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**ABOUT THE STONE PRODUCTS DISCOVERED
FROM THE PASHATAPE NEOLITHIC SETTLEMENT
(JALILABAD DISTRICT OF THE REPUBLIC OF AZERBAIJAN)**

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ABSTRACT

The purpose of research paper is to analyze and bring into discussion the idea that the Mughan Neolithic period is the youngest in the South Caucasus (Tufan Akhundov's thesis) based on the concept of the formation of favourable conditions for a productive economy, does not justify itself based on the materials of the Pashatepe site of Jalilabad District and the fact that the Neolithic traditions of the region are older.

Scientific novelty. For the first time in the article, as a result of the chemical and mineralogical analysis of the Pashatepe Neolithic settlement materials, located in the Jalilabad region, considerations are made about some sacred stone objects belonging to the morion type of quartz.

Conclusions. The carriers of the early agricultural culture of Azerbaijan maintained relations not only with the inhabitants of the Middle East of the same period but also with other tribes of the Caucasus. These studies present that the Neolithic inhabitants not only developed their economic habits during their time but also established their religious rites and customs. The custom of burying the dead in their settlements and placing equipment next to them is characteristic of all Neolithic inhabitants. However, in the burial recorded in Pashatepe, the custom of burying a large horned animal behind the child to protect it, almost hugging the skeleton of the deceased, is a unique case.

The results of the archaeological research conducted in recent times in the sites of the early sedentary farmer-herder culture located in the Mughan plain allow us to say that this region was one of the centres where the local Neolithic culture was formed in the South Caucasus in the 6th millennium BC. The progressive traditions transmitted from the south to the north or vice versa during the mentioned period conditioned the formation of the early sedentary farming culture of the region in the Mughan area, which served as the main transit region in the transmission of these traditions. Unique architectural features and technical-technological differences observed in the production of ceramics make it possible to distinguish the Mughan Neolithic carriers from other local Neolithic cultures of the Caucasus. The context of these different witchcraft traditions, sorcery, etc., are also observed in the artefacts discovered during excavations of the Neolithic inhabitants of Pashatepe.

Keywords: Pashatepe site, Neolithic culture, Azerbaijan, morion, stone object, pendant decoration, Neolithic, economic and cultural relations, river stone, grain stone, cult stone, quartz, burial custom, skeleton

**ПРО КАМ'ЯНІ ВИРОБИ,
ВИЯВЛЕНІ НА НЕОЛІТИЧНОМУ ПОСЕЛЕННІ ПАШАТАПЕ
(ДЖАЛІЛАБАДСЬКИЙ РАЙОН РЕСПУБЛІКИ АЗЕРБАЙДЖАН)**

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АВСТРАКТ

Метою роботи є аналіз та обговорення ідеї про те, що муганський неолітичний період є наймолодшим на Південному Кавказі (теза Туфана Ахундова), що базується на концепції формування сприятливих умов для продуктивної економіки, не виправдовується на матеріалах пам'ятки Пашатепе (Джалілабадський район) та того факту, що неолітичні традиції регіону більш давні.

Наукова новизна. У статті вперше в результаті хіміко-мінералогічного аналізу матеріалів поселення неоліту Пашатепе, розташованого в Джалілабадському районі, висловлюються міркування про деякі сакральні кам'яні предмети, що належать до кварцу типу моріон.

Висновки. Носії ранньої землеробської культури Азербайджану підтримували зв'язки не тільки з жителями Близького Сходу того ж періоду, але й з іншими племенами Кавказу. Ці дослідження показують, що неолітичні жителі не тільки розвинули свої економічні звички протягом свого часу, але й запровадили свої релігійні обряди та звичаї. Звичай ховати померлих на своїх поселеннях і класти біля них інвентар характерний для всіх жителів неоліту. Однак у похованні, зафіксованому в Пашатепе, звичай ховати велику рогату тварину позаду дитини, щоб захистити її, майже обіймаючи скелет померлого, є унікальним випадком.

Результати археологічних досліджень, проведених останнім часом на пам'ятниках ранньої осілої землеробсько-скотарської культури, розташованих на Муганській рівнині, дозволяють стверджувати, що цей регіон був одним з центрів формування місцевої неолітичної культури на Південному Кавказі у 6 тис. до н.е. Прогресивні традиції, що передавалися з півдня на північ або навпаки у згаданий період, зумовили формування культури раннього осілого землеробства регіону в районі Муган, який слугував основним транзитним регіоном у передачі цих традицій. Унікальні архітектурні особливості та техніко-технологічні відмінності, що спостерігаються у виробництві кераміки, дозволяють відрізнити муганських носіїв неоліту від інших місцевих неолітичних культур Кавказу. В артефактах, виявлених під час розкопок неолітичних жителів Пашатепе, також спостерігаються різні традиції чаклунства, знахарства тощо.

Ключові слова: стоянка Пашатепе, неолітична культура, Азербайджан, моріон, кам'яний предмет, підвісна прикраса, неоліт, економічні та культурні відносини, річковий камінь, зерновий камінь, культовий камінь, кварц, поховальний звичай, скелет

INTRODUCTION

The Mughan Plain (a large part of which is currently located within the borders of South Azerbaijan (now Iran)) is an integral region of Azerbaijan that has lived and preserved all historical stages from the Neolithic period to the Middle Ages until the present time. The dense location of archaeological sites, ancient settlements, and grave sites in the region, and their multi-layered nature – mainly in the Jalilabad region – proves that living here is intensive. Even in the first half of the 20th century, scientists noted the existence of Mughan's unique archaeological culture here.

The name Mughan comes from the Zoroastrian word 'mūyàn', which means 'fire worshippers'¹. The domesticated horse bone found in the Alikomektepe area of Jalilabad, where some of the Mughan sites are located, dates back to the end of the 5th millennium BC. The domesticated horse bones found deep in the earth during archaeological excavations are the oldest historical event among the post-Soviet countries.

Jalilabad district is rich in historical and archaeological sites consisting of settlements and cemeteries that existed from the Neolithic-Eneolithic period to the late Middle Ages. The term 'Mughan culture' also attracted the attention of scientists dealing with scientific problems of the time.

The purpose of this paper is to analyze and bring into discussion the idea that the Mughan Neolithic period is the youngest in the South Caucasus (Tufan Akhundov's thesis²) based on the concept of the formation of favourable conditions for a productive economy, does not justify itself based on the materials of the Pashatepe site of Jalilabad and the fact that the Neolithic traditions of the region are older.

Methodology. In the development of this study, a comprehensive and multidisciplinary approach was employed to ensure robust and scientifically rigorous outcomes. Chemical analysis was conducted to determine the elemental composition and molecular characteristics of the samples under investigation. Mineralogical analysis was performed to identify and characterise the crystalline structures and mineral phases present. Comparative analysis was utilised to evaluate similarities and differences between datasets, enabling the identification of patterns and trends. Advanced spatial analysis techniques, including space photogrammetry and high-resolution terrain scanning, were implemented to capture precise geospatial data and topographic features. These data were subsequently integrated into a 3D-modelling framework to generate detailed and accurate representations of the studied environments. Additionally, a cluster analysis approach was adopted, grounded in the conceptual framework of clustering as a method to group objects or data points based on shared properties or similarities³. This method facilitated the classification and

¹ Бутков П.Г. Материалы для новой истории Кавказа, с 1722 по 1803 год. Ч. 1. Санкт-Петербург: Тип. Имп. Акад. наук, 1869. С. 249.

² Ахундов Т.И. Неолит Южного Кавказа. В: *Древности Восточной Европы, Центральной Азии и Южной Сибири в контексте связей и взаимодействий в евразийском культурном пространстве (новые данные и концепции)*: Материалы Международной конференции. К 100-летию отечественной академической археологии, Санкт-Петербург, 18-22 ноября 2019 года. Т. I. Санкт-Петербург: Федеральное государственное бюджетное учреждение науки Институт истории материальной культуры Российской академии наук, 2019. С. 97-100. DOI: 10.31600/978-5-907053-34-2-97-100

³ Eminov Z., Imrani Z., Gasimova E., Vysotskiy O. Possibilities of applying the cluster approach in the study of the stability of the regional territorial organisation of production areas. *Journal of Geology, Geography and Geoecology*. 2024. Vol. 33 (1). P. 55-56.

interpretation of complex datasets, allowing for the identification of distinct clusters and their underlying characteristics. Together, these methodologies provided a holistic and scientifically sound foundation for the research presented in this article.

LITERATURE REVIEW

The literature used directly refers to the works of researchers reflecting the general history of the Mughan region, archaeological excavations, and information about the results of excavations conducted personally by the author.

In the spring of 1941, in connection with the fact that samples of material culture were found near the village of Uzuntepe, the Azerbaijan branch of the USSR Academy of Sciences, the scientific employee of the museum B.M. Gukasov, who went to the Jalilabad district, noted that a large site had been discovered near the village of Uzuntepe during the construction of the Baku-Astara railway line. He began preliminary research work at the site on April 11, 1941, and excavated two graves on April 17. B.M. Gukasov discovered a large number of archaeological materials from these graves – bronze tools and weapons, clay vessels, various types of ornaments and jewellery – and presented the materials he collected to the museum. Later, I.A. Khanumov, an employee of the Azerbaijan Folk History Museum, was sent to the site. As a result of the excavations, a large number of material cultural artefacts were discovered, which were very important for the study of the history of the region⁴.

Farman Mahmudov, based on the results of a comprehensive study of culture samples discovered in the south-eastern territory of Azerbaijan since 1964, determined that the material sites unearthed from Talysh and Mughan are similar and close in terms of their types, characters, historical development and other features. He reasoned that there were not two cultures in this region, but one culture – ‘Talysh-Mughan culture’. This culture was formed in the 14th century BC, lasted until the 7th century, and was one of the types of culture characteristic of the Late Bronze Age⁵. The discovery of the ‘Mughan culture’ is associated with the name of one of the founders of Azerbaijani archaeological science, the prominent scientist Ishaq Jafarzade⁶. In 1941, I. Jafarzade studied material culture examples – pottery vessels, weapons made of bronze and iron, ornaments made of various materials and other finds – discovered in a place called Uzuntepe in the Jalilabad district. In the article published in 1946, he discovered the existence of Mughan culture⁷.

According to the typological analysis of archaeological materials, F. Mahmudov said that ancient people in this region entered a higher stage of production from the accumulation type, which is known as the most primitive level of economic forms that existed until the Bronze Age, they mastered the techniques of agriculture and animal husbandry early, that this type of agriculture was intensively developed as a sedentary agriculture and animal husbandry starting from the beginning of the 3rd millennium BC, that harness power was used for plowing the land, and two-wheeled carts were used for transporting crops.

Until this discovery, archaeologists believed that the horse was first domesticated

⁴ Джафарзаде И.М. Элементы археологической культуры Древней Мугани. *Azərbaycan SSR EA xəbərləri / Известия Академии наук Азербайджанской ССР*. 1946. № 9. С. 16-25.

⁵ Mahmudov F.R. Сənubi-Şərqi Azərbaycanın tunc və erkən dəmir dövrü mədəniyyəti. Bakı, 2008. 229 с.

⁶ Джафарзаде И.М. Элементы археологической культуры Древней Мугани...

⁷ Ibidem.

in the southern Russian plains, in what is now Ukraine, at the end of the 4th millennium BC. However, it has not yet been precisely determined when the horse was first used, whether for hunting or in war. As far as science knows, the Sumerians used riding horses in 2000 BC, the Egyptians in 1400 BC, and the Babylonians in 1200 BC. The Gobustan rock carvings contain depictions of horses that correspond to approximately the same period. Research conducted in recent years has shown that the Mughan region was inhabited as early as the Neolithic period, and that early agricultural culture was formed here on the basis of the local, i.e. Azerbaijani Neolithic culture. The latest research on the Neolithic culture of Mughan is associated with the name of V. Mahmudova. Her research on the Pashatepe Neolithic site was reflected in a number of the author's works⁸.

The author mainly refers to the literature of T. Akhundov⁹ and F. Mahmudov¹⁰, who conducted research in Mughan, and makes comparisons. Since the first archaeological research in Mughan was conducted by I. Jafarzade, we turned to the works of this author for comparison. The Pashatepe site differs from the analogous sites of Mughan in some respects. This difference is mainly due to the fact that the objects made of obsidian constitute a greater number than the studied site. It is for this reason that references were made to the works of B. Leyonnet¹¹ and others.

RESEARCH HISTORY OF THE ARCHAEOLOGICAL SITE

The main archaeological researches in Mughan were conducted in the Jalilabad region. The first extensive, long-term researches were the archaeological excavations conducted by Farman Mahmudov at the Alikomektepe residence. The site was registered in 1966, extensive excavations were carried out for ten years starting from 1971. In 1980, the excavation work in Alikomektepe was temporarily stopped, and it was possible to continue it for a short time only in the early 1990s. A total area of 600 m² has been excavated. The total thickness of the cultural layer was more than 5 m. F. Mahmudov determined the correct direction in his publications of the 80s based on the results of the excavations of Alikomek Hill and wrote that "there is a local variant of the Transcaucasian Eneolithic in Mughan" and attributed it to the end-beginning of the 5th millennium BC. However, in the context of recent years of scientific research, he made corrections to these results.

First of all, it should be noted that in the 1970s and 1980s, all the sites of early agricultural cultures in the South Caucasus were usually included in the Eneolithic period, and their chronology was included in the framework of the 5-4 millennia BC.

⁸ *Махмудова В.А.* Первые итоги полевых исследований на поселении Пашатепе. *Достижения и перспективы изучения археологии Северного Кавказа в XX – первой четверти XXI века. Материалы Международной научной конференции по археологии Северного Кавказа, "XXXIII Крупновские чтения", посвященной 120-летию со дня рождения Евгения Игнатьевича Крупнова / Отв. ред. Д.С. Коробов.* Москва: ИА РАН, 2024. С. 87-95; *Makhmudova V.A.* About the bone objects recorded from pashatepe site (Jalilabad district of the republic of Azerbaijan). *Eurasia international congress of language, history and culture* (April 7-8, 2023, Sanliurfa, Türkiye). Sanliurfa, 2023.

⁹ *Ахундов Т.И.* Неолит Южного Кавказа...

¹⁰ *Mahmudov F.R.* Сənubi-Şərqi Azərbaycanın tunc və erkən dəmir dövrü mədəniyyəti...; *Махмудов Ф.Р.* Первые итоги археологических раскопок на холме Аликемектепеси. *Каменный век и энеолит в Азербайджане.* Баку: Издательство Арзербайджанского госуниверситета, 1984.

¹¹ *Lyonnet B., Guliyev F., Bouquet L., et al.* Mentesh Tepe, an early settlement of the Shomu-Shulaveri Culture in Azerbaijan. *Quaternary International.* 2016. Vol. 395. P. 170-183. DOI: <https://doi.org/10.1016/j.quaint.2015.02.038>

Alikomektepe site was also analysed about these cultural traditions in science in comparison with settlements such as Ilanlitepe of Karabakh, Chalagantepe, Kultepe I of Nakhchivan, and was selected in the context of cultural traditions of these sites. Therefore, F. Mahmudov considered Alikomektepe as a local variant of South Caucasian Chalcolithic.

Since the only accessible method in those years was the method of comparative analysis, F. Mahmudov attributed the site to the Chalcolithic period. However, later radiocarbon analysis from the site proved that it belongs to the older Neolithic period. "The settlements of Alikemek and Kultepe I, located in the Mughan plain and Nakhchivan (Azerbaijan), respectively, were excavated in the 1950s and 1970s and have not been precisely dated. They probably represent a relatively long period, and settlement in the region seems likely to have begun in the sixth millennium BC.¹² The Alikemek Kultepe culture encompassed the Ararat Plain, Nakhchivan, Mil'skoj and Mughan Steppes, and the region around Lake Urmia in northwestern Iran"¹³.

The studies related to the Neolithic period carried out by T. Akhundov in the Polutepe and Alkhantepe sites, located at the same level and in the same area, showed that this region, located between the Mughan plain and the Talysh mountains, has been an intensive and important settlement for ancient tribal communities since the first periods of human history.

The mild climate of the area, abundant water rivers, and fertile soils suitable for planting several times a year were very important for people's economic life in the remaining seasons of the year, besides the summer months.

Another rich site of Mughan's early agricultural culture, Pashatepe settlement is located 22 km from the centre of Jalilabad city, 3 km from Uchtepe village, 19 km from Bilasovar-Jalilabad road, on the right bank of the road from Jafarkhanli village to Jalilabad city, near the village cemetery. There is a road to the site both from Jafarkhanli village and from Jalilabad city. The hill on which the Pashatepe settlement is located is oval-shaped and has an area of about 80 sots. Both sides of the site are at the crossroads. On one side, residential houses were built and gardens were planted. Taking advantage of the anarchy that occurred in the 1990s, they tried to build a house by digging on this hill. However, many people saw their bones coming out and stopped the construction. For this reason, the upper part of the site was destroyed, and the soil that came out of it was ploughed with a tractor and poured onto the lower slopes of the hill.

THE RESEARCH SEASON OF 2022

In the research season of 2022, the 'Mughan Neolithic-Eneolithic Expedition' continued the study of the Pashatepe settlement. The settlement is located on the southern right bank of the Injachay River on the western outskirts of the village of Jafarkhanly in the Jalilabad region of the Republic of Azerbaijan. The site has been preserved in the form of a rounded hill 7.4 m high and an area of about 1 hectare. In past seasons, excavation work began on the southern outskirts of the settlement on

¹² *Lyonnet B., Guliyev F.* Recent Discoveries on the Neolithic and Chalcolithic of Western Azerbaijan. TÜBA-AR. 2010. Vol. 13. P. 219-228.

¹³ *Kushnareva K.K.* The Southern Caucasus in Prehistory: Stages of Cultural and Socioeconomic Development from the Eighth to the Second Millennium BC. Philadelphia: University of Pennsylvania Press, 1997. 279 p.

an area of 11.5×10.5 m and was brought to a depth of 3.45 m. In the past season, an extension of 5×18.5 m was made to it from the southwestern side.

The cultural layer consists of yellowish loam with an ash admixture. The upper horizons of the deposits are moderately saturated with the remains of various artefacts, mainly the remains of ceramic dishes of the Neolithic era, disturbed by late medieval burials.

The ceramics are moulded from clay mass with a plant admixture, which is typical for all Neolithic ceramics of the Mughan Plain. Here are the remains of vessels of various shapes, sizes and purposes. These are primarily the remains of large wide-necked jugs, bowls and cauldrons. The latter are usually equipped with a camspotholders, which is typical for the Mughan Neolithic. At the same time, the cams are often modelled in the form of an animal's head, stylised male and female genitals. All this allows us to assume that, in addition to their functional purpose, they also had a sacred purpose.

The vessels are flat-bottomed, moulded by hand using the strip and patchwork method. They are fired quite evenly and qualitatively. Their surfaces are overwhelmingly covered with light-coloured engobe, depending on the shape and purpose from one or two surfaces. There are also remains of samples covered with geometric painting applied in most cases with a brown colour obtained from bitumen.

In addition to ceramics, which undoubtedly represent the majority of finds, bone and stone objects were found. Bone products are mainly represented by punctures from tubular bones of small animals, processed, depending on the purpose, in various ways. In addition to punctures, but in smaller quantities, burnishers from the tubular bone of small cattle were found. They are made by bevelling one of the ends used as a working part, which acquired a pronounced shine from this and preserved the second epiphysis. Similar punctures and burnishers are characteristic of the Mughan Neolithic sites. At the same time, an object made of a boar's tusks was found, presented in a single copy, the only analogy to which we know from the settlement of Alikomektepe, where it is also presented in a single copy. Finds of items made of boar's tusk are not uncommon at the sites of the Mughan Neolithic, but similar items other than those indicated have not been found. Preliminary acquaintance with these items allows us to assume that they were used in cosmetics. In addition, our find was made with a skeleton in a female burial.

The stone at the Pashatepe settlement is represented by sandstone, flint and obsidian. Sandstone was used to make grain grinders, chimes, mortars and pestles, of which not many have been found in the study area so far. Flint and obsidian are more common. These are both tools and various chips, the functional definition of which is still awaiting its researcher.

Of course, pottery kilns were required to make a fairly large number of ceramic products. Our research has so far revealed two kilns. One is badly damaged. The second one is partially preserved, but quite well. Pottery kilns are not uncommon at Neolithic sites. There are many of them at the studied Mughan Neolithic sites, Alikomektepe and Polutepe. But we have only two analogues of the kiln we found, and both of them were found at the Polutepe settlement. At all sites, they are represented by two-tier structures. But they, including the Mughan settlements of Alikomektepe and Polutepe, except our find and the aforementioned kilns at Polutepe, have a different design. That is, the lower tier is represented by an

elongated trough, with heat-distributing vents extending from it in both directions and going into the upper tier. Our kiln and the two kilns at Polutepe have one container in the lower tier, from which heat-distributing vents extend in a circle in different directions. Unfortunately, we cannot yet talk about the structure covering the upper tier.

In 2022, for the first time, the entrance and wood-burning part of a potter's sphere were discovered at the Pashatepe site. Among the contemporary sites of Azerbaijan, as well as the entire Caucasus, such a fact was discovered only in the potter's sphere recorded from the Alikomektepe site.

However, it should be taken into account that the Alikomektepe site is younger than its time.

BURIALS

A characteristic feature of the Neolithic sites of the Mughan, Mil and Karabach plains is the burials of the dead on the territory of the settlement under the floors and between the buildings. The well-expressed architecture found in this season shows that the location of the burials revealed in Pashatepe is not an exception to this rule. Over the past three field seasons, we have identified 14 burials of residents of the Pashatepe settlement in the Neolithic era.

Body position is presented in all. There are single and double, dismembered burials, including adults and teenagers, of different sexes. All of them are located to different degrees, shortened to the side. Expressed burial pits are not observed, although weakly expressed depressions are visible. Burials were often accompanied by parts of sacrificial animals.

A wall was recorded in the north-west part of the site, where the skull and back bones of large and small horned animals were buried. As that part was cleaned and went down, it turned out that the ground was plastered with clay. When the area was swept and cleaned, it was found to be the floor of the house. Traces of bone remains were recorded from the middle part of the floor. That part was opened with the help of a digger and trowel with great difficulty. It was discovered that there is a grave belonging to two people (No. 10). One of the skeletons was buried with its head to the southwest, and the other to the northeast. Every skeleton was facing west. One of the skeletons was buried in the shape of a shaft, with arms and legs very tightly folded. Its length was 56.8 cm. A small piece of clay incense, divided in the middle, was placed under the head of this skeleton in front of its straight face. The arms of the second skeleton were raised towards the face with their arms tightly bent at the elbows, and one of their legs was slightly bent at the knee, and the other was relatively half-bent. The skeleton was 1 m 44 cm long. This skeleton, like the first skeleton, was buried with a small piece under its head, and a second part of the same large badian, divided in half, was placed in front of its straight face. In the southeast part of the grave, a stone from the reed bone of the leg, which is believed to belong to a large horned animal, was placed on top of it, and a large stone with a human figure carved on top of it was buried (Figure 10)¹⁴.

¹⁴ *Makhmudova V.A.* About the pendants found at the Pashatepe settlement (Jalilabad region of the Republic of Azerbaijan). *Conference Proceedings Book: '6th International African Conference on Current Studies on Contemporary Sciences' (February 10-11, 2023, Libya, Tripoli)*. İKSAD Global Publishing House, 194-197.

The back part of that animal was buried in the back of the 1st skeleton in the grave. Opposite the skeletons, near the foot, a polishing tool made of bone, 14.6 cm long, 2.5 cm in diameter, was recorded. 11 sling stones made of stone and clay were found on the grave. A flail head (Figure 8) with a height of 5.8 cm and a diameter of 6 cm was found 36 cm from the area where the grave was discovered. The object is made of marble stone, with a neat hole in the middle. The dm of the hole is 1.5 cm. On the one hand, there is an edging on the edges of the hole.

MATERIAL CULTURE

Stone Artefacts. Mineralogical and chemical analysis of these items led to very interesting results. The analysis proved that the items were made of morion quartz.

Morion is the stone of priests, fortune-tellers and sorcerers of witches, highly valued by alchemists. The mineral is used as a conductor and guide to other worlds for mental travel to the past and future, communicating with otherworldly forces. Its power was used by necromancers in séances of spiritism, mystical séances, and invoking the spirits of the dead. Considering that two of these objects, a hanging knife and one with a jagged edge, were found in the grave, we can argue that they were used for mythical purposes and belonged to priests or people performing religious rites. Information about morion deposits in Azerbaijan and the Middle East has not been found. Research shows that the closest morion deposits to Azerbaijan are in the North Caucasus.

While the grave was being cleaned, a knife-shaped hanging object made of black stone was discovered under the foot of the second skeleton. The length of the object was 7,5 cm, width 4,3 cm, thickness 0.1 mm. In the corner of the square where the same grave was found, another item (Figure 9-1), made of mineral stone, made of a hanging knife, was recorded. This object is 5 cm long, 2,5 cm thick, and 1 cm wide. There are signs of use on one side of the item.

Table 1. Chemical composition of the submitted sample, – in %.

Na ₂ O	MgO	Al ₂ O ₃	SiO ₂	SO ₃	K ₂ O	CaO	TiO ₂	P ₂ O ₅	MnO	Fe ₂ O ₃	Cl-	YTI
0,002	0,003	0,001	0,002	98,07	0,004	0,24	0,003	0,001	0,002	1,59	0,003	0,01

Table 2. Mineralogical composition, – %.

SiO₂ (a-kvars)	Fe₂O₃ (hematit)	Other compounds
98	1,5	0,5

The mineralogical and chemical analysis of those items led to very interesting results. Analyses proved that the objects were made of morion quartz (Table 2).

α – quartz, which is the most common modification of silicon oxide (SiO₂) in nature, is usually called simply quartz (K). Quartz is usually colourless, milky-white, gray; a number of varieties of different coloured transparent and translucent quartzes have special names: rock crystal; marble diamond – clear quartz like colourless water, amethyst – purple quartz, citrine – yellow quartz, morion – black quartz.

Morion (Latin morrosus – ‘dark, gloomy’, sometimes – black crystal) is black or

dark brown quartz. In opaque specimens, only thin fragments or parts of the morion are slightly translucent, as observed in obsidian. The processed species of morion can easily be confused with obsidian. Unlike morion, obsidian is never found in nature as crystals.

Information about morion deposits in Azerbaijan and the Middle East has not been found. Tons of morion crystals were discovered only in Ukraine, Madagascar, Kazakhstan, Canada, USA, Brazil, and Russia (Ural, Transbaikal, North Caucasus, Aldan).

It is known that there are enough quartz sand deposits in Azerbaijan. However, there are no morion deposits. Glass sand contains less iron, about 0.3%, and morion has 1.5% (Table 1). Research shows that the nearest morion deposits to Azerbaijan are in the North Caucasus. It can be concluded from this that the carriers of the early agricultural culture of Azerbaijan maintained relations not only with the inhabitants of the Middle East of the same period, but also with other tribes of the Caucasus.

For the first time in history, records are found in Pliny under the name 'momorion', which also refers to the Indian version of the name – 'pramniion'. At the same time, it is noted that morion has magical and mythical properties, it is one of the most powerful protectors against magic and negative energy, increases concentration and overcomes communication difficulties, gives confidence and attractiveness to the male half of humanity, transforms negative energy into positive, develops positive and pragmatic thinking and overcomes stress, anger, nervousness, envy and excessive emotionality.

The use of Morion in everyday life dates back to ancient Egypt, where the natives wore thin Morion plates with bronze edges to wear like modern 'sunglasses'.

Morion is a stone of witches, priests, fortune tellers and sorcerers, highly valued by alchemists. The mineral is used as a conductor and guide to other worlds for mental travel to the past and future, connecting with otherworldly forces. Its power was used by necromancers in séances of spiritism, mystical séances, and invoking the spirits of the dead.

Mystical abilities are often attributed to the ability to control the behaviour of several people at the same time. Connoisseurs of stone skills claim that even gambling addiction and other pathological hobbies are reversed in the presence of black morion crystals. The mineral removes uncertainty, unreasonable fears, phobias and anxieties. It helps to forget old unpleasant moments from life. It promotes a sense of stability and creates a sense of security. Recently, the stone has been widely recognised as an attribute for meditative practices.

Morion's healing power is a medicine for the blood, dissolving clots and cholesterol plaques inside the blood vessels. Natural morion is very useful for congestion and varicose veins. Helps recover from a stroke or heart attack. The stone helps in the healing and sanitation of the musculoskeletal system. By applying mineral crystals to the affected areas, you can prevent aches and pains in the joints. It heals bone sprains well, relieves muscle spasms and burns.

Stone experts claim that morion neutralises and removes poisons from the human body. It helps to resist drug and alcohol addiction, to fully return a person to normal life. Rehabilitation in this case is easier and less painful.

The second of these objects was a 7.5 cm long, 5 cm wide and 3 cm thick object with a jagged edge (Figure 7-2), which was found in the grave. Based on the

assumption that morion was used for mythical purposes, we can argue that these objects belonged to priests or people performing religious rites.

Figures. There are many interesting finds. The clay figure of a woman turned out to be one of our studies. Clay figurines of women characteristic of Neolithic sites were also found in the settlements of Alikomektepe and Polutepe. From the area of the site studied to a depth of 9.5×18×3.05 m in two seasons, a hearth, two pottery spheres, a grave observed with 12 different burial customs, a large amount of pottery fragments, osteological remains, stone and clay objects, and decorations (Figures 1-7) were recorded. Among them are some interesting stone objects that we are involved in today's research.

CONCLUSION

The results of the archaeological research conducted in recent times in the sites of the early sedentary farmer-herder culture located in the Mughan plain allow us to say that this region was one of the centres where the local Neolithic culture was formed in the South Caucasus in the 6th millennium BC. Such is our knowledge about the settlement of Pashatepe today. But the primary analysis of the obtained materials and their comparison with those of the investigated settlements of the Mughan plain, first of all with the stationary investigated settlements of this region, Alikomektepe and Polutepe, also allows us to determine the place of the Pashatepe settlement in this system. Based on of our comparisons, we can confidently attribute the Pashatepe settlement to the sites of the tribes carrying the tradition of the Mughan Neolithic, occupying a narrow strip bounded on the east by the Kaspi Sea and on the west by the foothills of the eastern slope of the Vuravar Ridge dissected by small rivers and the present drylands descending from the ridge towards the sea¹⁵. Like many other sites of this tradition, it is confined to the banks of these water arteries. The settlement of Pashatepe, together with the settlements of Indzhachay, Alikomektepe and Polutepe, is part of a single system of settlements confined to the right bank of the Indzhachay river.

The progressive traditions transmitted from the south to the north or vice versa during the mentioned period conditioned the formation of the early sedentary farming culture of the region in the Mughan area, which served as the main transit region in the transmission of these traditions. Unique architectural features, technical-technological differences observed in the production of ceramics make it possible to distinguish the Mughan Neolithic carriers from other local Neolithic cultures of the Caucasus.

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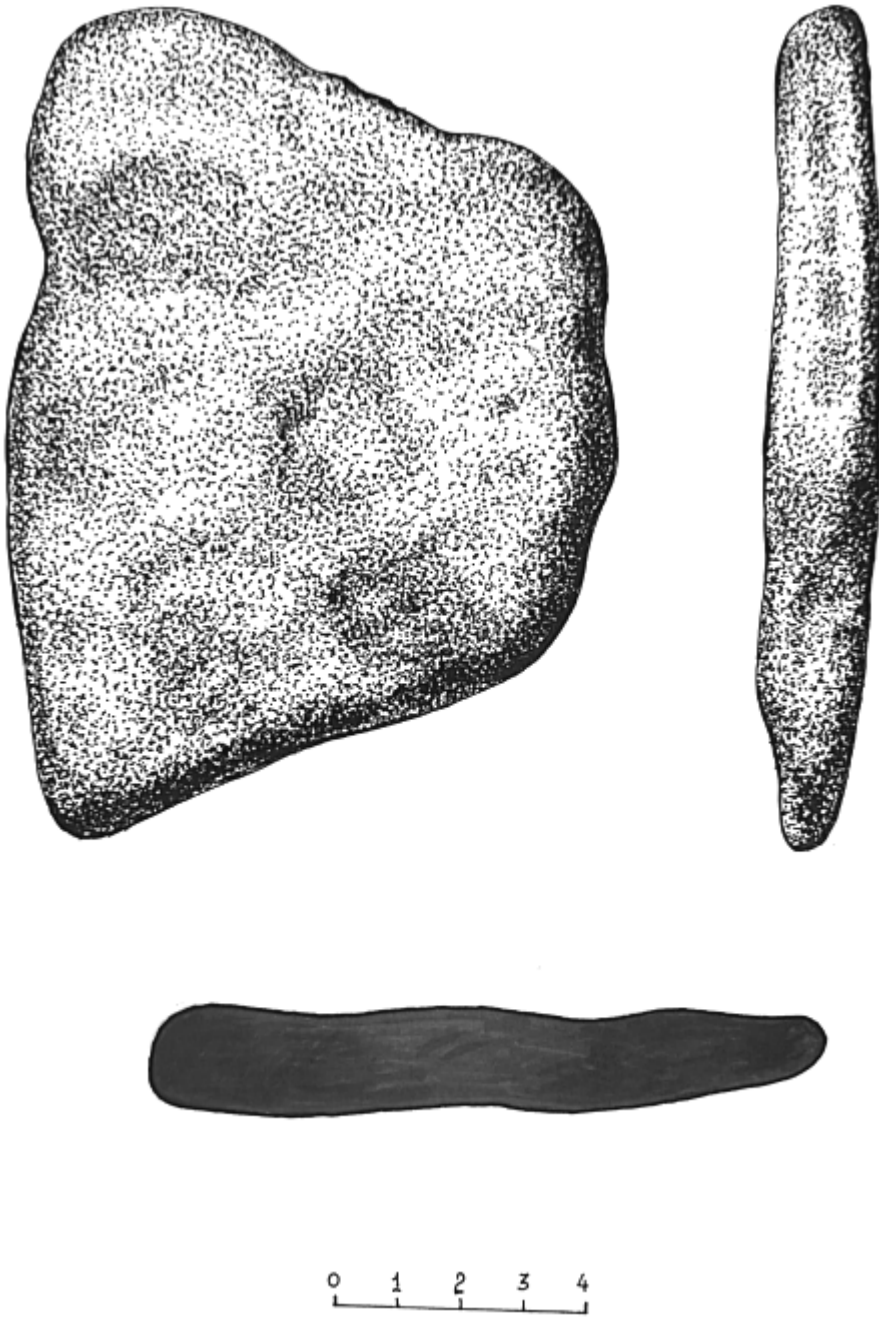


Figure 1. Stone hoe

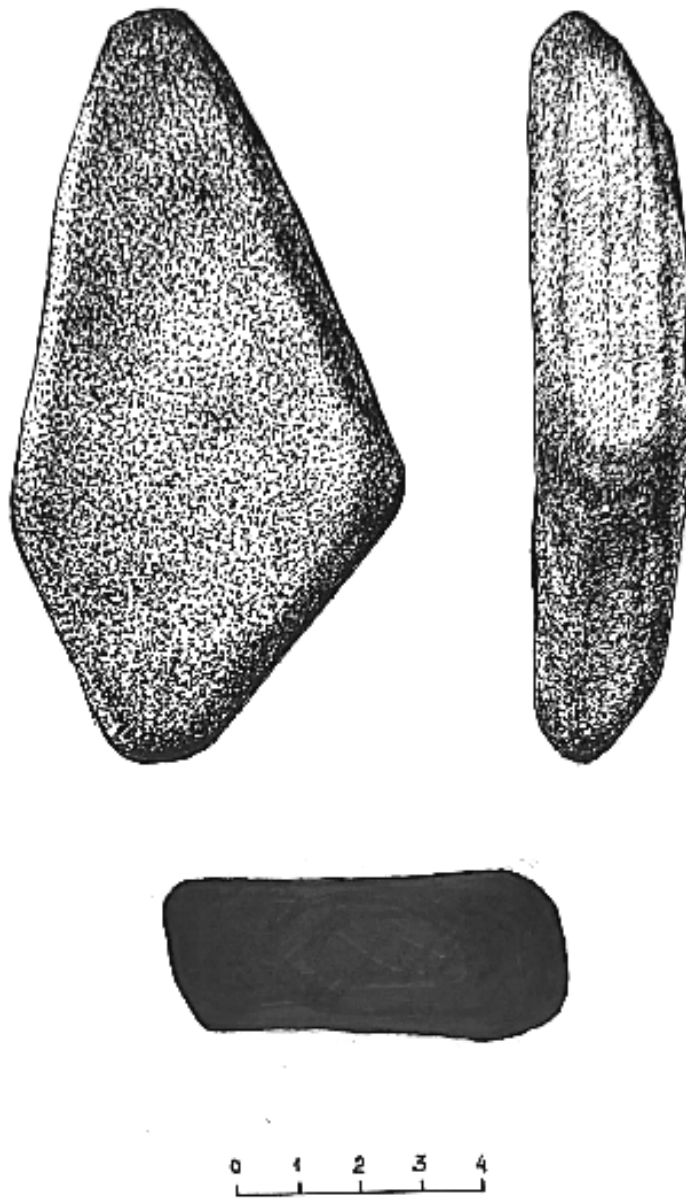


Figure 2. Whetstone

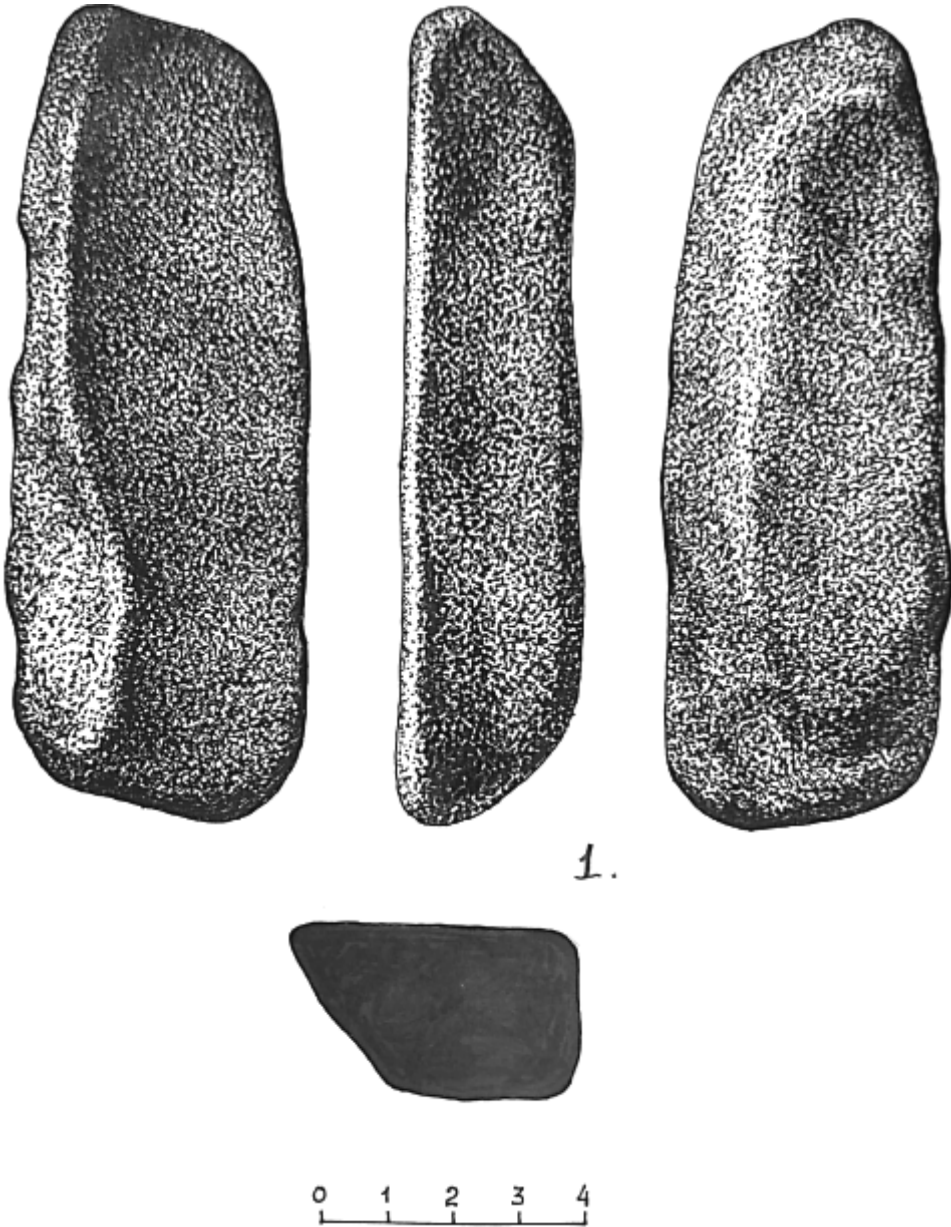


Figure 3. Whetstone

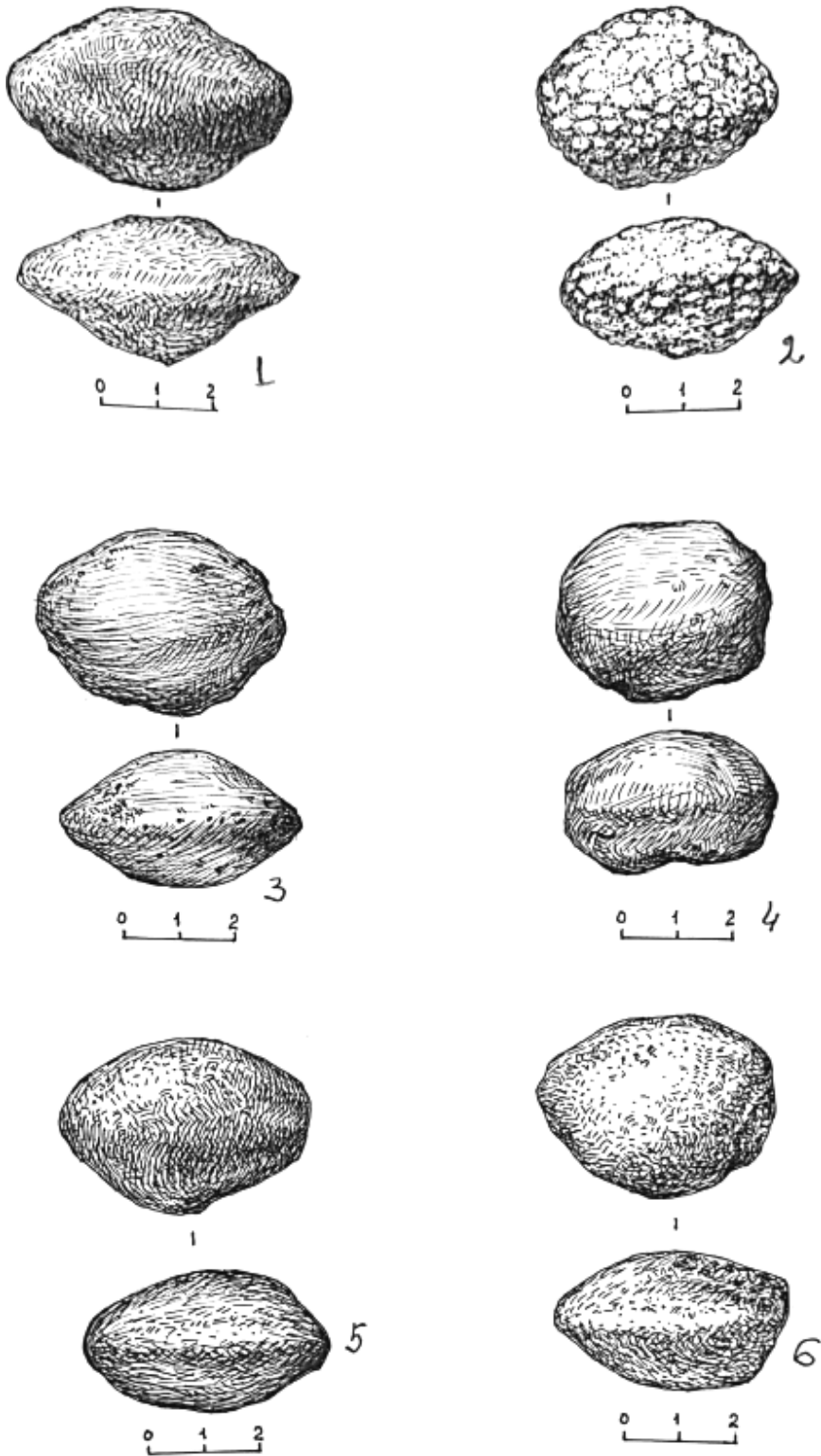


Figure 4. Clay sling stones

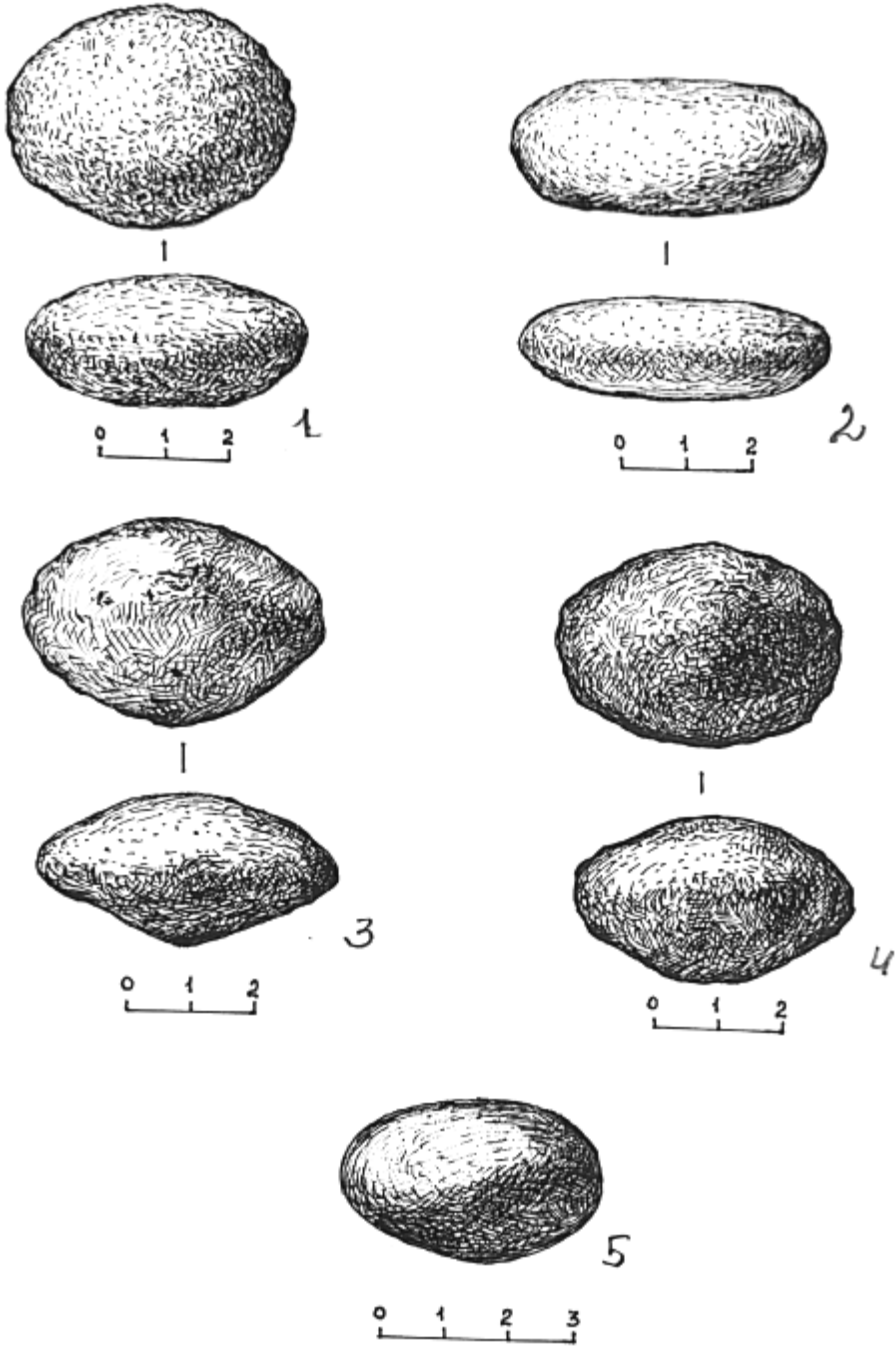


Figure 5. Clay sling stones

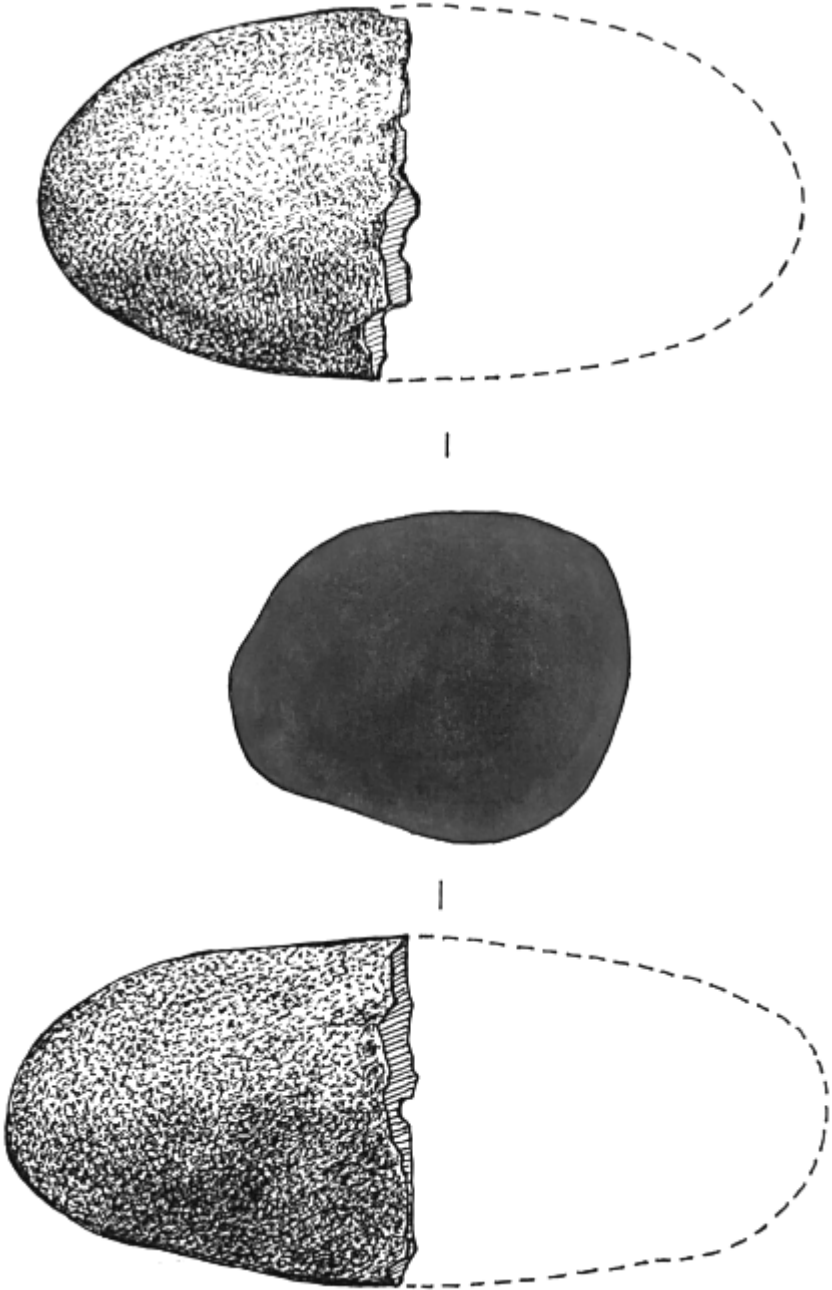


Figure 6. Part of a stone ax

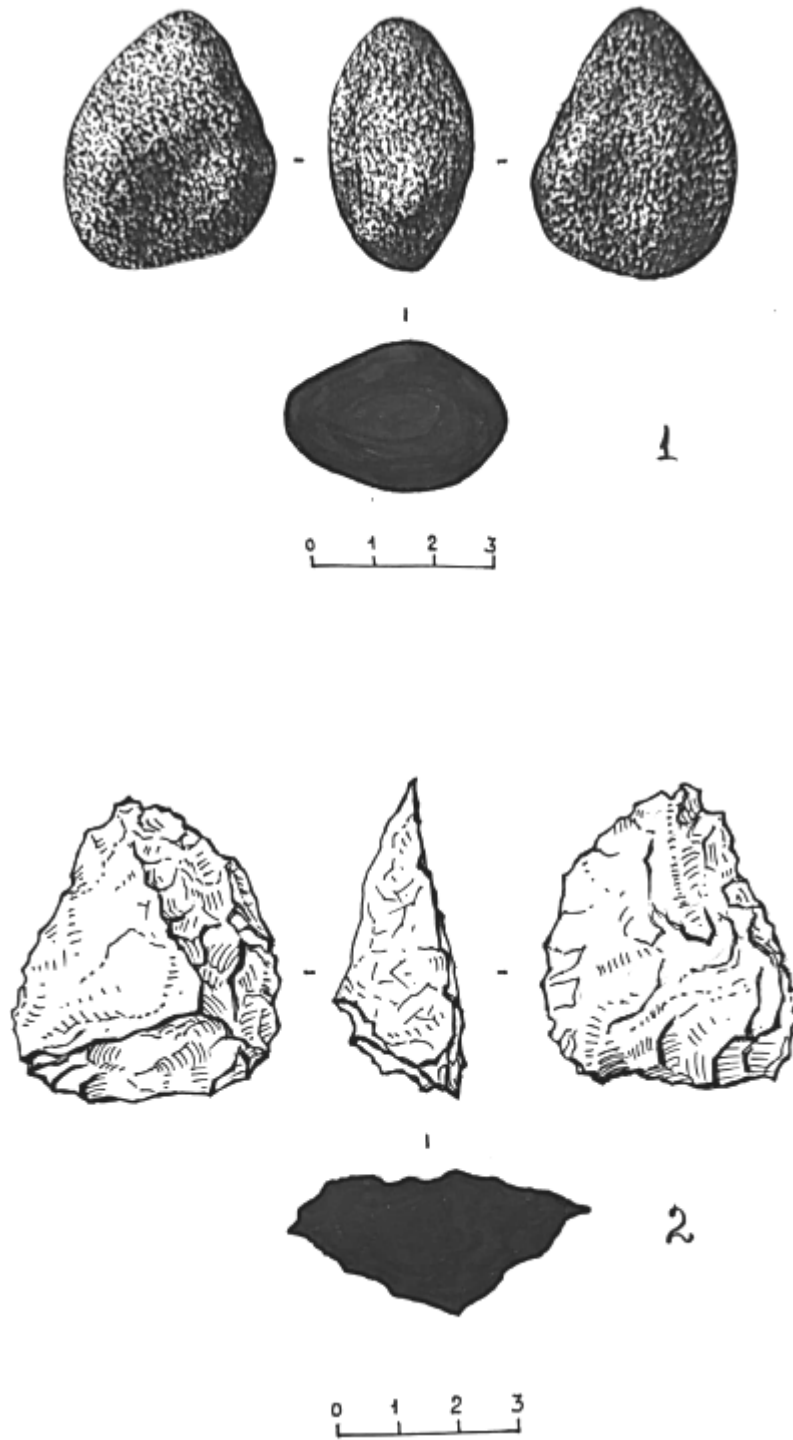


Figure 7. 1) Stone sling 2) Obsidian

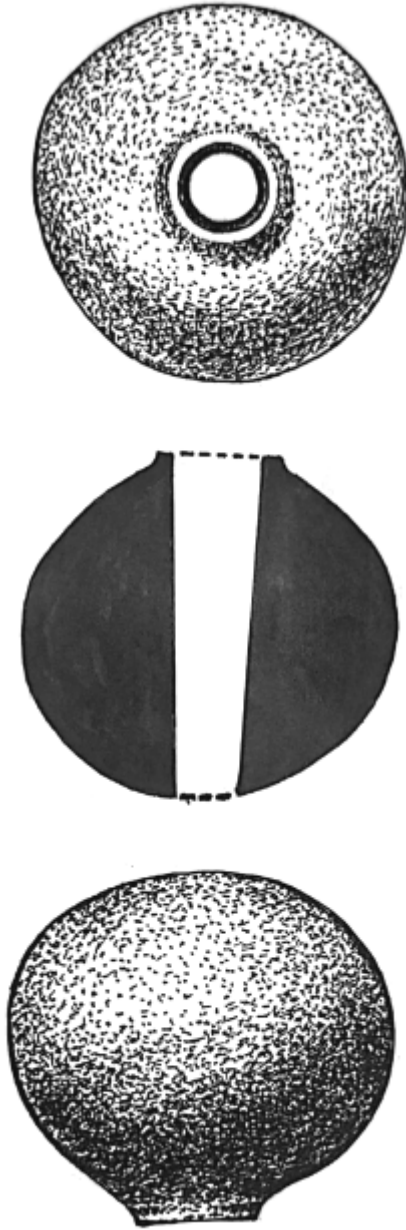


Figure 8. A flail head

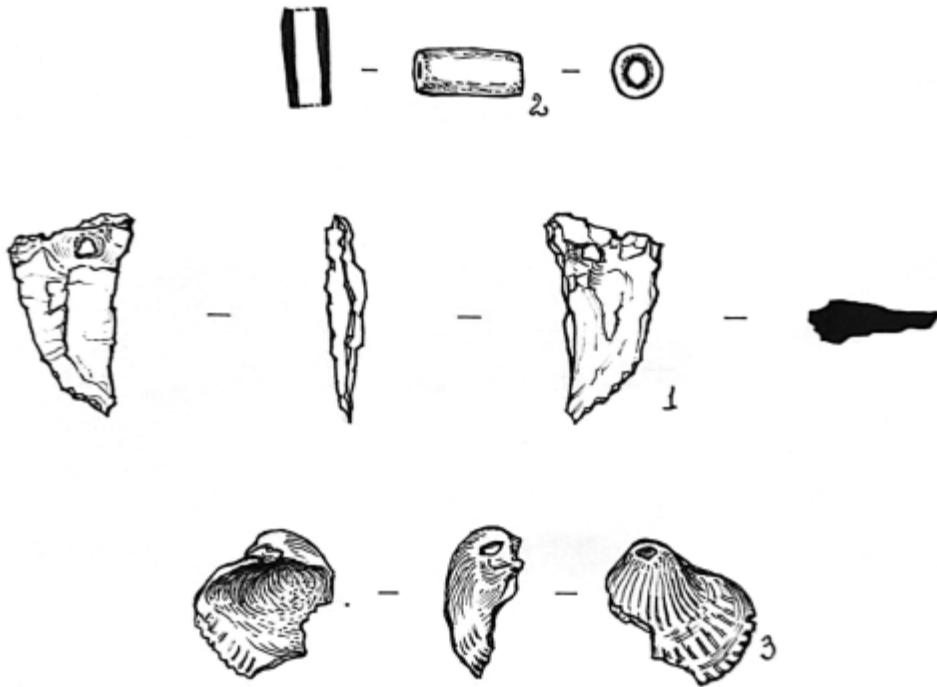


Figure 9. Hanging ornaments 1) Bone 2) Morion 3) Fish ear



Figure 10. Sacral stone



Figure 11. Hanging ornaments 1) Morion 2) Fish ear

Figure 12. Hanging ornaments:



12.1. Goddess statue



12.2. Bone instruments



12.3. Bone thing