

QALEH KURD CAVE: A MIDDLE PALEOLITHIC SITE ON THE WESTERN BORDERS OF THE IRANIAN CENTRAL PLATEAU

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1 Introduction

Until a few years ago, our Paleolithic knowledge of the central plateau was limited to the accidental discovery of lithics in a few open-air sites [Malek Shahmirzadi 1994; Biglari 2003; Vahdatinasab *et al.* 2009]. At the same time, several places have been discovered and even excavated in other parts of Iran, such as Alborz and Zagros.

As a consequence, over the past decade, a lack of goal-oriented research on the central plateau has created a misleading and incomplete perspective of its Paleolithic archaeology. Therefore, investigations have begun into the possibility of recovering any remains left as a result of human activity in the area during the Paleolithic period. So far, this new research has enabled us to identify some sites with Paleolithic remains. It has also helped us to reassess the previous belief that Paleolithic sites were absent from this region.

The main reason behind such a belief was the major geomorphological differences with areas such as Zagros and Alborz; this resulted in previous researchers forming the hypothesis that as the geomorphological elements of the central plateau did not show any signs of cave formations or rock shelters, it was, therefore, not suitable for the presence of hunter and gatherers.

Moreover, archaeological investigations in the region are skewed mostly to later periods. So, in the majority of the archaeological studies, the Paleolithic era has not been of equal importance as the Neolithic era onwards. On the other hand, archaeological studies on Neolithic and Chalcolithic villages of the area and, in particular, excavations in two or three places in different parts of the central plateau indicate the extent to which geomorphology has changed over time and have shown that Holocene deposits cover vast parts of the area (Tehran, Qom, and Qazvin) [Annells *et al.* 1975; De Morgan 1907; Kaboli 1999; Negahban 1972; Tehrani Moghaddam 1992, 1997].

Hence, it seems that the identification of places with pre-Neolithic remains was never expected nor assumed.

2 Paleolithic era in the central plateau and the Qazvin region

Unlike the Zagros region and even northern Alborz, the number of Paleolithic sites in the central plateau is relatively few (Fig. 1).

Zagros had tangible environmental potential as a strategic location for hunting, with the presence of caves, rock shelters, and inter-mountain valleys or canyons, as well as abundant water resources, and, most importantly, adequate sources of chert stones, which made it desirable for human occupation. However, a higher concentration of Paleolithic investigations in the region can also be seen as a reason for the presence of a greater concentration of Paleolithic sites in comparison with other areas in Iran.

However, we cannot deny the great potential of past and current research and discoveries in

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the Paleolithic caves and open-air sites in the Zagros region. They not only represent the unique potential of Paleolithic studies in Iran but also of the prehistoric era in general.

Unlike studies conducted in the Zagros region, Paleolithic research in the central plateau has not ever been goal oriented, except in a few cases [Asgari Khaneghah *et al.* 2005; Berillon *et al.* 2006, 2007; Biglari 2004; Chevrier *et al.* 2006, 2010; Heydari-Guran 2014: 147–156; Heydari-Guran *et al.* 2009; Heydari-Guran *et al.* 2015; Conard *et al.* 2007; Heydari-Guran and Ghasidian 2011; Rezvani and Vahdatinasab 2010). As mentioned above, the known Paleolithic sites were mostly identified or studied as a result of accidental visits and no deliberate Paleolithic research had been planned [Eskandari *et al.* 2010; Malek Shahmirzadi 1994; Mafi and Akhoundi 2009; Mireskandari 1993; Masoumi *et al.* 2010; Kaboli 1999: 64–65; Ganjavi 2000; Rieben 1955; Sharifi 2002; Smith 1986: 20; Vahdatinasab *et al.* 2007, 2009; Vita-Finzi 1968].

An overview of the discoveries of the Paleolithic sites in the central plateau indicates that despite the significance and potential of the area for hunter and gatherer communities, not enough effort has gone into studying and learning about this period as the majority of studies usually has focused on husbandry practices and on later periods.

Taking a quick look at the known sites, it seems that this evidence is mostly scattered on the surface and, like the majority of the open-air sites of Iran, they do not perhaps contain any archaeological deposits.

This results in only a little knowledge being gleaned, limited only to techno-typological analyses of the surface lithics and, therefore, we remain unaware of other aspects of cultural sequences, livelihoods, and the environmental context of the Paleolithic settlements in the Iranian central plateau.

In spite of all the above-mentioned problems, however, Qaleh Kurd Cave, which contains archaeological deposits in the mountainous area of Qazvin, seems to be promising as an important and noteworthy site.

3 Qaleh Kurd Cave

Qaleh Kurd Cave (N: 35° 47' 48.98", E. 48° 51' 23.35") is situated in the rural district of Avaj town in Boeein Zahra county, Qazvin province, at an elevation of 2100 m above sea level. The cave is located 1.5 km from a village with the same name and about 20 km from the tomb-towers of Kharghan (Figs. 1 and 2). Prior to our visit, available information on the cave was limited to caving groups visits, which resulted in the preparation of a detailed topographic map by a foreigner caving group, Neven Bočić and his colleagues, in 2008 during their international speleological expedition to Iran (ISEI).

According to Bočić, the cave dates from the Oligo-Miocene and Tertiary geologic eras. The cave was created by the erosion of the limestone of the Qom formation (from a personal conversation with Neven Bočić).

The cave opening, which is 22.60 m wide, 5.60 m high, and 25.10 m deep, overlooks a very wide valley through which a seasonal river flows. It is about 140 m above the river bed. The cave has only one entrance, which is not much higher than the level of the surrounding terrain (Figs. 3–5). Outside the cave entrance, a wall has been built of medium and large-sized rubble stones without the use of mortar.

Inside the main entrance, there is a tunnel or chamber measuring about 20 m. One has to crouch to pass through it. The chamber floor is covered with big stones, some of which have seemingly been removed from illegal pits.

The first chamber opens to a wider space, in which a deep hole can be seen. After descending from a cavity of about 15 m, the main central chamber, measuring more than 1000 sq m, appears to connect to a number of different chambers. Each one contains multiple stalagmites and stalactites.

Therefore, it seems that cave chambers were never used for settlement purposes as they appear

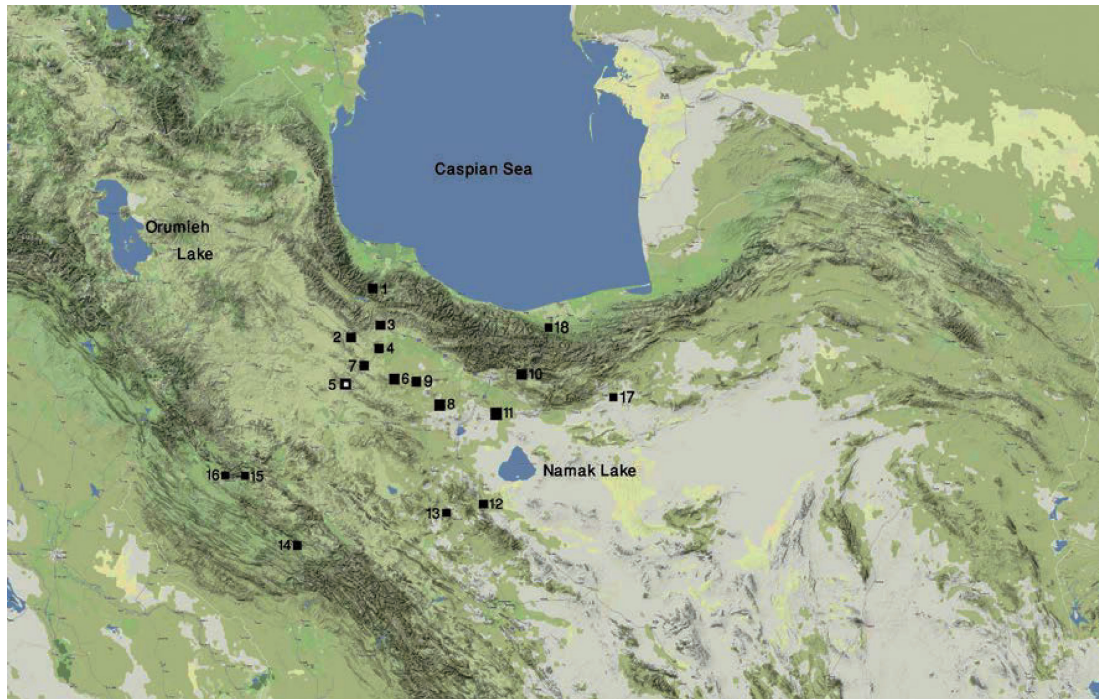


Figure 1: Distribution of some Paleolithic sites in the Iranian central plateau and the Zagros and Alborz mountains: 1. Ganj Par [Biglari *et al.* 2004], 2. Khaleseh [Alibaigi and Khosravi 2009; Alibaigi *et al.* 2010; 2012], 3. Kuhin (Kuhgir) [Mireskandari 1993], 4. Nargeh [Biglari 2003], 5. Qaleh Kurd Cave, 6. Boeein Zahra (Sepid Dasht) [Vahdatinasab *et al.* 2009], 7. Ezhdeha Kouh [Ganjavi 2000], 8. Zavieh [Conard *et al.* 2007], 9. Arasanj [Maesoumi *et al.* 2010], 10. Damavand [Berillon *et al.* 2007], 11. Masile [Malek Shahmirzadi 1994], 12. Kashan (Geleh and Sefid-Ab) [Biglari 2004], 13. Tapeh Mes [Eskandari *et al.* 2010], 14. Kunji Cave [Baumler and Speth 1994], 15. Bisotun Cave [Coon 1957], 16. Warwasi rock shelter [Dibble and Holdaway 1993], 17. Mirak [Rezvani and Vahdatinasab 2010], 18. Garm Roud [Berillon *et al.* 2006]

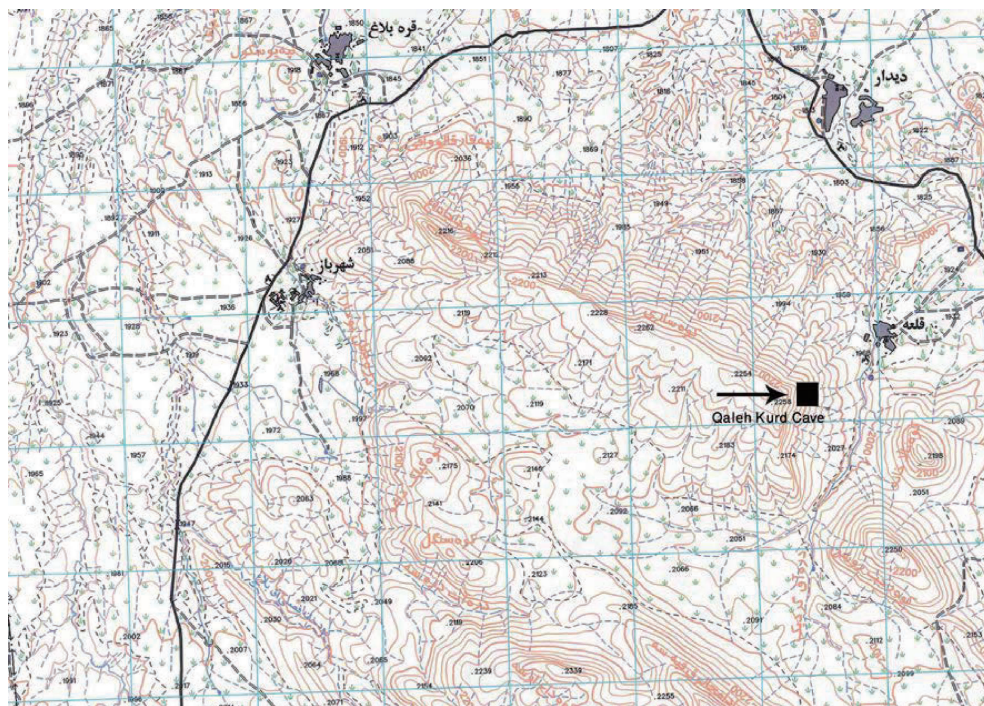


Figure 2: The location of Qaleh Kurd Cave in the southwest of Qazvin province



Figure 3: A view of Qaleh Kurd Cave



Figure 4: The entrance to Qaleh Kurd Cave from the inside

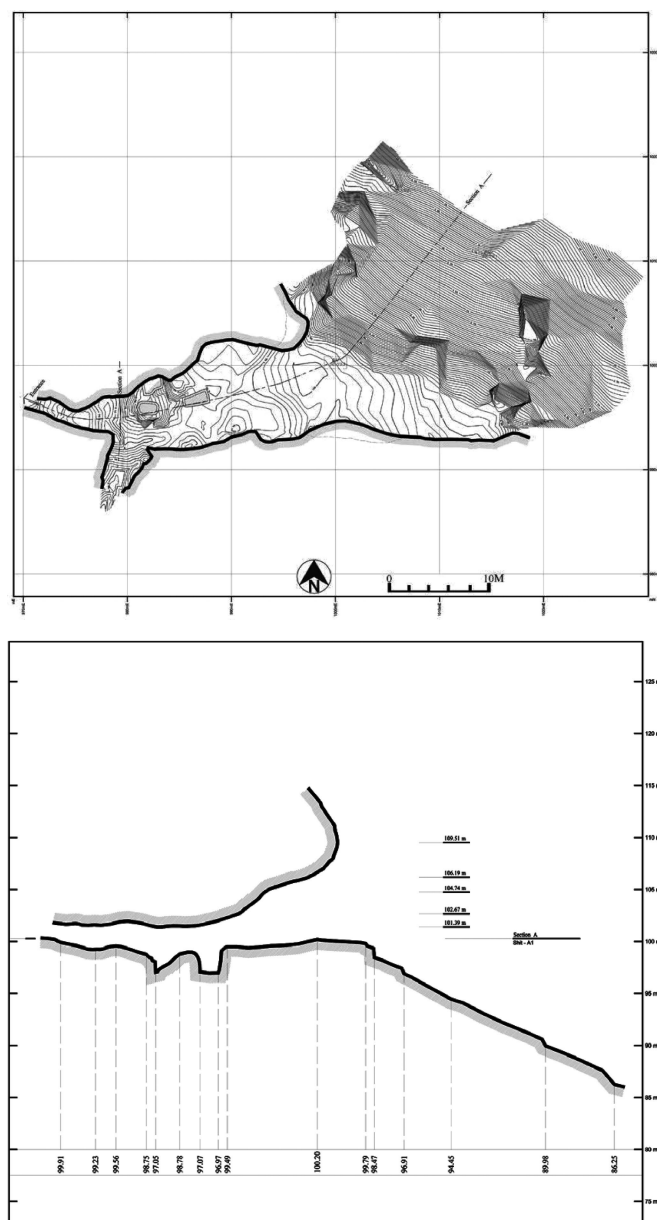


Figure 5: The plan and profile of Qaleh Kurd Cave

not to have been used over time. This, however, could be due to a lack of archeological evidence inside the cave. In order to be sure about the possible presence of human settlement, this chamber was also visited and investigated using caving equipment.

The investigation indicates that only the entrance area of the cave was used in the past and no evidence of human activity in the main chamber was found.

In front of the chamber, there are huge stones that seem to be the result of geologic activities or the destruction and falling away of some parts of the rocky ceiling for unknown reasons. There are many stones of different sizes along the corridor leading to the main chamber of the cave.

The digging of three pits in the first chamber and the cave entrance by looters resulted in archaeological remains and cultural deposits being revealed and accumulating beside the pits (Fig. 6). Inside the pits, grey layers of occupational sediments, and lithics are visible. Prior to the digging of the illegal pits, the floor of the cave's entrance was completely flat and used by local ranchers. Among the sediment we collected were some lithics. The depth of the illegal pits varies from 70 cm to 2 m. However, the main feature of this area is the presence of archaeological deposits of more than 2 m depth.



Figure 6: Illegal excavations at the entrance of the cave and the resulting archaeological deposits

4 Lithic artifacts

Following an exploration of the cave, especially the soil of the illegal pits, a number of lithics and some pieces of Islamic pottery were collected. The destructive activities that occurred made systematic sampling impossible; of course, we took into account that selected sampling might indicate different findings to the lithic assemblage.

However, a small assemblage was randomly collected in front of the opening and the slope of the cave; moreover, selected samples were taken from the deposits and the illegal pits. The collected assemblage contains 35 pieces. In order to produce these, small ranges of raw material were used. The pieces mostly (57.68%) constitute brown, light brown, cream, dark and light green, gray, and light gray cherts of medium and high quality; a lesser percentage (22.85%) is of limestone of medium quality and dark, light gray, and grayish green in color. It seems that hard stones such as andesite were used to produce lithics.

The assemblage contains three Mousterian points (one has some fractures and the other was later reused as a denticulated piece), a broken Levallois point, four single side scrapers, three double side scrapers, one convergent scraper, four simple blades, two Levallois flakes, one retouched flake, seven simple flakes, and nine debitage samples (Figs. 7–9 and Tables 1–3). In addition, two sandstone pebbles with traces of erosion on their surface were also found. It seems that these might have been used as pounders or hammers (Fig. 10). There was no core in the assemblage, but a variety of debitage and debris would indicate that at least a part of the reduction process took place on the site.

On the surface of some lithics, traces of cortex can be seen. Based on this, it can be said that the sources of raw materials were lime rubble stones as well as roundish medium and large cortical nodules of diameters of between 14 cm and 17 cm. However, the nodules have a better flaking quality and might have easily been accessed. The overall dimensions of the product types in the assemblage

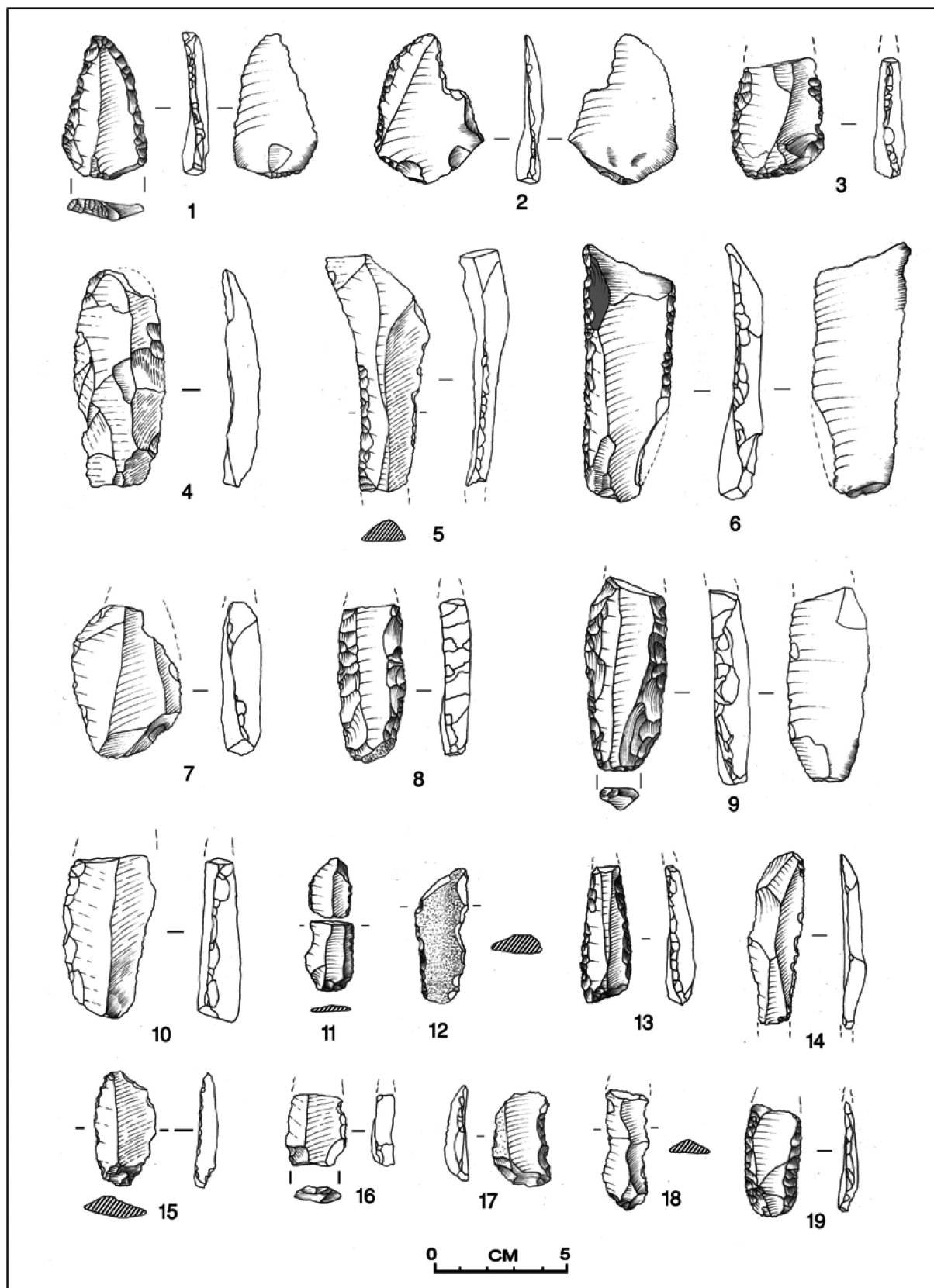


Figure 7: Drawings of some of the lithic artifacts from Qaleh Kurd Cave. For the details of each artifact, see Table 3. Drawing By Ali Imani Zoghi.

Table 1: Raw material types used for the lithic artifacts collected at Qaleh Kurd Cave

Raw Material	Number	Percent
Chert	24	67.6
Limestone	8	22.3
Andsite	2	5.7
Volcanic rock	1	2.9

Table 2: General categories of the lithic artifacts collected at Qaleh Kurd Cave

Type	Number	Percent
Tools	19	51.0
Flakes	7	18.1
Hammer stones	2	5.4
Debitage	9	24.6

Table 3: Catalogue of the lithic artifacts illustrated in Fig. 7

No in Fig. 3	Types	Length (mm)	Width (mm)	Thickness (mm)	Raw material	Color	Quality	Cortex/Percent	Notes
1	Mousterian point	51	25	5	Chert	Brown	Medium	–	Retouched
2	Mousterian point	58	40	8	Chert	Light brown	Medium	–	Retouched (notch)
3	Mousterian point	40	32	10	Chert	Light grey	Medium	–	Broken
4	Flake	82	34	12	Volcanic rock	Reed	Low	20%	–
5	Side scraper	105	3	15	Limestone	Light green	Medium	35%	Retouched
6	Single side scraper	93	32	10	Limestone	Grayish green	Medium	5%	Retouched
7	Flake	58	40	15	Chert	Dark green	Medium	5%	Inversely retouched
8	Double side scraper	55	24	8	Chert	Cream	Medium	3%	Retouched
9	Double side scraper	68	28	11	Chert	Green	Higher	–	Retouched
10	Side scraper	63	33	14	Limestone	Light grey	Medium	–	Retouched
11	Simple blade	50	18	4	Chert	Green	Higher	–	Unretouched
12	Scraper	53	17	4	Chert	Light brown	Medium	48%	Retouched
13	Convergent scraper	47	16	9	Chert	Greyish brown	Medium	–	Retouched
14	Flake	64	18	7	Chert	Greyish brown	Medium	–	Simple
15	Flake	43	23	7	Limestone	Buff	Low	–	Simple
16	Blade?	25	22	7	Chert	Light Green with reddish streaks	Medium	–	Broken/retouched
17	Retouched flake	35	20	7	Chert	Green with reddish streaks	Medium	10%	Retouch
18	Flake	47	15	4	Chert	Brown	Medium	–	Unretouched
19	Double side scrapers	41	20	4	Chert	Greyish brown	Medium	2%	Retouched



Figure 8: Some of the stone tools from Qaleh Kurd Cave, 1-3: side scraper; 4. Mousterian point

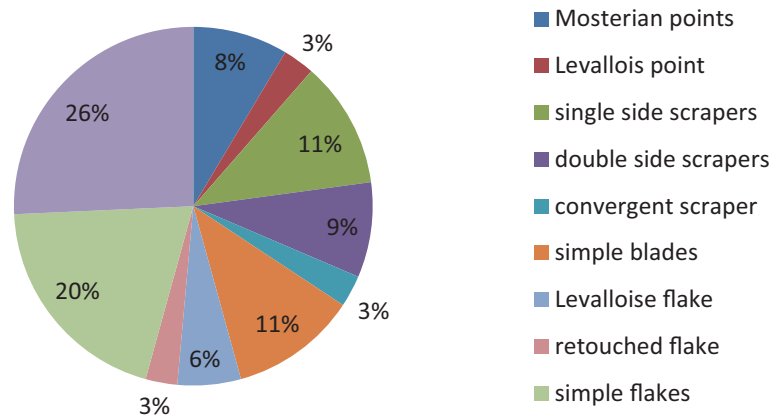


Figure 9: Composition of the lithic assemblage from Qaleh Kurd Cave



Figure 10: Two samples of hammer stones

are medium and in some cases, large. Such a situation could be due to the size and dimensions of the raw materials or even be related to the function of the lithics. A lack of heavy retouching and a smaller percentage of retouched artifacts perhaps indicate easy access to the raw materials.

5 Conclusion

Paleolithic sites in the central plateau of Iran indicate that the majority of attributed documents are surface assemblages which, like most of the open sites of Iran, contain no archaeological deposits. This resulted in our information being limited to a techno-typological analysis of the lithic industries of these sites and we are unaware of other aspects, such as the cultural sequences, livelihoods, or environmental conditions of the Paleolithic settlements in the area.

Therefore, the discovery of the Qaleh Kurd Cave with Middle Paleolithic remains in the mountainous area of the southwestern part of Qazvin province is very important and noteworthy.

The cave displays rather different lithics from some Middle Paleolithic open-air sites, such as Nargeh, Kuhin, Sepid Dasht, and Arasanj, in the western parts of the Iranian central plateau. It appears that Mousterian points and a number of scrapers and simple blades show high similarities to the Zagros caves and rock shelters. This issue might have been due to substantial functional differences between caves and rock shelters and the open-air sites, the settlement dates, the subsistence patterns, and the

different activities that took place on the sites, et cetera.

The important point is the evidence of a Middle Paleolithic settlement in this cave. So far, few sites above 2000 m in the Iranian heights have been reported. The ones that have include Humian 1 in Kud Dasht [Bewely 1984], the open-air sites of Chakhmaghli and Chal Tape near Takht-e Suleiman [Heydari-Guran *et al.* 2009; Heydari and Ghasidian 2004], and the open-air sites of the Kuhrang area in the mountains of Bakhtiari [Roustaei 2010].

1. Despite the large distance between the Qaleh Kurd cave and the Mirak site in northeastern Iran, there are many obvious techno-typological similarities between these two localities.
2. Herbert Wright believes that the permanent snow line during the last glacial maximum (LGM) was 1800 m in the Zagros [Wright 1962]. Therefore, the discovery of shelters with Paleolithic deposits at altitudes above 1800 m is of significance in understanding the landscapes and the subsistence strategy. However, the possibility of using such localities during the interglacial period has to be taken into account.

Further paleo-environmental research and excavations will show how hunter-gatherers occupied elevated places in the Pleistocene (probably the interglacial period), what was the preferred environment, and what was the climate in the region.

The recent evidence from the margins of the central plateau and from the Khorrmadareh Valley [Alibaigi *et al.* 2010, 2012; Biglari 2003; Ganjavi 2000; Mafi and Akhouni 2009; Mireskandari 1993; Sharifi 2002; Vahdatinasab *et al.* 2009], located between the central plateau and northwestern Iran, underline the importance of the area and its frequent occupation as a connecting route at different times from the Paleolithic periods onwards [see Vahdati Nasab *et al.* 2012].

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