

# Anzo: The First Evidence of Paleolithic Cave Sites in the Northern Margin of the Iranian Central Desert, Semnan, Iran

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**Abstract** The archaeological survey of the southern foothills of Alborz Mountains was conducted in search of caves and rock shelters with Palaeolithic remains. The region under investigation in Semnan Province is located in the northwestern margins of Dasht-e Kavir in Iranian Plateau. It was investigated primarily in 1980s and 1990s by Iranian archaeologists. From 2009, The Paleolithic Survey of the Iranian Central Desert Project (PSICDP) was established in order to evaluate the Paleolithic potential of the region, as a result of which Palaeolithic sites were documented and their surface collections were published. The current survey was conducted as a part of PSICDP project in autumn 2017. As a result, 12 caves and rock shelters were recorded, despite the promising condition of which only one had evidence from Palaeolithic Period. Anzo Cave, in northwest of Mehdishahr, was the only cave which yielded few number of chipped stones on the outer slope of the cave. The results of this survey raise the possibility that movement patterns of Palaeolithic hunter-gatherers in the region included seasonal-vertical movements between mountainous area in the north and southern lowlands. Recent discovery of Anzo Cave re-emphasizes the significance of the region as a part of migratory pathways during the Pleistocene.

**Keywords** Paleolithic, Hunter-gatherers, Iranian Central Desert, Pleistocene

## 1. Introduction

Although most of the Paleolithic research in Iranian plateau has been concentrated in the Zagros Mountains (see for example Biglari and Shidrang, 2016; Coon, 1951; Hole and Flannery, 1967; Otte *et al.*, 2007; Shidrang, 2014; Solecki, 1963), recent surveys and excavations conducted by the Iranian-French team suggest that northern edge of the Iranian Central Desert has been a part of one of the several migratory pathways ("corridors") of Pleistocene hunter-gatherers since at least the Middle Paleolithic (see Figure 1; Vahdati Nasab *et al.* 2013). The northwestern margin of Dasht-e Kavir was investigated primarily in 1980s and 1990s (Mehryar and Kabiri 1986; Rezvani 1999). From 2009, The Paleolithic Survey of the Iranian Central Desert Project (PSICDP) was established in order to

evaluate the Paleolithic potential of the region. As a result of the project open air sites including Mirak (MP and UP, Rezvani and Vahdati Nasab 2010; Vahdati Nasab *et al.* 2013), Delazian (UP-EP, Vahdati Nasab *et al.* 2010; Vahdati Nasab and Clark 2014), Soofi-Abad (Vahdati Nasab and Feiz 2014) and Chah-e Jam (Vahdati Nasab and Hashemi 2016) were surface sampled and one of them (Mirak) was undergone three consecutive excavation (2015-2017) by the Iranian-French Paleolithic mission (FIPP).

All of these sites are located in the lowland area which lies between 900 and 1050 masl in the Central Desert. From the Alborz Mountains southwards, the landscape changes from the rocky body of the mountains, through alluvial fans and pediments leading to floodplains and lowlands, ending in sandy and highly saline, barren lands, which are the remnants of ancient playas. Bounded by the Alborz Mountains in the north and the Lut Desert (Dasht-e Lut) in the southeast, the Iranian Central Desert (Dasht-e Kavir) is a large (77,600 km<sup>2</sup>) salt desert situated in the middle of the Iranian Plateau (Figure 2; see Vahdati Nasab *et al.* 2013; Vahdati Nasab and Hashemi 2016).

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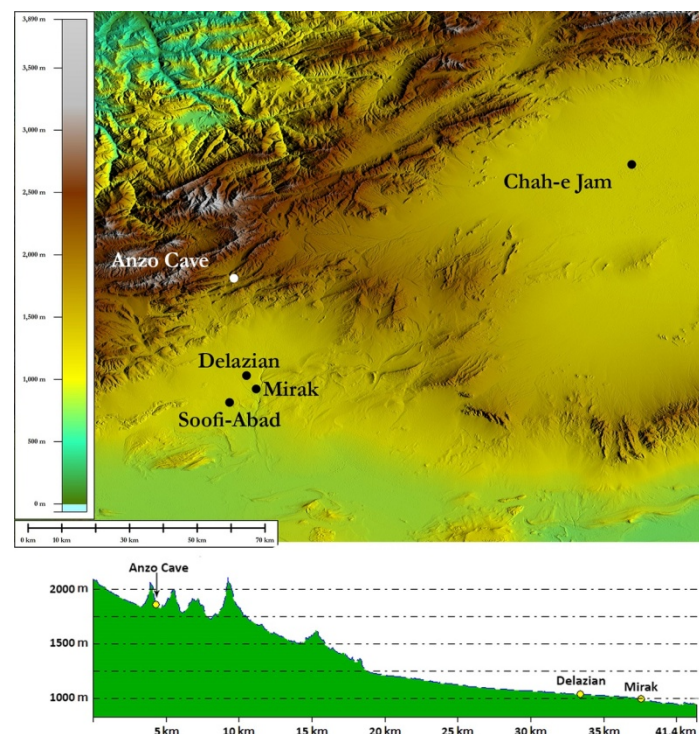
In order to characterize the nature of human exploitation of the region, it was important to investigate the high-altitude regions as well; henceforth, as a part of Iranian-French mission in October 2017, an intensive survey was conducted in the southern foothills of Alborz Range, in Darjazin, Mehdishahr and Shahmirzad districts of Semnan Province in search of Paleolithic caves and rock shelters.

Southern piedmonts of the Alborz are less known

regarding Paleolithic occupations and no Pleistocene cave or rockshelter was documented before such investigation. Northern margin of the Iranian Central Desert joins the southern piedmont of the Alborz with a very steep slope in Semnan and Mehdishahr counties, which are located 15-30 km from open air Paleolithic sites (Figure 2). Within such a short distance the elevation rises from c.1000 masl in the south to c.2500 masl in the north, resulting in an ecologically varied landscape in the region (Figure 3).



**Figure 1.** Migratory pathways on the Iranian Plateau (reproduced from Vahdati Nasab *et al.* 2013)



**Figure 2.** Paleolithic open air sites of northern margin of Iranian Central Desert and location of Anzo Cave





**Figure 3.** Various ecological landscapes in the southern piedmont of the Alborz Range and the northern edge of the Central Desert

## 2. Survey and Results

The focus of the survey was on the junction between the foothills and the valleys or plains which provides the most probable locations of caves and rock shelters. Based on the preliminary reconnaissance from maps and exploring local tracks in vehicle, the mountainous area in northwest and northeast of Mehdishahr County was chosen for a combination of intensive on-foot survey.

As a result, 12 caves and rock shelters were recorded, despite the promising condition of which only one had evidence of Paleolithic occupation. Due to the importance of recording all background information and observations made during the course of the survey, even those caves and rock shelters which failed to yield Paleolithic finds were recorded (Figure 4).



**Figure 4.** Caves and rock shelters recorded in Mehdishahr region which failed to yield Paleolithic finds (1. S1701; 2. Litho Rock Shelters complex (S1708-S1711); 3. S1711; 4. S1708)



Anzo Cave, in the northwest of Mehdishahr, was the only cave which yielded a few number of chipped stones on the outer slope of the cave. The cave is located in the Anzo Valley in the vicinity of a quarry and its facilities which are constructed on the lower slopes of the cave. The entrance of the cave is toward southeast, about 2 m high, and the inner surface of the cave amounts 25 m<sup>2</sup>. A clandestine pit at the

end of the cave reveals c. 2m of deposits (Figure 5). The chipped stones collected from the surface of the slope outside the cave include a bidirectional core, a flake apparently made by levallois technique, a plungeddebitage from unidirectional mixed core, a flake/blade segment and 2 flakes (Figure 6).



**Figure 5.** Anzo cave entrance near the quarry facilities (view from the southeast) and cave plan and section with the location of the clandestine pit



**Figure 6.** Chipped stones from surface collection of Anzo Cave

### 3. Conclusions

Northern margin of the Iranian Central Desert had already been introduced as a part of dispersal corridors of early hominin range extensions from source populations in East Africa (see Vahdati Nasab et al. 2013). The corridor, which is a pass between the southern piedmont of the Alborz Range and the northern edge of the Central Desert, was introduced only by open air sites, but the results of this survey not only reveals the first evidence of cave sites in the region, but also raise the possibility that movement patterns of Paleolithic hunter-gatherers in the region included seasonal movements between mountainous area in the north and southern lowlands. For investigating such a hypothesis further surveys in both areas are required and systematic excavations are planned. The Paleolithic evidence from Anzo Cave, although limited, indicates the extended territory, through which mobile hunter-gatherers of the Paleolithic Period moved, was not limited to the lowlands but included the mountainous region in northern margins of Central Iranian Plateau as well.

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### REFERENCES

- [1] Biglari, F., Shidrang, S., 2016. New Evidence of Paleolithic Occupation in the Western Zagros Foothills: Preliminary Report of Cave and Rockshelter Survey in the Sar Qaleh Plain, West of the Kermanshah Province, Iran. In: Kopanias, K., MacGinnis, J. (Eds.), *The Archaeology of the Kurdistan Region of Iraq and Adjacent Regions*, Archaeopress, Oxford, 29-48.
- [2] Coon, C. S., 1951. *Cave Explorations in Iran 1949*. Museum Monographs, The University Museum, University of Pennsylvania, Philadelphia.
- [3] Hole, F., Flannery, K., 1967. The Prehistory of South-western Iran: a preliminary report. *Proceedings of Prehistory Society* 38, 147-206.
- [4] Mehryar, M. and A. Kabiri. 1986. Preliminary Report on investigating the Ancient Site of Delazian, Cheshmeh Sheikh. *Athar* 12, 13, 14: 3-46 (in Persian).
- [5] Otte, M., Biglari, F., Flas, D., Shidrang, S., Zwyns, N., Mashkour, M., Naderi, R., Mohaseb, A., Hashemi, N., Darvish, J., Radu, V., 2007. The Aurignacian in the Zagros Region: New Research at Yafteh Cave, Lorestan, Iran. *Antiquity* 81, 82-96.
- [6] Rezvani, H. 1999. Prehistoric Settlement Pattern of Semnan. In A. Alizadeh, Y. Majidzadeh and S. Malek Shahmirzadi (eds.), *The Iranian World: Essays on Iranian Art and Archaeology Pres. to Ezat O. Negahban: 7-19*, Tehran: Iran University Press (in Persian).
- [7] Rezvani, H. and H. Vahdati Nasab. 2010. A Major Middle Palaeolithic Open-air Site at Mirak, Semnan Province, Iran. *Antiquity* Vol. 84, Iss. 323, Project Gallery.
- [8] Shidrang, S., 2014. Middle East Middle to Upper Paleolithic Transitional Industries. In: Smith, C. (ed.), *Encyclopedia of Global Archaeology*, Springer-Verlag, New York, 4894-4906.
- [9] Solecki, R.S., 1963. Prehistory in Shanidar Valley, Northern Iraq. *Science* 139, 179-193.
- [10] Vahdati Nasab, H. and G. A. Clark, S. Torkamandi. 2013. Late Pleistocene Dispersal Corridors across the Iranian Plateau: A Case Study from Mirak, a Middle Paleolithic Site on the Northern Edge of the Iranian Central Desert (Dasht-e Kavir). *Quaternary International* 300: 267-281.
- [11] Vahdati Nasab, H. and G. A. Clark. 2014. The Upper Paleolithic of the Iranian Central Desert: The Delazian Site: A Case Study. *Archäologische Mitteilungen aus Iran und Turan* 46: 1-20.
- [12] Vahdati Nasab, H. and Z. Feiz. 2014. A Survey on Palaeolithic Sites on Northern Margin of Central Desert of Iran, between Semnan and Sorkheh Counties. *Proceedings of the 12th Annual Symposium of Iranian Archaeology*: 465-468. Tehran: RICHT publication (in Persian).
- [13] Vahdati Nasab, H. and M. Hashemi. 2016. Playas and Middle Paleolithic settlement of the Iranian Central Desert: The discovery of the Chah-e Jam Middle Paleolithic site. *Quaternary International* 408: 140-152.
- [14] Vahdati Nasab, H.; K. Roustai and H. Rezvani. 2010. Delazian (Mirak 1): Evidence of Paleolithic Settlement at the Northern Edge of the Iranian Central Desert. In P. Matthias; F. Pinnock; L. Nigro and N. Marchetti (eds.), *Proceedings of the 6th International Congress of the Archaeology of the Ancient Near East: 737-742*. Wiesbaden: Harrassowitz Verlag.