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AT THE CROSSROADS OF EUROPE AND ASIA  
[STONE AGE CULTURES OF EASTERN EUROPE, KAZAKHSTAN AND CENTRAL ASIA]

## ПРОГРАММА PROGRAM



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## **The excavation of the Buiryokbastau-Bulak-1 site in southern Kazakhstan**

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### **1. Introduction**

In recent years, in southern Kazakhstan, new Palaeolithic sites have been found on river terraces and hills along small rivers in hilly areas at an altitude of about 1000 m at the northern foot of the Tien Shan Mountains. I will introduce the excavation results of one of them, the Buiryokbastau-Bulak-1 site.

The Buiryokbastau-Bulak-1 site is located on the edge of a plateau in the eastern hilly area at the foot of the Karatau mountains. The elevation is 465m a. s. l., and the coordinates are 43°06' 36.24" N, 70°34' 03.70" E. Just as this site's name meaning suggests, the fairly steep slope of the hills flattens out in this area and a large spring can be observed. Many stone tools were scattered on and around the bottom of the stream which flows from the spring. The site is intersected by the stream which has eroded down through a hilly slope to leave flat areas skirted by elevated ridges on either side of the watercourse, a difference in elevation between the flat bank edges and the surrounding ridges is approximately 2 m. For the excavations carried out in 2018 and 2019, the flat land along the two banks of the stream was excavated. Two locations in the lower elevation area were selected. At a distance approximately 10 m downstream from the point where the stream flows from the spring. Excavations targeted the left bank in 2018 and the right bank in 2019. The total area excavated in the two seasons was 24.3 m<sup>2</sup>. A 1m grid was set up in the survey area, and the excavation was carried out carefully layer by layer. Artifacts discovered in each stratum had their position and depths recorded.

### **2. Stratigraphy**

The basic stratigraphy can be broadly classified into 4 strata. The full depth of the deposition is 40–50 cm. The layers consisted of the following. Layer 1: blackish brown soil (about 5–10 cm), traces of roots and nests of insects were observed, containing pieces of steel and glass, layer 2: redeposited loess soil (about 5–10 cm), consisted of little blocks (maximum 2 cm) of coarse loess soil, and contained no artifacts, layer 3: dark brown coarse sand (about 10–15 cm), contained stone tools and fragments of bones, and layer 4: dark brown silt soil (about 15–30 cm), consisted of dark brown clay and gray coarse sand. The gray coarse sand was particularly dominant on top of the weathered rhyolite bedrock. The whole of layer 4 contained stone tools and little fragments of bones. These sediment layers were deposited on a base of gray-white rhyolite rock approximately 40–50 cm below the surface. The 2nd layer of sandy soil containing loess appears to have been redeposited from the higher elevation area. The 3rd and 4th layers appear to be the result of stream deposition and, since the boundaries involve

straight lines, the 3rd layer was probably deposited by a strong current flattening the 4th layer. The bedrock had numerous east-west cracks, and the 4th layer was deposited between them. In addition, weathered soil consisting of bedrock rhyolites was deposited in the cavities of the bedrock in places. As noted, artifacts were recovered from the 3rd layer and 4th layer. Although the 3rd layer was found to have a consistent thickness (about 10–15 cm) in both excavations, the 4th layer became thicker closer to the stream. While bedrock was only observed in areas close to the stream during the 2018 excavation of the left bank, it was found throughout the entire excavated area in the 2019 excavation of the right bank.

### **3. Cultural layers and excavated artifacts**

The artifacts were classified into two cultural layers based on the stratum of excavation and vertical distribution. The artifacts recovered from the 3rd layer are referred to as the ‘upper cultural layer’ and those from the 4th layer are referred to as being part of the ‘lower cultural layer’. In the upper cultural layer, there were 320 stone tools (point, side/end scraper, notched tool, drill, burin, utilized flake, biface, retouched flake, flake, pebble tool), 40 cores, 2 pieces of ochre and 43 bones for a total of 405 artifacts. The findings in the lower cultural layer consisted of 75 stone tools (point, side/end scraper, drill, burin, utilized flake, retouched flake, flake, hammer stone, pebble tool), 30 cores, and 1 rock crystal and 6 bones for a total of 112 artifacts. A total of 517 remains were thus excavated from the upper and lower cultural layers. Regarding, the southwest corner of the 2018 excavation, it should be noted that most of the upper cultural layer and some of the lower cultural layer had already been excavated as part of a test excavation conducted in 2017 which produced an additional 85 stone tools and 5 bones. Black shale and black flint comprises over 90% of the raw materials represented in both of the cultural layers. Outcrops of black shale can be seen around 200m away from these excavations, and black flint is a very common raw material at a number of Palaeolithic sites around the Karatau mountains. Both of these raw materials can thus be considered ‘local’.

### **4. The upper cultural layer**

This cultural layer is comprised of dark brown coarse sand. Artifacts were densely distributed in the flat areas near the stream in both of the excavated areas. Assuming that the low elevation area had also been the lowest point in the area surrounding the stream in the past, these artifacts were likely washed away when the stream deposited the 3rd layer of coarse sand. In both the 2018 and the 2019 excavation areas. point end-scraper side-scraper notched tool drill burin Pi`eces esquill`ees utilized flake biface retouched flake flake pebble tool microblade core core other Grand total Excavation in 2018 black shale 9 5 layer. The cylindrical microblade cores and the small side and end flake scrapers are distinctive. The tool ratio which is the value obtained by dividing the total number of points, end/side-scrappers, notched tools, drills, burins, pieces esquill`ees, utilized flakes, bifaces and retouched flakes

by grand total number of artifacts was 59%, which is extremely high. Among the findings, there were 91 side scrapers and 61 end scrapers.

### **5. The lower cultural layer**

This cultural layer is comprised of dark brown silt soil and weathered bedrock soil. There is a clear differentiation from the upper cultural layer in the vertical distribution of the artifacts. Artifact distribution appears to be centered around the left side of the stream bank. As a result of the gentle current in the surrounding area of the spring, the stone tools were probably moved away from their original positions and deposited in the dark brown silt soil, accumulated as the 4th layer, and directly above the bedrock, mainly on the left side of the bank. Following the formation of the 4th layer (lower cultural layer), the coarse sand of the 3rd layer, which contains the upper cultural layer, was most likely deposited by a strong current that wore away portions of the 4th layer. Bladelet cores were found in both excavation areas, with medium-sized blades of approximately 7 cm, blade cores, and end scrapers being distinctive findings. The tool ratio which is the value obtained by dividing the total number of points, end/side-scrapers, drills, retouched flakes and utilized flakes by grand total number of artifacts was 49%, which is again extremely high. In terms of the characteristics of the side scrapers and end scrapers, a distinctive difference between the two layers was observed, with larger blades used more frequently in the lower cultural (10 pieces) layer than in the upper cultural layer (0 pieces).

### **6. Stone tool typological similarities**

The artifacts in the upper cultural layer were characterized by cylindrical microblade cores and small side and end scrapers. In terms of the form of the microblade cores, the materials found at the Karaungur (Караунгур) cave (Taimagambetov, Nokhrina, 1998) in the hilly areas at the western foot of the Karatau mountains and at exposed sites at the Shahantai (Шахантай)-1 site (Bekseitov 2007) located at the eastern foot of the Karatau mountains are similar to those from the upper cultural layer of Buiryokbasutau-Bulak-1. Although there are no firm radiocarbon dates in these other sites in the Karatau mountains, the form of microblade cores of these sites is typologically attributed to the Mesolithic period. In the lower cultural layer, the remains were characterized by bladelet cores, and side and end scrapers made with medium-sized blades of approximately 7 cm. These carinated bladelet cores found in the lower cultural layer indicated a clear distinction between the two layers. In what follows, we are particularly focused on the lower cultural layer. Given that both the upper and the lower cultural layers contained fluvial sediment, it is unlikely that the artifacts were found in their original positions. This is especially true for the lower cultural layer, which was flattened when the upper cultural layer was deposited, potentially causing many stone tools to flow out. This is probably the reason why no bladelets were found despite wet-sieving being used. The deposition of the lower cultural layer was not uniform and consisted of both clay and coarse sand. Therefore, in the period of



the deposition of the lower cultural layer it seems that fluvial activity was stronger than it is today in the modern situation and the heavy disturbance by fluvial process effected the distribution of artifacts. Due to this, it seems that small artifacts did not remain in this area. Fluvial processes clearly influenced the formation of the site. And artifact deposition should be considered as the result of redeposition. Nonetheless, vertical distributions of the two layers suggest a clear difference. Although it seems to be an incomplete assemblage, when the composition of the carinated bladelet cores and the medium-sized blade scrapers of the lower cultural layer are considered, and comparisons are made to other sites in Uzbekistan, Tajikistan, and the Altai region of Russia, the composition of the most compatible typological affiliation for the material appears to be the EUP. In the EUP industries found in Uzbekistan and Tajikistan, bladelet production was more developed than in the surrounding areas and is thought to derive from the Kulbulakian tradition (Kolobova et al., 2014). On the other hand, in the southern parts of Kazakhstan, located to the north of those areas, there are no sites clearly identified as belonging to that tradition. In the northern foothills of the Tien Shan mountain range, EUP period bladelets have been excavated from the Kurama (Курاما) site in Kyrgyzstan (Charginov 2015) and from the Maibulak (Майбулак) site in Kazakhstan (Taimagambetov, Ozherelyev, 2009). However, since very few carinated bladelet cores have been found at these two sites, no clear conclusions could be drawn. For this reason, carinated bladelet cores excavated from the lower culture layer at Buiryokbastau-Bulak-1 can be compared in more detail with those from Uzbekistan and Tajikistan, which are considered representative of the Kulbulakian tradition, in order to further inform existing hypotheses of technological spread and change in the region. The focus of these comparisons was on the size and morphology of the bladelets, as well as on the bladelet production technology used. The results of these comparisons were also used to validate the attribution of the lower cultural layer remains to the EUP period.

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**【Summary】**

the Buiryokbastau-Bulak-1 site is a site that was newly discovered during survey in the Karatau mountains, at which two clear cultural layers were identified during excavations in 2018 and 2019. Although these two cultural layers consist of alluvial deposits formed by fluvial erosion of a hilly slope, their stratigraphic distribution was orderly and they likely remain in their original depositional positions. Material from the lower cultural layer, including carinated bladelet cores, medium-sized blade cores, and end/side scrapers on medium-sized blades, provides the data for this analysis. Statistical analysis of the bladelet cores indicates that the size and shape of bladelets from the cores of the Buiryokbastau-Bulak-1 site were very similar to those from the Shugnou site in Tajikistan.