 2, which has a rectangular shape, dimensions — 6×4.8 m. Structure 3 is located to the south of them. It has survived much worse. It was probably a round or oval room with two internal sectors. The southern and northern walls of the structure were completely dismantled in subsequent eras, and by the time of the excavations, fragments of three walls had been preserved from the entire structure. If the first two buildings look like residential buildings, then the southern building was intended for household purposes — they could keep livestock and store accessories here. This is confirmed by the small number of finds in this sector.

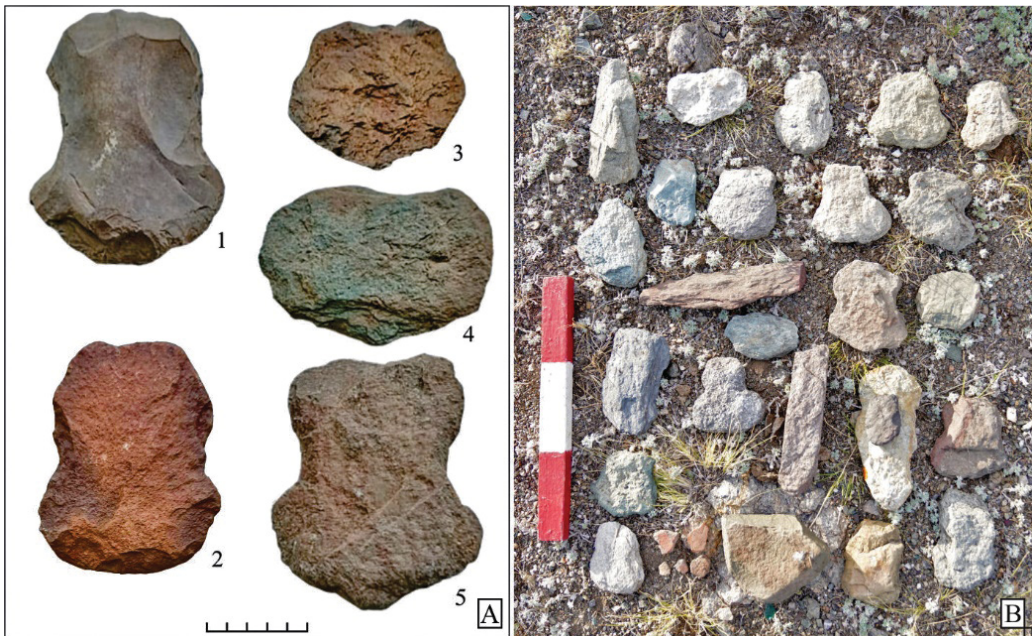


Fig. 5. Stone tools from the settlements of Aiyrtaş-3 (A) and Aiyrtaş-8 (B). A: 1, 2, 5 — hoes; 3, 4 — scrapers. B: Tools collected on the surface

Рис. 5. Каменные орудия из поселений Айырташ-3 (А) и Айырташ-8 (Б). А: 1, 2, 5 — мотыги, 3, 4 — скребла. Б: орудия, собранные на поверхности

Of particular interest in this excavation is its northeastern part. Here, under the walls of structure 2, as well as to the east and northeast of it, the lower horizon of construction was opened. Under the walls of building 2 there is one strip of stones, which has an arcuate shape. This remains of the ancient wall were discovered after the upper structure 2 was dismantled (Fig. 4.-B) to clear the lower horizon. To the east of this wall are numerous stones, which are also connected with the lower horizon. In addition to this fact, the edge of the housing pit was cleared right at the northern edge of the excavation. The depth of the pit is 30 cm. Such housing pits are typical for the house-building of the Bronze Age. Findings in this sector of ceramics with traditional ornaments for the Late Bronze Age of Central Kazakhstan reinforce this idea.



In the area of excavation II, which is located to the north of the first, only one horizon of buildings was found. On the eastern edge of the excavation, an oval-rounded room measuring m in size was better preserved. In the western part of the excavation, the remains of two heavily destroyed buildings were unearthed. Here, there are no remains of the premises of the lower horizon.

132 stone tools and blanks were found in the area of the entire excavation. The main part is made up of hoe-shaped tools (Fig. 5.-A: 1, 2, 5) of large and small sizes, 72 pieces in total. The nature of the stone tools found at the excavation firmly allows us to judge the layer of the Early Iron Age. The fact is that at the site a large number of stone tools have been found in the settlements of this era (Beisenov et al., 2018). Good results were obtained in the course of trace analysis of these items. More than 350 tools from the Abylai settlement have now been studied by traceological methods, and functions have been determined for 341 of them. According to I.V. Gorashchuk, a trace expert, stone tools were used in such industries as excavation, processing of livestock products, processing of plant products, and wood processing. A lot of them are hoes that were used in earthworks. They were probably used in agriculture. Some of these results have been published (Beisenov, Gorashchuk, Duysenbay, 2021). During the early Iron Age of Central Kazakhstan, the traceological analysis of stone tools is carried out for the first time. However, the main types and forms of these tools are already well known. This gives grounds to analyze such artifacts with a great deal of confidence already during the first inspection of the settlement, as soon as it is found, as well as during excavations.

In June 2022, the author discovered the settlement of Aiyrtas-8 (Fig. 1.-8), located near Aiyrtas-3. As it often happens, the ruins of ancient structures are poorly preserved due to the use of stones for the construction of nearby old Kazakh winter quarters. At the first and brief inspection of the surface, three hoes were found, all with clear forms. The evening soon came and the search was stopped. As a result of a search the next day, 24 more tools were found on the surface of this settlement, as well as 5 small fragments of ceramics (Fig. 5.-B). All artifacts lay on an area of 110 m<sup>2</sup>. Half of these 26 implements are hoes. Thus, when getting acquainted with the settlements of the Early Iron Age of Central Kazakhstan, often stone tools, including hoes, are the first finds that indicate the chronology of the site.

All found 351 fragments of ceramics are divided into two groups. Most of them (329 fragments) are fragments of dishes, which have very few ornamented specimens. A few ornamented fragments (Fig. 6.-A: 1-3) indicate materials from excavations of other settlements of the Early Iron Age in Central Kazakhstan. As regards the ornament, the ceramics of the settlements of the early Iron Age in Central Kazakhstan are mainly characterized by small and rarely placed “pearls” and pits (Beisenov, Shulga, Loman, 2017). This pottery, by the simplicity of its ornament, is well distinguished from the dishes of the synchronous sites of the Mountain and Steppe Altai in the Russian Federation (Abdulganeev, Vladimirov, 1997; Shulga, 2015; Stepanova, Frolov, 2017).

Now there are results of studying ceramics from the Saka burial sites of the time of Central Kazakhstan. Studies show that pottery from settlements and kurgans is close to each other (Beisenov, Loman, Shashenov, 2021).

22 fragments with a characteristic pattern for the Bronze Age clearly differ from this monotonous pottery (Fig. 6.-A: 4-6). Based on a comparison with the materials of the studied

sites, this pottery can be associated with the culture of the Late Bronze Age of Central Kazakhstan (Varfolomeev, Loman, Yevdokimov, 2017). Among them, there is one fragment of roll ceramics (Fig. 5.-A: 4). The roll, located below the rim, is smooth, and triangular in cross-section. Such ridges are typical for Dongal ceramics of the period of Central Kazakhstan (Loman, 1987). But based on one fragment of ceramics, it is impossible to judge the presence of a Dongal layer on this site. The bulk of the Bronze Age pottery was found in the northeastern sector of the excavation. The ceramics of both groups are mixed, but it is noticeable that fragments of the early period lie lower.

In general, stone tools and ceramics, being the main finds from the excavation, reliably indicate the presence of two main horizons — the Late Bronze Age and the Saka period. Another fact is interesting, which strengthens the position of the layer of the Saka time. We are talking about two solitary kurgans about 10 m in diameter, which are located to the west of the line of settlements, at a short distance from them (Fig. 1.-9, 10). The kurgans are made of fragments of stone and are located on the mountain. Such stone kurgans were discovered by the author near such settlements of the Saka period as Sarybuirat, Keregetas-2, Kyzylsuir, Abylai. All of them are located at a close distance from the settlement, in high places. Excavations of one kurgan near the settlement of Sarybuyrat showed a funeral rite, typical for the Saka time. The author considers such burial mounds as burials of people who lived in the nearest settlement. Their location on the mountain is associated with the winter nature of the settlements. In winter, from the action of winds, there is no snow on the peaks and slopes of the hills, and with the onset of early spring, such areas warm up earlier than the lower slopes and plains covered with snow. Therefore, such tops and terraces were convenient for the burial of residents from the settlement. The graves in such kurgans have a shallow depth. The mound over the burial was made up of fragments of stone, which are many on such hills.

Of the bronze artifacts at excavation I, two objects were found in the form of a punch and an awl (Fig. 6.-B: 3, 4). Both objects may be associated with the Late Bronze Age, although there is a possibility that they belong to the Early Iron Age as well

One more small group of finds should be mentioned. These are three iron artifacts found in the area of excavation I. Two of them (Fig. 6.-B: 1, 2) are fragments in the form of flat plates. Perhaps these are fragments of iron utensils with a wall 4 mm thick. The third artifact looks like an arrowhead with a flat feather (Fig. 6.-B: 5). Its total length is 10 cm. The length of the feather is 5 cm. All three items are associated with a later period. Two fragments of iron plates were found on the territory of structure 1, at a depth of 10 and 30 cm. An arrowhead lay on the territory of structure 3, at a depth of 10 cm. All three artifacts do not provide solid grounds for archaeological dating. Probably, these finds were left by the medieval population. It is now impossible to unequivocally judge the presence of a layer of this time at the Aiyrtas-3 settlement.

Our attention is drawn to the high location of buildings 1, 2, and 3, the walls of which are not deepened into the ground. Structure 1, the best preserved among all sectors of the settlement, has five pits from the pillars inside, which propped up the roof. In one pit, the remains of a wooden post have been preserved (Fig. 7). The walls of structure 2 are built on top of the remains of the ruins of an older structure. The question of the chronological relationship between the upper horizon, represented by structures 1–3, and the lower building level will be significantly corrected after receiving the results of radiocarbon analysis.

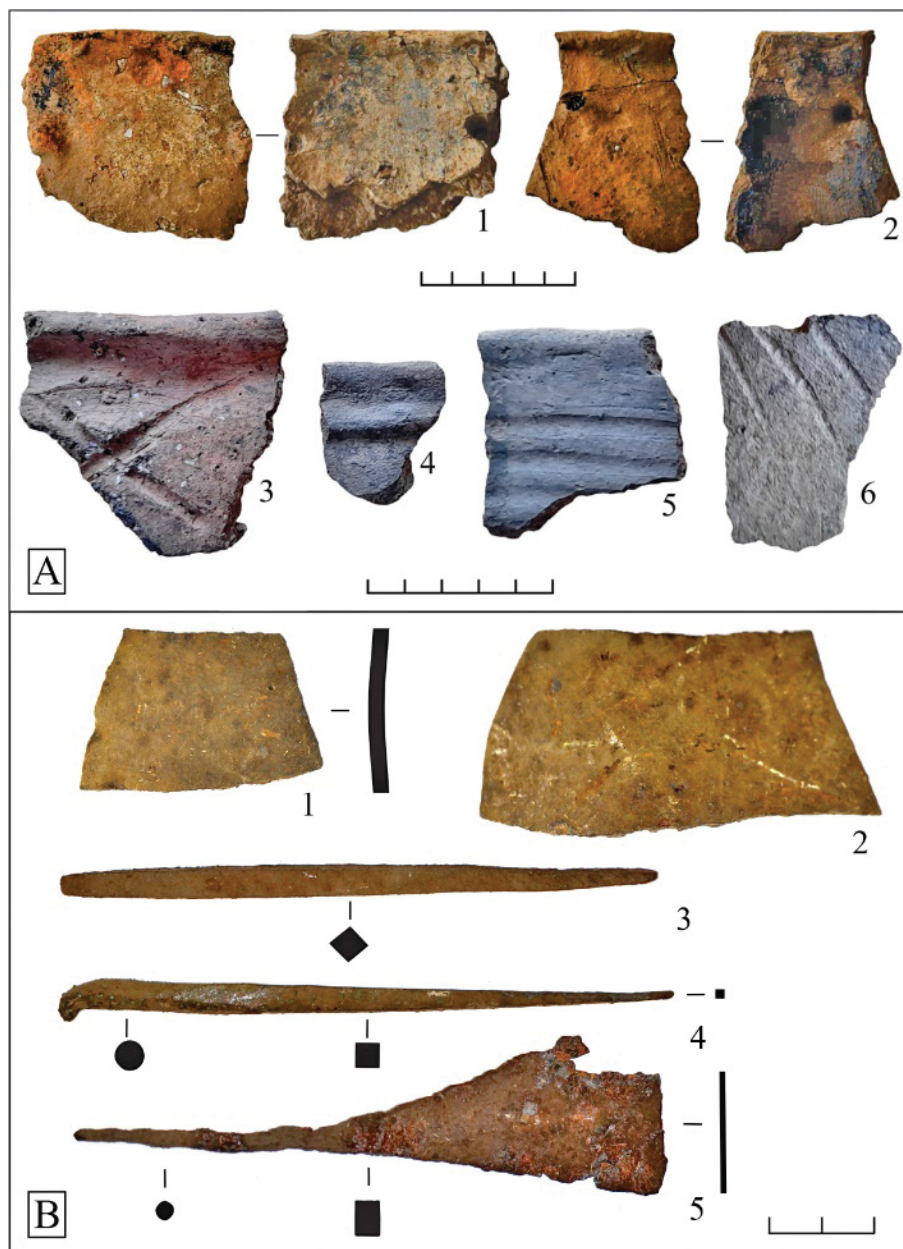


Fig. 6. Ceramics (A) and metal objects (B) from the Aiyrtas-3 settlement. A: 1–3 – ceramics of the early Iron Age; 4–6 – ceramics of the Bronze Age. B: 1, 2 – iron fragments in the form of flat plates; 3, 4 – bronze punch and awl, 5 – iron object in the form of an arrowhead

Рис. 6. Керамика (А) и металлические предметы (Б) из поселения Айыртас-3. А: 1–3 – керамика раннего железного века; 4–6 – керамика эпохи бронзы. Б: 1, 2 – железные фрагменты в виде плоских пластин; 3, 4 – бронзовые пробойник и шило; 5 – железный предмет в форме наконечника стрелы



Fig. 7. Settlement Aiyrtas-3. A – Remains of a wooden post on the floor of structure 1. B – Housing pit of the Late Bronze Age

Рис. 7. Поселение Айыртас-3. А – остаток деревянного столба на полу сооружения 1. Б – жилищный котлован эпохи поздней бронзы

The situation with the dwelling pit in the northeastern corner of excavation I seems clearer. This pit and the sector closest to it can be associated with the cultural layer of the Late Bronze Age. It is unequivocal that the excavation revealed only a small edge of the housing horizon of this era. The consequence of this is a small number of ceramic fragments. As can be seen, the horizon of the Late Bronze Age is directed further to the north and east. An urgent task for the near future is to expand the excavation in this sector.

In Central Kazakhstan, the old Kazakh winterings were discovered and studied by the author before. In 2022, new winterings were found on Aiyrtas. But an important result in this direction lies in another observation.

The fact is that on the slopes and gorges of Mount Aiyrtas two types of winterings were found. Winterings with houses and barnyards with straight walls are known to the author in past studies. This are the winterings of the Karashoky type (Beisenov, Akhiyarov, Dzhusmanazarov, 2020), Kyzylshilik (Beisenov, Shashenov, Duysenbay, 2020) and others. Such winterings are dated by the author to the period of the last third of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century. These winter quarters are usually located separately (Fig. 2.-12-14), in the form of small groups of houses where related families lived.

The old winterings, which are located on the area of the settlements of Aiyrtas-2, Aiyrtas-4, Aiyrtas-5 and Aiyrtas-6, have a completely different look. They are characterized by structures of round and oval shape, which are small in size. They completely or to a large extent cover the territory of the ancient settlement. Perhaps the structures of the ancient horizon in such cases can be destroyed. This type of Kazakh wintering must be dated to an earlier period than the indicated first group. In July 2022, a small excavation was laid at one of these sites, at Aiyrtas-6. Earthworks were brought to a depth of 30 cm and opened one sector of the round house. Work is planned to be continued in the near future, possibly in the fall of 2022. In the summer of 2021, early Iron Age stone tools were found on the surface of this site.

Modern studies of old Kazakh wintering areas are not limited to the relevance (Azhigali, Turganbaeva, 2021; Beisenov, 2021a; Shagirbaev, Ganiyeva, Sakenov, 2022) of this direction. In the conditions of the modern development of science, the complex and multicomponent nature of archaeology is rapidly growing, which helps to solve a very wide range of problems, from excavations of a single monument to extensive regional work, including cartographic and landscape studies (Butzer, 1982; Bradley, 2000; Jacobson-Tepfer, Meacham, 2010; Soenov, Konstantinov, Soyenov, 2011; Rogozhinsky, 2011; Bourgeois et al., 2014; Chang, 2018).

### Conclusion

Most of the Saka settlements of Central Kazakhstan, where excavations were carried out, are single-layered, except for those located on their areas or near their Kazakh winters. Only at the settlement of Shidertinskoe-2 under the Saka horizon was a layer of the Bronze Age discovered. Therefore, Aiyrtas-3 is currently the second case where we find an older layer under the buildings of the early Iron Age. The expected data of radiocarbon analysis, and then the continuation of excavations at Aiyrtas-3, will make it possible to more clearly present the picture of the relationship between the upper and lower horizons. Now we can assume that the settlement was inhabited twice: in the second half of the 2<sup>nd</sup> millennium BC and during the 8<sup>th</sup>–5<sup>th</sup> centuries BC.

The main part of the mounds of the early Iron Age located in the valley in front of Mount Aiyrtas are burial places for ordinary people. However, it is known that there are also large burial mounds here. At a distance of 14 km to the east of Mount Aiyrtas is Mount Borili (in Kazakh, «wolf's place»). In a wide valley in front of this mountain there is an elite burial ground of the Tasmola culture. The core of this burial ground, discovered by A.Z. Beisenov in 2007, are kurgans 3–4 m high. Searches have shown that there are no settlements around Mount Borili, which is associated with the less convenient natural qualities of this small hill. The valley, where the elite burial ground stands, passes into the Aiyrtas valley in the west, forming one whole with it.

The work with the early Iron Age sites of Central Kazakhstan showed that elite burial grounds or large single mounds were built separately, separately from the burial places of the ordinary population. It is possible that the Borili burial ground is associated with the settlements of Mount Aiyrtas.

The topography of the Saka and Kazakh settlements coincide and this has been noticed for a long time. This feature suggests that the natural and climatic conditions on the territory of the Kazakh upland for a long time were approximately similar. The question does not end there. Much more important is the question that forms of adaptation of steppe pastoralists to the natural conditions of their place of residence were found in ancient times.

Now we can say that the area chosen by us for research had important favorable conditions for the ancient and late pastoralists. These conditions consisted of three main factors: 1) the presence of a mountain necessary for the winter habitation of people and livestock (Beisenov, 2021b), 2) the close location of two steppe rivers, which, judging by the wide banks and floodplains, were more abundant in the early periods, 3) the presence of a convenient wide valley for the organization of pastures.

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