

Borselan Rock Shelter: A Brief Report of the Middle Paleolithic Evidence on the Northern Slopes of the Binalud Mountain Range, Northeast of Iran

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Introduction

Northeast of the Iranian plateau, as a mountainous region full of mineral and water resources, has a high potential to attract human populations. The presence of Atrak River in the middle of the two main mountain ranges of Kopeh Daq and Binalud, has acted as a corridor with high environmental attractions. This issue became double in importance, especially during the interglacial and relatively warm periods when the snow line receded to higher altitudes and undoubtedly played a significant role in the movement of human populations in this part of the Iranian plateau. This is an issue which has not been overlooked by Paleoanthropologists and has been one of the first target areas in tracing evidence of the Paleolithic period [1-3]. These studies have been resumed after a long interruption and have continued over the last decade, albeit in a decentralized manner [4-9]. Meanwhile, the only indoor Paleolithic settlement is Keyaram Cave, which is located at the northern end of this part of the plateau. This has raised a lot of questions. Borselan Rock Shelter on the northern slopes of the Binalud Mountains can

be considered another site that provides evidence of the Paleolithic period, which will be discussed in the following.

Geography of the Study Area

From the geological point of view, the northeastern plateau of Iran is associated with orogenic activities in the eastern Alborz, which includes two mountain ranges of Binalud in the southern belt and Kopeh Daq in the northern belt. A plain is located between these two mountain ranges, the eastern end of which leads to Mashhad plain and finally to Sorkh, and the western and northwestern parts of which lead to Quchan and Bojnurd. Atrak River, as the most important catchment area in its western part, originates from a place near Quchan, and Kashfrud River flows mainly towards its eastern parts. The high potential of these water resources along with the sources of raw material are two key factors influencing the uptake of Pleistocene populations that, besides the corridor-like nature of this region, play a key role in the spread of hominids to central parts of Central Asia (Figure 1).



Figure 1: (A) Location of the study area in the northeast of the Iranian plateau. (B) Location of Borselan rock shelter.

Borselan Rock Shelter

Borselan Rock Shelter is located in the middle of intermountain valleys of the northern edge of the Binalud Mountain chain. This valley, which is situated in the northwest-southeast direction along the northern edge of the Binalud Mountain range is 11 km long and has a relatively dense vegetation due to the surface water currents that flow in the middle of it. Borselan rock shelter is positioned in the northwest of a village with the same name and at a distance of

700 meters near the valley bed. The shelter is 7 meters long and its depth is less than 3 meters, while its height is a little more than 280 centimeters. Existence of Diorite raw material outcrop in the peripheral parts of the area, which can be traced up to a radius of 500 meters, as well as the presence of surface water resources in the middle of the valley, originating from upstream springs of the valley, could have played a significant role in its formation (Figure 2).



Figure 2: (A) View of Borselan Rock Shelter. (B) Diorite stone raw material block.

The Stone Tool Assemblage of Borselan Rock Shelter

During the authors' field visit to Marko Rock Shelter, a lithic artifact assemblage was sampled from the surrounding parts of the, consisting of 31 pieces, almost all of which are made of basalt, raw material that is abundantly available around the shelter. The resulting collection can be classified into four categories: Cores, Flakes, Retouched pieces and finally debris. Meanwhile, the relatively high presence of cores and raw flakes in the assemblage along with the outcrop of the raw stone material existing around the settlement, further strengthens the idea that the collection may

have belong to a workshop (Table 1). Among the tools obtained from this collection, a two-sided tool can be mentioned that is important in its own kind. This two-sided tool is 10 cm long and 8 cm wide and the negative removals on its surface can be clearly observed. The low dimensions of this bilateral, along with the presence of indicative typical pieces such as Levallois flakes, as well as the lack of identification of indicative industries of later periods, reinforces the idea of attributing this collection to the Middle Paleolithic period. It is noteworthy that in Damghani site of Sabzevar, a two-sided with small dimensions and similar flaking technique was also previously identified and attributed to the Middle Paleolithic [5, Figure 3].



Figure 3: Selection of artifacts discovered in Borselan Rock Shelter. 1. Chopper-Core, 2. Biface, 3-5. Levallois flake, 6. Side Scraper.

Table 1: The general composition of the lithic artifacts obtained from Borselan site.


Type	No	%
Chopper- Core	3	9.67
Core-scraper	1	3.22
Core frage	4	12.9
Biface	2	6.45
Polyhedron	3	9.67
Cortical flake	3	9.67
Broken flake	4	12.9
Levallois Flake	3	9.67
Side scraper	2	6.45
Retouched flakes	1	3.22
Debris	5	16.12
Total	31	100

Conclusion

As discussed above, the northeast of the Iranian plateau has been studied in a decentralized manner during two time phases several decades apart. These studies resulted in identification of several Paleolithic sites attributed to at least two major periods, the Lower Paleolithic, and Middle Paleolithic. Although no information is available on its Upper Paleolithic and its Epipaleolithic periods, it should not be forgotten that the available information has mainly become available through surface findings and most of the reported sites are open-door, of which Keyaram site is an exception. However, due to the long time that has passed since its excavation, as well as the lack of absolute chronology and verification studies, the evidence provided is not as helpful as it should be. Borselan rock shelter on the slopes of Binalud mountain range is another site that can provide reliable information on Paleolithic studies in the northeast of the Iranian plateau and enhance our knowledge of the Middle Paleolithic industry, something that can only be realized by purposeful excavations.

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