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## ИЗВЕСТИЯ

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## NEWS

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**RESULTS OF ARCHAEOLOGICAL EXCAVATIONS CONDUCTED  
AT THE RAKHAT MONUMENT IN ALMATY REGION  
(BASED ON THE REPORTING MATERIALS FOR 2015-2016)**

**Abstract.** The geographical location of the settlement area and unique features of the Rakhat region were studied in the article. During 1994-2005 at the settlement area archaeological excavation of the joint Kazakh-American expedition under the leadership by K.M. Baipakov, F.P. Grigoriev, K. Changwas carried out. There were expertise and description of the archaeological excavation of monuments which located in settlement area of Rakhat in the Institute of Archaeology named after A.Kh. Margulan in 2004. As well as, in the Upper Paleolithic place the various levels of mineral excavation, exploration work were characterized fully by the leadership of O.N. Artyukova in the location of Rakhat in 2006-2007.

The work of the members of the archaeological expedition was analyzed under the leadership of B.Nurmaganbetov of the memorial museum "Esik" in 2011.20.12. Along with archaeological excavation, new research methods of the scientists of Natural sciences were utilized, in the international scientific -research laboratory "Geoarcheology" faculty of al-Farabi university made expert examination of the results and the current state and future of archaeological excavations which carried out in the framework of the State Program "The people in the flow of history" in the location of Rakhat by the leadership of G.T. Bexeitov in 2015-2016 y.

In addition, the ceramic vessels were collected in expert work by E.Sh. Akymbek the leading researcher of A.Kh. Margulan Institute of Archeology which detected during the archaeological excavations.

**Key words:** Archeology, geology, geomorphology, palynology, anthropology, climate, artifacts, sharp stone (nucleus), ribbed cleavage, ceramics, interment, paleolithic camp, nomadic camp, mound, monument, excavation.

**Introduction**

Gaining independence of our republic and becoming a sovereign state, it still allows us to study our history in a new way. In this regard, many research works have been carried out on the historic sites worthy of national interest in the history of our country, and mystery pages of our history are being discovered. Today the country's rapid development requires to study deeply the historical truth, own way of the history of the nation needs to write a new data based on artifacts found during archaeological excavations.

Our people have gone through many difficult times on this path. It is obvious that from the ancient times to the present day the history of the Kazakh people, which has not survived, has not lost its continuity. Ceramic, bow spearhead, skeletal remains and rock artifacts are particularly important in determining the age of historical sites, because the period can be determined depending on their structure of creation, the nature of the species, the specificity of preservation. One of the most intricate and unexplored forms of research at that time are the monuments which located near the settlement area of Rakhat (the Enbekshikazakh district, Almaty region).

Rakhat monuments are a historically significant site located at the foot of the mountains which is 5 kilometers away from southern burial grounds "Esik", Enbekshikazakh district, Rakhat rural district of Almaty region. At the moment, civilized nations and nationalities are primarily interested in their past and present. It demonstrates the importance of the true history of our people, through the research and deep scientific expertise.

Geographical coordinates of the village: N: 43°20.250 ' ; E: 077 ° 22.614. The total area of monument is occupied 88.7 hectares. It is one of the most historically significant objects of the 5 km square of the Issyk-Talgar highway, on the southern slope of the Esik monastery in Enbekshikazakh district of Almaty region [1].

In its turn, exploration and excavations were carried out in the organization of archaeological research of settlement. In the monuments of Rakhat were carried out effective scientific-research works by leaders of archaeological excavation of the joint Kazakh-American expedition: K.M. Baipakov, F.P. Grigoriev, K. Chang. [2].

During the expedition of settlement area, characteristic of the Sak-Uysun stages as dwelling shelters, semi-cellars and dwellings made of semi-bricks were dug, collected ceramic remains and artifacts and conducted examination in the foreign scientific-research centers. As a result, through using the scientific-research methods which inherent to the natural sciences, the prevalence of fruitful result of archeological excavations of the joint expedition in the information society has become important.

There was conducted archeological excavation of 5 mounds in the location of Rakhat by the staff of Institute of Archeology named after A.Kh. Margulan in 2004. As well as, the monuments and settlements of the location Rakhat were not included only in the region of Zhetysu, also in a number of important complexes of Central Asia. Sak, Uysun, Huns, Turks people, other ancient and subsequent tribes lived in the parts of the Ile-Alatau can take an important role in the area of Jetysu [3].

The first efficient excavations work in Paleolithic nomad camp of the location Rakhat was carried out in 2006-2007. Expedition was led by O.A. Artyukhova, as a result found artifacts gave opportunities to determine the age of nomad camps. It is possible to say that the historical roots of the settlement is very deep, because it is the evidence that magnificent monuments and nomad camps of the Stone, Bronze, Iron ages were settled here. [4].

The scientific staff of the "Esik" historical-reserve museum had organized archaeological exploration and excavations in the Rakhat settlement that led by B.Nurmukhanbetuly between 2011-2012, consequently scientific study suggests that the history of this region had started from the Stone Age, by digging the mounds inherent to Sak, Uysun, Huns and Turks an invaluable contribution was added to the history of Kazakh [5].

On October 15, 2015 the international scientific-research laboratory "Geoarcheology" of Kazakh National university in the framework of the State Program "The people in the flow of history" was held a considerable archaeological excavations in the nomadic camps and mounds inherent to the period of Sak-uysun, near the village Rakhat in the Upper Paleolithic nomadic camp "Rakhat". The connection of archaeological research with Natural science as Chemistry, Physics, and Biology, there were fulfilled works by using new methods of scientific study as geomorphology, geology, palynology, trasology and dendrology.

In autumn and spring 2017 archeological exploration was held by managing G.T. Bexeitov Can.His.Sc., associate professor, the director of the international scientific -research laboratory "Geoarcheology" of KAZNU. As a result, it is planned to carry out excavations at the monuments located near Rakhat in 2018.

### **Methods**

The list of methods of excavation, fixation and analysis of material applied to Paleolithic monuments are extensive. Nowadays to study the spatial distribution of artifacts are being applied stratigraphic, microstratigraphic analyzes, planographic analysis, a method for searching connections between finds (repair), and statisticalcombinatorial analysis. Within each of these methods, there are many different methodological nuances and directions.

So far as the study of any archaeological monument begins with the identification in the thickness of the geological rock layers containing cultural remnants, clarifying the degree of preservation of these layers, the nature of their occurrence and structure, microstratigraphic analysis is of particular importance.

### **Results**

#### **Excavations in Rakhat monuments between 2015-2016**

Today, the rapid development of our independent country requires to study the historical truth, the own history of the nation based on new findings. One of the regions that needs such research is the Rakhat

monuments located in Zhetysu. The research works of Paleolithic stone age in Kazakhstan have been left behind for half a century compared with the research methods of foreign scientists.

### **Rahat (Soldat ravine) the Upper Paleolithic camp**

Archaeological excavations have discovered the historical moments of the region in the country and contribute to the study of society in the first community. A lot of stone tools of the first people had been found in the nomad camps of the Stone Age which located in Kazakhstan. This archaeological monument is evidence of the existence of the first community in Kazakhstan. One and unique of them is Rakhat Paleolithic nomad camp N 4321464, E07722672 [7].

Rakhat Upper Paleolithic camp was located 1040 m above the sea level in the eastern part of the villages Rakhat and Krasny Vostok, in the eastern part of Soldat ravine of the foothills of Ili Alatau mountains. During the determination of the age of the camp two sites were selected and stratigraphic snip excavation was dug. As a result, found stone artifacts proved to be a unique monument in the chronological epoch of the Stone Age in the Zhetysu region [8].

The first scientific research works in 2006-2007. It was carried out under the leadership of Artyukhova.

The eastern hills of the nomad camp were larger enough to the north. Further scientific-research works have been carried out to prevent further destruction of the Stone Age monuments. During the study, there were found traces of the hearth in solid rock layers and floodplain sediments. The abundance of stone artifacts allowed conducting a comprehensive study to this monument [9].

The ecological condition of the nomad camp enabled to collect materials and artifacts that allowed restoring the flora and fauna, to determine the age of the monument. According to archaeological excavations, it was found out that any excavation work was carried out in the monument while comparatively defining absolute age of biological and cultural evolution of ancient people.

In the process of detecting monuments and nomad camps of the Paleolithic period, stratigraphic snip excavations on 2x4 m were carried out for the purpose of determining the age of the region by managing G.T. Bexeitov Can.His.Sc., associate professor, the director of the international scientific -research laboratory "Geoarcheology" in 2015, the age of nomad camp was supposed to be the period of the upper Paleolithic. Unfortunately, the excavations did not show a layer of cultural sediments in the region. Only the collected stone artifacts from the surface of the fossil have been studied.

The total number of findings consist of 48 copies of stone artifacts which obtained during the research of archeological expedition "Geoarcheology" of camp Rakhat. Among them, the following types of stone products have been distinguished according to their manufacturing techniques and function: Nuclei -2ex, nucleus forms -5ex, ribbed chips -1ex, flakes and debris-40ex. The nucleus is a subtriangular form of red porphyrite measuring 12x14x7.8cm.

It is made of undulating river pebbles. The removal of regular chips - flakes were made without preliminary processing of the nucleus. The principle of chipping is split from one working surface of the product. Special preparation of the strike site was not carried out. The surface of the product is slightly covered with patina.

The next nucleus is made of gray porphyrites of round shape, measuring 9x10.5x8 cm (Figure 4). The chip was produced from the working surface of the product without preliminary preparation. The nucleus was prepared a strike site which is prepared by removing a single chipped stone artifact horizontally. The base of the nucleus is flat. From the nucleus was the removal of one chip of the flake [7].

Nucleated forms are made of gray and pinkish porphyrite. There are products on the flake among the nucleus forms. They almost do not have brightly marked chips. Artifacts have subtriangular and subquadratic forms. The surface of the products is partially patinated.

The brightly marked ribbed chip is 11.5x5.5x3.5cm in size. The workpiece for the product was gray porphyrite. This chip is a technical chip or as it is also called the chip of the nucleus, when the working part of the nucleus becomes unfit for removing regular chips. The ribbed chip is an arcuate, elongated shape.

Flakes in the number of 40 copies are made of gray, pink and reddish-brown porphyrite. Flakes are related to production waste. From this collection was not found wares which could be attributed to tools. The absence of stone artifacts of tool set from the collections of the Rakhat settlement was considered the possibility of holding quarry work by the local people [7].

The analysis and study of artifacts carried out in the laboratory allow preliminary dating of the Rakhat nomad camp by the late Paleolithic. The comprehensive study of the monument in the framework of the State Program “The people in the flow of history” will allow us to reconstruct the paleoecological conditions of life of primitive people, to simulate a picture of the ancient and ancient history of our country, which will significantly raise the level of teaching history in the Higher educational establishments of the country. The obtained models of adaptation and behavioral strategy of the ancient human in different epochs of the Stone Age in the foothills of the Tien-Shan will help to predict the changes in environmental conditions in this seismically active densely populated region of the country.

Received collections of stone artifacts will be replenished by republic and regional museums.

### Archaeological excavations conducted by the international scientific research laboratory “Geoarcheology” for 2015-2016 in the mounds of Rakhat settlement.

The archaeological complex of the Rakhat ravine is located on a flat site near the river of the same name as Rakhat. New research on this monument showed the presence on the complex of monuments related to different times as - the Bronze Age, the times of Sak and Uysun. In the field season was set the task to identify the structural features of the early Iron Age mounds and determine the location of the Sak time settlement.

During the excavations were also obtained extensive ceramic and osteological materials which can be correlated mainly with the layers of the Sak nomad camp. All the heights of the earth's surface were drawn from the conventional zero (the western corner of the square (A-1) A-4), which is tied to the absolute altitude. Counting of all depths for structural details of monuments, ware, ceramic and osteological materials were conducted from the surface of the earth [10].

For a more convenient counting of all the squares during further studies on the monument was changed their numeration. The count is held from the northern corner of the excavation [11].

Research at the Rakhat facility. The burial ground is located on the top of the hill. Unsystematic, compact burial ground, consisting of five camps, flattened hilly with banding and calculating stones. All research materials of this monument are in process of treatment and detailed analysis.

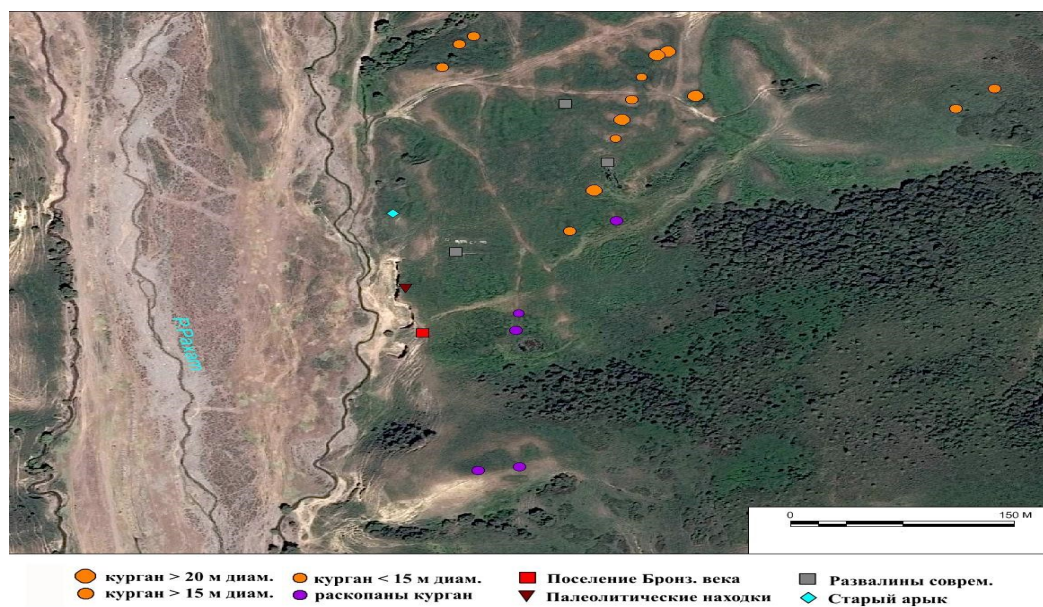


Figure 1 - Rakhat. Location of mounds in the area

**Mound №1.** Diameter is: from north to south - 9 meters, from east to west - 8 meters, height is - 45 cm. During the excavation works № 1 there was found a ceramic bowl of the burial hole at the depth of 1.7 m. (Appendix 2) [12].

**Mound №2.** It is located 2 meters in the east from mound № 1. There were founds bones of child aged 14 - 15 years old [13].



The mound №2 was absolutely robbed. Depending on the genetic nature, it is the bone of woman about aged 18 to 25 without skull. There are signs of cribra orbitalia above fractures of the skull, which may be indicator of anemia. Hence, the buried human was died because of illness [14].

**Mound №3.** The mounds that have a diameter of 9 m and a height of 0.5 m were excavated and explored. Ceramic vessels were found on the left side of the human skeleton in the burial hole during excavation of №3 [7].

Ceramic vessels were detected on the left side of the mankind skeleton in the burial hole during excavation of №3 [15].

#### **Stratigraphic snip excavation conducted in Rakhat settlement**

At the same time stratigraphic snips to nomad camps were constructed inherent of Sak time. Generally there was detected waste of ceramics inherent of Sak time. The period of obtained materials is basically a period of Sak, while ceramic wastes found in the lower part of the fossil are based on the technique of Bronze Age. In this regard we can notice that the historical roots of settlement are deep [6].

During excavations, many ceramic debris and waste of bones were found. As a result of the deeper excavation of fossils, many artifacts of the same era were appeared from a variety of cultural layers. Looking at the artifacts found in the same cultural layers, it is evident that the settlement had a workshop on its own. As a result of deep digging, the area was divided into 6 square meters and a full description was made. Approximately 100 ceramic debris and waste of bones were found out from the nomad camp as a result of the excavation [6].

#### **Results of the findings of the discovered ceramics during the field research of the international “geoarcheology” laboratory for 2015-2016 years**

During the excavation in mound №1, ceramic tableware was found in the burial hole with a depth of 1.7 m [7].

The plate (Figs. 29, 30). The crockery was made of semi-ellipse, constructed with clay mixed with organic things and fine sand. At the bottom of the rounded wall, the bent curve moves upward and has a sharp angle in the cross-section. Burns are not uniform, while the color is light brown but not uniform. The length diameter is 16 cm, the height is 7 cm, the wall thickness is 0.6-0.8 cm.



Figure 2 - mound.№1. The plate

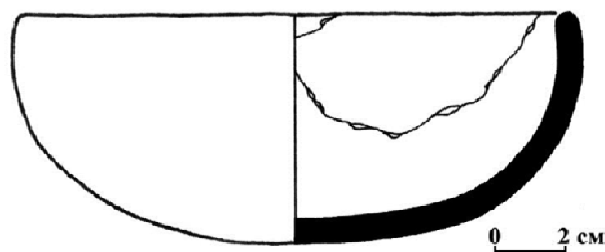


Figure 3 - The Rakhat cemetery. Mound №1. The plate

Ceramic vessels were found on the left side of the human skeleton at the burial hole during the excavation of mound №3 [7].

The bowl (fig. 2-3). The half-spherical crockery is composed of fine sand and mica blended clay. From the bottom of the round, the wall is unevenly folded and folded in the cross section, with a bent arc. It can be seen from the outside that the density of the cookware increases by fracturing the wall with solid things. Burns are uniform, light brown red. The length diameter is 10.5 cm, the diameter of the side is 12.8 cm, the height is 8.8 cm, the wall thickness is 0.5-0.7 cm. In 1954, a similar tableware was discovered in the excavations of the №3 in burial ground Taigak I. The burial ground is periodization of BC II-I centuries.

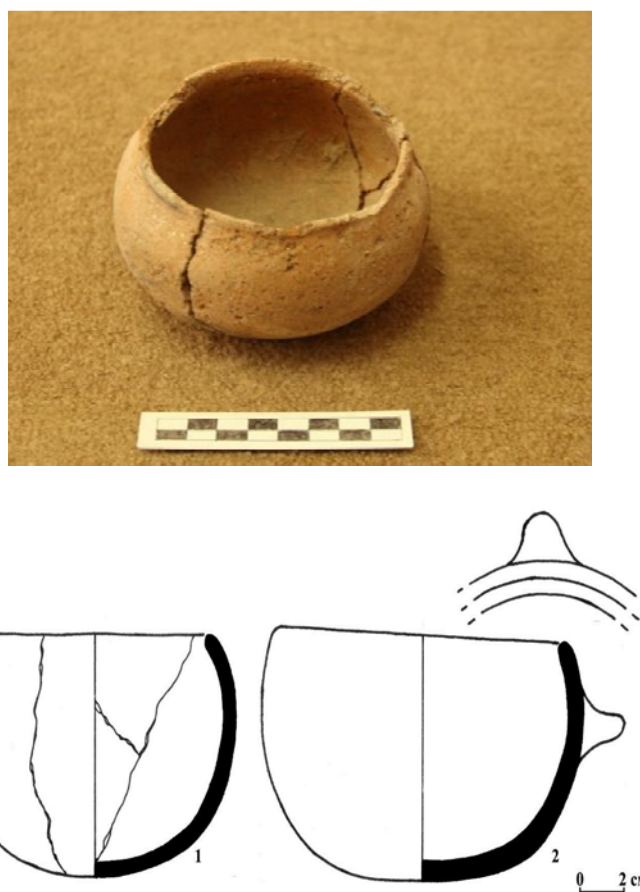


Figure 5 - Rakhat cemetery. Mound №3. Bowls

### Rakhat settlement

Stratigraphic excavations at Rakhat settlement were conducted by dividing into quarries. During digging, a significant amount of ceramic vessels were found in the monument [7].

Squared - 4-D, tier -I. Several pieces of scrap were found on this square. It was possible to determine only one of them. The rest of the vessels are splinters.

Small dishes (Fig. 33.1). It was made from clay manually. The clay is not tight. The smoothing side is bent inwardly. Burns are uniform, color is light brown. The length diameter is about 7 cm and the wall thickness is 0.9 cm.

Squared - 2-B, tier-II. There are two big ones among the vessels found in this quarry.

Edge of the *koze* (It is like a vase). (Fig. 4). The fracture of the vessel, made by hand-sticking sand, mixed with mica. The lateral wall is bent forward and leaned outwardly. Density of clay and burnt are not uniform, the color is dark brown. The diameter of edge is 22.5 cm and the wall thickness is 1 cm. The outside was burnt.

The edge of *koze* (Fig. 5). The splinter of edge of tableware is composed of sand and organic materials which made from clay manually. The lateral wall is bent inward and curved outwardly, the surface is flattened. It is observed that the density of the substrate is increased by its solids. Clay is tight, burnt is not uniform, outer is dark brown, and inner side is brown. The diameter of edge is 30 cm, the thickness of the edge is 1.5 cm, the side diameter is about 32.5 cm, the wall thickness is 1-1.2 cm. The outside is completely burnt in the fire.

During the excavations a number of splinters were defined from the IV tier. Basically, most of them are spall of kitchen and utility vessels.

Square - I-A, tier-IV. There is a big *koze* among these splinters of vessels in this square.

The edge of *koze* (Fig. 6). The splinters of edge of the vessel were made by hand-sealing of clay from the sand. The straight bent side curved from the side curved straight outward. Clay is solid, burnt is not uniform, the middle part inside is brown, outside is brown-red. The diameter of the edge is 26 cm, the diameter of the side is 33 cm, the wall thickness is 1.2 cm.

Square - 2-B, tier-IV.

The edge of crockery (Figure 7). The spall of edge of the vessel were made by hand-sealing of clay from the sand. The straight exit wall is drooped outward and the surface is flattened. The clay is dense, burning is not uniform, the inner side is dark gray, and the outer side is brown red. The edge thickness is 1.8 cm, wall thickness is 0.9-1.2 cm. The outside is burnt.

Squared - 5-D, tier-IV.

The edge of *koze*. The splinter of edge of the vessel were made by hand-sealing of clay from the sand. The wall that has been sprouted from the bottom is curved strightly and is bent free inward. At the same distance around the sloping side, there is a sloping hinge with a solid object. The clay is dense, burning is not uniform, the inner side is dark gray, the outer side is brown-red. The diameter of edge is 38 cm, the diameter of the side is 39 cm, the thickness of the wall is 0.8-1 cm.

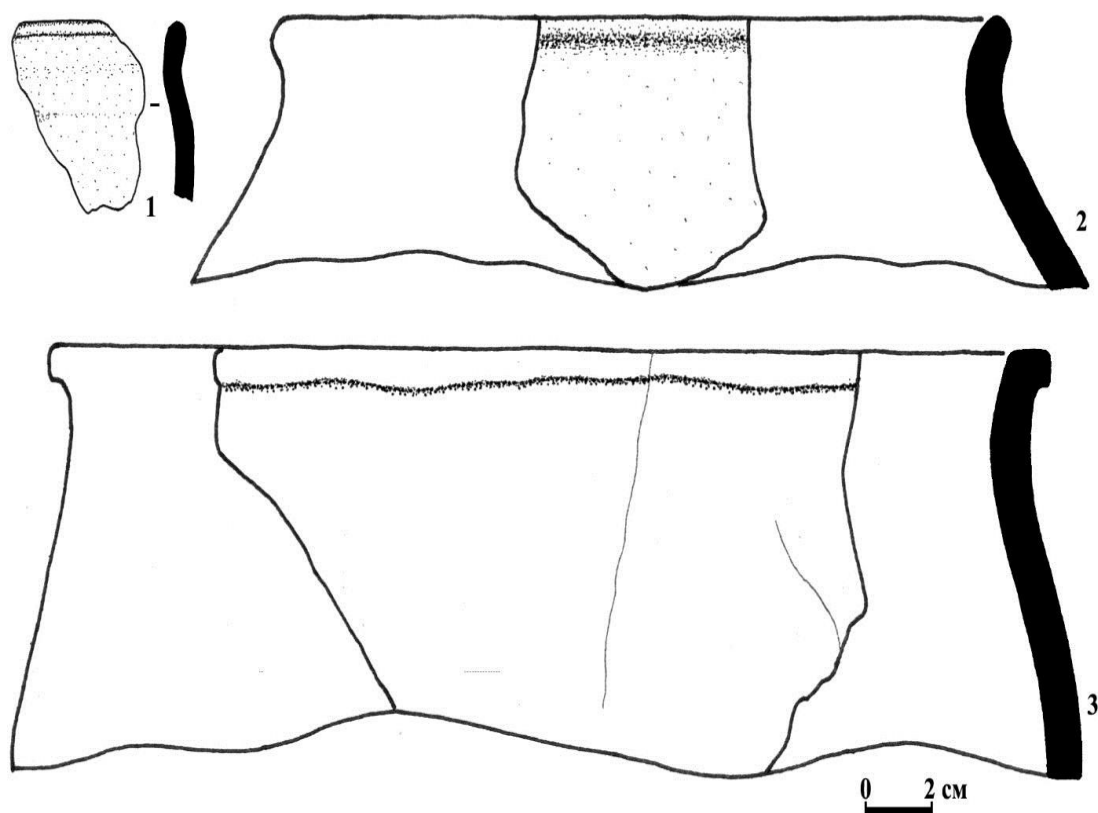


Figure 6 - Rakhat settlement. Ceramic dishes

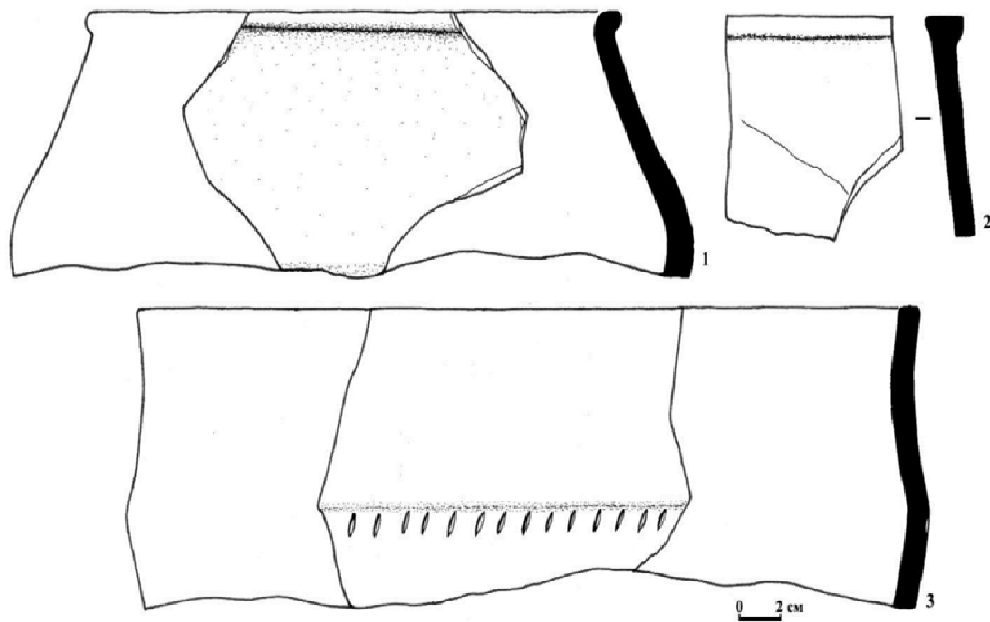


Figure 7 - Rakhat settlement. Ceramic dishes

### Conclusion

The results of the laboratory analysis and artifacts allowed determining the cultural stages of the Rakhat camp. A deeper study of the complex of monuments in the framework of the State Program “The people in the flow of history” on the theme “The Research Program of international scientific laboratory on archaeological dating of the artifacts” provides with improvement of archeological degree at the universities of the republic, modeling of paintings from ancient epochs, restoration of the lives and ecological conditions of the first people.

At the same time, the goal of archaeological research works carried out on the basis of the international scientific-research laboratory “Geoarcheology” of al-

Farabi Kazakh National University in the framework of the State Program “The people in the flow of history” on the theme “The Research Program of international scientific laboratory on archaeological dating of the artifacts” is to determine the historical significance. Most materials of the monuments, mounds, settlements and nomad camps located in the settlement Rakhat show that the region's historical roots are deep.

In the conclusion, the world's science has a great interest in the culture and art of the first community society. The success of natural sciences is widely used in the decision of a number of questions, and new technological possibilities help to consider and clarify some issues. At the same time, Kazakhstan archeologists have achieved many successes in the field of natural sciences (Paleobotanics, Paleogeology, Odontology, Chemistry and Physics, Genetics, Geomorphology, Palinology etc.). Its results are considered to be a significant success in the historiography of the world archeology.

In the future, resuming research in the settlement Rakhat is important for science. We can make a significant contribution to the history of Kazakhstan by defining the borders, cultural layers and the construction sites of the settlement. Further studying of the remains of the native culture of the vast area, provides with valuable information on the political, socio-economic situation of the settlement. Science advances in the search of time and space for tasks and questions. Its branches as natural science, engineering, mathematics, and physics increase labor productivity and rises the wealth of the nation, indirectly promoting material production in the public-humanitarian sphere, and ultimately serves to extend the nation's lives. At the same time, the duty of archeology is the most responsible. The science of archeology sheds light on the nation, brings them up and forms its patriotism, by examining the nation's discovered and lost, the existence and the loss, teachings and experience of the past years.

In the era of totalitarianism, Kazakhstan's archeology failed to fulfill any of these tasks. That's why the chance is just appeared. In short, the future of our young state is connected with science, and the future

of science is closely linked to the state policy. The leadership of Kazakhstan, aware of the fact that it does not engage in this relationship, will soon come to terms with raising its knowledge and science to a qualitatively new heights. Strategy of Kazakhstan's entry into the 50 most developed countries of the world is the creation of academic centers and educational institutions that conform to the highest international standards, modern education development, continuous improvement of qualification and retraining of personnel and further development of the culture of the people of Kazakhstan.

#### **Acknowledgments**

In 2014-2016 archaeological excavations were carried out in the Rakhat settlement in the framework of the State Program "The people in the flow of history" on the theme "Scientific program of the international scientific laboratory on archaeological dating of artifacts" headed by the director Can.His.Sc., ass.professor G.T. Bexeitov of the international scientific-research laboratory "Geoarcheology" which was created at al-Farabi Kazakh National university.

We express our gratitude to the staff of the international scientific-research laboratory "Geoarcheology" of Al-Farabi KazNU and to the organizer of the state program "The people in the flow of history" M.M. Tazhin.

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#### **АЛМАТЫ ОБЛЫСЫ РАХАТ ЕСКЕРТКІШІНДЕ ЖҮРГІЗІЛГЕН АРХЕОЛОГИЯЛЫҚ ҚАЗБА ЖҰМЫСТАРЫНЫҢ ҚОРЫТЫНДЫСЫ (2015-2016 ЖЖ ЕСЕП МАТЕРИАЛДАРЫ НЕГІЗІНДЕ)**

**Аннотация.** Мақалада, Рахат елді-мекенінің географиялық орналасу шекарасы мен өңірдің өзіне ғана тән ерекшеліктері сипатталды. Елді-мекенді 1994-2005 жылдары К.М. Байпақов, Ф.П. Григорьев, К. Чанг жетекшілік еткен, біріккен «Қазақ-Американ» экспедициясының археологиялық қазба жұмыстары қамтылған. 2004 жылы Ә.Х. Марғұлан атындағы Археология Институтының Рахат елді-мекеніндегі ескерткіштерге жасаған археологиялық барлау қазба жұмыстарына сипаттама беріліп, сараптама жасалды. Сонымен қатар, Рахат елді-мекенінде орналасқан, жоғары палеолиттік тұрағында 2006-2007 жылдары О.Н. Артюхованың жетекшілігімен жүргізілген, түрлі деңгейдегі қазба, барлау жұмыстары толыққанды сипатталды.

Сондай-ақ 2011-2012 жылдары «Есік» тарихи-қорық мұражайының Б. Нұрмағанбетұлы жетекшілік жасаған, археологиялық экспедициясы мүшелерінің жұмыстары сараланды. Археологиялық қазба жұмыстарымен қатар, жаратылыстану ғылымдарының жаңа ғылыми-зерттеу әдіс-тәсілдерін пайдаланып, 2015-2016 жылдары Рахат елді-мекенінде Ф.Т. Бексеитов басшылық жасап отырған, әл-Фараби атындағы ҚазҰУ-дың жанындағы «Геоархеология» халықаралық ғылыми-зерттеу зертханасы «Халық тарих толқынында» атты мемлекеттік бағдарламасы шеңберінде жүргізген археологиялық қазба жұмыстарының нәтижелеріне және мекеннің қазіргі жағдайы мен болашағына сипаттама жасалды.

Сонымен қатар, Археологиялық қазба жұмыстары барысында табылған қыш (керамика) ыдыстарға Ә.Х. Марғұлан атындағы Археология Институтының жетекші ғылыми қызметкері Е.Ш. Ақымбектің сараптама жұмысы топтастырылды.

**Түйін сөздер:** Археология, геология, геоморфология, палинология, антропология, климат, артефакт, өзектас (нуклеус), ребристый скол, керамика, погребение, палеолиттік тұрақ, қоныс, қорған, ескерткіш, кесік қазба.

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#### **ЗАКЛЮЧИТЕЛЬНЫЙ ЭТАП АРХЕОЛОГИЧЕСКИХ РАСКОПОК ПРОВЕДЕННЫХ НА ПАМЯТНИКЕ РАХАТ В АЛМАТИНСКОЙ ОБЛАСТИ (ПО МАТЕРИАЛАМ ОТЧЕТОВ 2015-2016 ГГ)**

**Аннотация.** В данной статье авторы рассматривают особенности географического расположения населенного пункта Рахат и его границы. В 1994-2005 гг. д.и.н., профессор академик К.М. Байпаков, Ф.П. Григорьев, (РНД) К.Чанг руководил совместным казахстано-американской экспедицией.

Проанализированы и описаны результаты археологических раскопок памятников проведенных в 2004 году институтом археологии имени А.Х. Маргулана возле местности Рахат. Описаны раскопки и разведовательные работы стоянки верхнего палеолита в местности Рахат, проведенные в 2006-2007 гг. под руководством к.и.н. О.А. Артюховой.

Проанализированы работы членов археологической экспедиции, проведенной в 2011-2012 гг. в музее заповедника «Иссык» под руководством Б.Нурмагамбетова.

В ходе проведения научно-исследовательских работ лаборатории по проекту «Народ в потоке истории» были применены и геоархеология на памятника Рахат методы естественных наук в археологических раскопках, которые дали научные результаты которые в дальнейшем были внедрены в научный оборот.

А также анализированы экспертизу керамические изделия найденной в данной области под руководством сотрудника Е.Ш. Акымбека.

**Ключевые слова:** Археология, геология, геоморфология, палинология, антропология, климат, артефакт, нуклеус, ребристый скел, керамика, погребение, палеолитические стоянка, поселение, курган, памятник, шурф.

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