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Kuh-i Sukhteh's Shrine in Omidiyeh: A Fire Temple from the Sasanian Period in Southwestern Iran?

Seyed Ebrahim Raiygani¹ , Hossein Sepidnameh² , Mahsa Veisi³ 

Abstract

Kuh-i Sukhteh in Omidiyeh, one of the most important but less-known areas in southwestern Iran, is between Omidiyeh and today's Aghajari. This area was considered a part of the Asak region (one of Arjan environs). Active sources of fire plagued this area in ancient times due to its natural bed, and it was probably a place for the construction of shrines, including the Zoroastrian fire temple. This spatial feature was observed and written about by travelers and authors of the first and middle Islamic centuries. Historical texts refer to this area as a volcano, fire, fire temple, and fire altar. This research aims to compare the material presented by historical texts with archaeological data to locate the Asak fire temple. Conducting this research is necessary to complete the puzzle of the communication route between Ramhormoz and Arjan and identify the architectural structures related to the settlement and possible Zoroastrian shrines in this route. This research tries to answer this question: What is the connection between the Kuh-i Sukhteh area and Zoroastrian religious buildings in the Sasanian and the first Islamic centuries? Conclusion: Based on information from the historical and geographical texts of the first to middle Islamic centuries and archaeological data, including pottery and architectural remains, the Kuh-i Sukhteh in Omidiyeh is an adaptable place for the ancient fire temple of Asak. However, archaeological excavations seem necessary to document more architectural structures. The present study's data result from authors' survey studies and citation studies, and we have concluded by historical, descriptive analysis.

Keywords: Kuh-i Sukhteh; Asak; Fire Temple.

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Introduction

Much research has been conducted on the Sasanian period from an archaeological, historical, and artistic perspective (see Rahbar, 2023; Rahbar, 2024; Hozhabri *et al.*, 2025; Hozhabri *et al.*, 2024; Iravanian, 2024; MehribanXosbext, 2024; Shahsavari *et al.*, 2025; Tajrishy, 2025; Hozhabri *et al.*, 2025; Nemati *et al.*, 2025; Mohammadifar, and Gholami, 2025; Farjami, 2024a; 2024b). The use of natural substrates for rituals in the cultural geography of Iran has a rich history. This harmony with nature has become more evident in ancient times, especially in the Sasanian era. The construction of shrines and palaces around springs, wetlands, and natural lakes is among the notable manifestations in the religious and royal architecture of the Sasanian era (Javadi, 2015: 37-45; Minorsky, 1938: 621- 652). Construction of buildings in line with the circulation of water, such as the Anahita temple in Bishapour (Saadi-nejad, 2019: 50), Firoozabad Palace in Fars (Huff, 1974: 160), and the Takht-i-Soliman complex (Naumann, 1977: 42-43; Huff, 2004: 462), is among the notable examples. Given the significant impact of Anahita's influence on the rise of the Sasanians (Overlaet, 2013: 325), the creation of such a complex of religious and non-religious buildings along with flowing or still waters was not unexpected.

On the other hand, the fire was one of Zoroastrianism's sacred elements as the Sasanian Empire's official religion (Boyce, 2001: 63-64). In his book, Isidore Kharaksi mentions the Everlasting Fire and the associated oil springs in the Austocene region when referring to the Parthian acceptance of Zoroastrianism (Schoff, 1914: 31). This was a quote from Pliny. We

do not know much about religious or non-religious buildings near the natural substrates of fire in the Sasanian political and cultural geography. However, some historical and geographical texts of the first and middle Islamic centuries have provided limited information about such contexts in southwestern Iran. In the present study, we try to identify and analyze the use of one of these natural substrates in the southeast of Khuzestan - between the cities of Omidiyah and Aghajari - (Fig. 1). This study aims to pursue the use of natural substrate by Zoroastrians to build a fire temple. This article tries to answer this question: What is the connection between the Kuh-i Sukhteh area and Zoroastrian religious buildings in the Sasanian era and the first Islamic centuries?

Literature Review

In 1935, Stein succeeded in examining and speculating in parts of Behbahan's historical monuments, but he was unaware of Kuh-i Sukhteh (Stien, 1940). In 1948, McCawon explored the Ramhormoz, Hindijan, and Behbahan areas by car (Alizadeh, 1990: 35-34). Then in 1971, Nissen and Redman surveyed the Behbahan plain and surrounding regions (Nissen and Redman, 1971). Dittman also observed the Behbahan area (Dittman, 1984). None of these people mentioned the Kuh-i Sukhteh of Omidiyah. Moghaddam and Miri studied the eastern corridor in the Khuzestan region, which stretched from the Shushtar region to Behbahan. Cole and Gasche have studied historical texts and archaeological evidence of rivers in southern Khuzestan. They have succeeded in locating some sites,

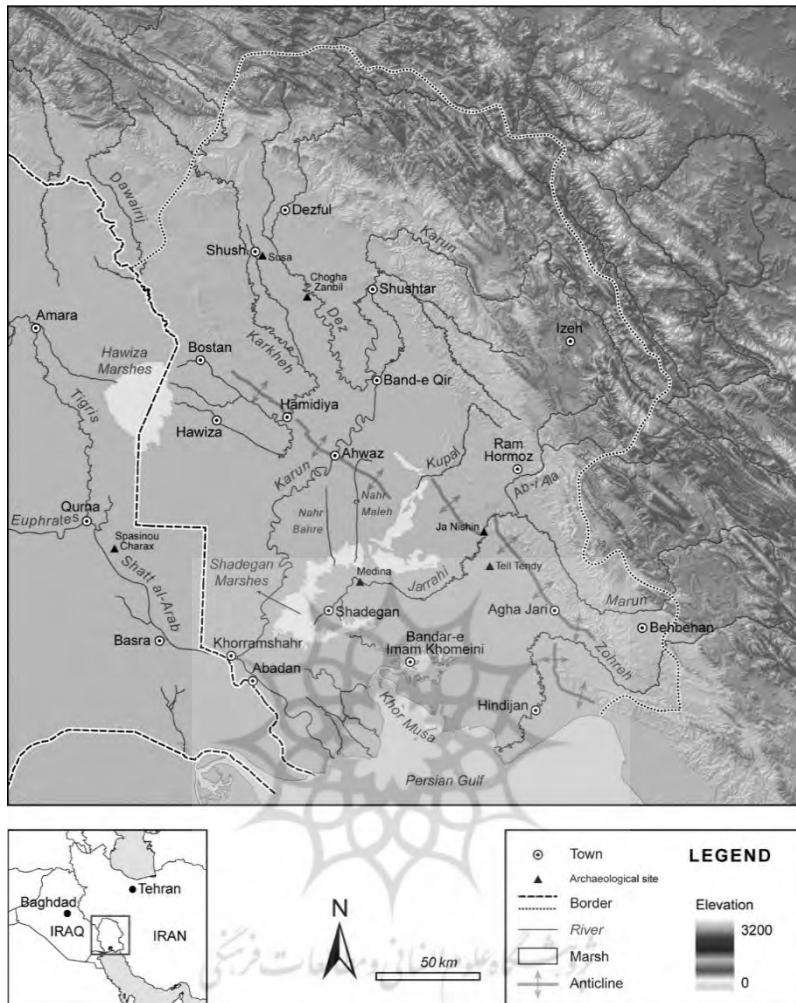


Fig. 1. Location of the Khuzestan Plain (Heyvaert et al., 2013: 494).

but their studies show no trace of Kuh-i Sukteh of Omidiyeh (Cole and Gasche, 2007). Recent studies by Azadi (Azadi *et al.*, 2018) and others do not help solve our research's fundamental problem. Surveys of Alizadeh *et al.*, in the Ramhormoz area, except for showing the pottery sequence of the site from Proto-Elamite to Safavid period (Alizadeh *et al.*, 2005-2009), did not provide any information about the adjacent area, namely Kuh-i Sukteh. In

the present study, we have examined the accuracy of documents and information obtained from historical texts about a fire-related structure and possibly Sasanian with the help of archaeological survey studies, and we expected that, at least in Klaus Shipman's works (1971: 261-265), we would find information about this area. Shipman tried hard to find out the truth of the data provided in the historical texts about an essential

building in Hindijan and Asak but never succeeded. Therefore, with such a small research background, the present study has investigated the issue and solved the resulting problem.

Examining the Evidence of *Kuh-i Sukhteh* in Historical Texts

Historical and geographical texts of the first and middle Islamic centuries are essential sources in recognizing some of the relatively unknown historical artifacts from pre-Sasanian times. Areas related to Arjan and Ramhormoz's furnaces in southwestern Iran were among the areas considered by the authors. Natural phenomena are also a significant manifestation of the concept of "wonders" in these texts. These wonders include volcanoes, natural gas fires, and some of the Earth's pores where toxic gases escape. Abu Dulaf, in his travelogue in 341 AH, acknowledged that he moved from Ramhormoz to Arjan and reached Arjan through Duragh, Asak, and Hindijan (Gaube, 1973: 58). The text of Abu Dulaf's travelogue is the first historical source in identifying fires (including volcanoes, fires caused by natural gas ignition and fire temples) on the way from Ramhormoz to Arjan. He wrote: ... From there I went to the Ramhormoz, and it is a magnificent city located on the road to Duragh. There are fire temples on this road that passes through the barren desert (Minorsky, 1975: 89). He further mentions that Duragh has yellow sulfur. He continues, Asak is a city and several villages connected to Duragh. There is a high and beautiful porch. It is in the middle of the desert and on top of a wet and polluted spring. In front of this porch, there is a high dome. This dome is

one hundred cubits high and was built by Shah Kavad, the father of Anoushirvan. On the west door of this dome, I see an inscription in the Pahlavi language. Between Asak and Arjan is a village called Hindijan; in this village, there are strange monuments and buildings related to the Ād era ... and there are also numerous fire temples (Minorsky, 1975: 90-91).

Massoudi (d. 345 or 346 AH) has stated in this regard, Asak volcano in Hindijan province- between Fars and Ahvaz- which can be seen at night from a distance of more than forty parasangs, is the most famous because many travelers go through it (Al Masoudi, 2010: 59). Minorsky analyzed the words of Abu Dulaf and compared the material of Istakhri (d. 346 AH), which says: On top of a mountain near Asak, the fire is unquenchable; the ignition of underground oil causes this fire (Istakhri, 1927: 92) with the material of Al Masoudi. Minorsky has finally concluded that what Istakhri saw on the Asak mount does not correspond to Al Masoudi's writings (Minorsky, 1975: 146). After Al Masoudi, Ibn Hawqal (d. 367 AH), in *Surat al-Ard* mentions the fire on the mountains near Asak, whose light and smoke could be seen from afar day and night (Ibn Hawqal, 1938: Vol. 2/255). The unknown author of *Ḥudūd al-Ālam* wrote in 373 AH: Asak is a village on a mountain. On top of that mountain, it is a fire that has always shone day and night, and the war of the Arzaqians took place there in ancient times (Ḥudūd al-Ālam 2002: 149). Al Maqdisi (d. 380 AH) has also stated, "There is a fire around the" Argan "that is bright at night and has smoke during the day" (Al Maqdisi, 1982: Vol. 2/ 660). Later, geographers and historians

who have written about this brilliant fire repeat the sayings of Abu Dulaf, Istakhri, Al Masoudi, Ibn Hawqal, *Hudūd al-Ālam*, and Al Maqdisi. For example, when Yaqt Al Hamavi mentions the fire of Asak mount and the fire temples of Hindijan, quoting Abu Dulaf, he does not know the exact location of each of the items (whether it is a natural fire or a fire temple). He described this information as follows: Duragh is a city in Khuzestan, which is the village of Khore Sarragh, and it is also called Duragh Al-Fors. Masar, Ibn Muhalhil, says in his travelogue: As we go from Ramhormoz to Duragh, we pass several fire temples, which are surrounded by amazing buildings and various mines. In Duragh, there are antiquities of Kavad, the son of Dara, and there are hunting grounds, but people avoid going there. There is yellow sulfur whose springs flow during the night, and this sulfur is not found anywhere else, and if they take it elsewhere, it will not shine. If they bring fire from outside to Duragh, it will burn all the matches. But the Duragh's fire does not burn this sulfur, which is terrific. The reason for this is not yet known (Al Hamavi, 1995: Vol. 2/483). He had previously quoted Abu Dulaf as saying: Asak is a city in the parts of Ahvaz near Arjan and Ramhormoz. It takes two days to get to Arjan from there. It takes two days to get away Duragh. Asak is a city full of water and groves (Reza et. al., 1971: 11). In the Asak desert, there is a tall porch next to a roaring spring and next to the porch, there is a large dome that is more than a hundred cubits high. Kavad, the father of Anoushirvan, built it. Outside the Asak is a cemetery of the Muslims killed on the way to conquest. The place of the curtains can still be

seen on this dome (Al Hamavi, 1995: Vol. 1/53). He also mentions: Asak ... which is a place between Ramhormoz and Arjan (Al Hamavi, 1995: Vol. 1/53). The content of Islamic geographers and historians, including Abu Dulaf and Yaqt, seems to contain three sections; the first part is the topic of fire and fire temple between Ramhormoz and Arjan. The second part is a building with a high dome above it, and the third section is the cemetery of the Muslim conquerors. First, we will deal with the first part of this material, fire and fire temple, and then, we will examine and analyze the subject of the building and its high dome and finally, the cemetery of the victors.

Yaqt's use of the phrase "Masar, Ibn Muhalhil, says in his travelogue" indicates the unconditional use of Abu Dulaf's contents. The term "Asak ... which is somewhere between Ramhormoz and Arjan" also suggests that Yaqt only knows that Asak and the glowing fire on the mountain are in the distance between Ramhormoz and Arjan. But he does not know its exact location and how to access it. Therefore, all the writings after the original authors are references to them, and few authors have visited the route between Ramhormoz and Arjan. These impressions appear in other authors' books before and after Yaqt. Muhammad Al Idrisi says about this fire: "Near Asak in the direction of Fars is Azarvan Mountain. It is a volcano that fires at night, and smoke comes out during the day, and that fire never goes out. This mountain is like a volcanic mountain on Saqliya Island (Sicily)" (Al Idrisi, 2009: 41). Hamedani has stated in *Ajāebnāmeh*: "There is a mountain in Jabal Asak that the fire shines. It is smoky

during the day and fiery at night, and it is like an ignited oil well" (Hamedani, 1996: 367). Damascene Ansari repeated the writings of previous authors and wrote: "On the outskirts of Mahir, there is a village called Asak, and there is a fire temple where its fire can be seen at night from twenty miles away" (Damascene Ansari, 2003: 279). In the eighth century, Ibn Abdolhagh Baghadi (1991, Vol. 1/4) also mentioned the houses of fire (fire temples) in Asak.

In the great content of the Damascene Ansari, "there is a fireplace that ...", and Ibn Abdolhagh Baghadi, who mentioned that the houses of fire or fire temples are very remarkable and essential in the foundations' terminology of Zoroastrian religious architecture. Imam Shoushtari, in his book *Geographical History of Khuzestan*, quotes Istakhri about the flames over the mountains near Asak in Arjan Province, and then he wrote his observations as follows: "... It can be said that there were holes in the oil mines in this place, which were constantly rising and igniting. Then stopped by an earthquake. People say that Masjid Suleiman was a fire temple in ancient times and was constantly burned by gas. It is similar to a fire temple in the Badkubah in the Caucasus" (Imam Shoushtari, 1973: 30).

It is necessary to explain what Imam Shoushtari has said about the Badkubeh in the Caucasus. Al Qazvini has expressed it below the Aran region as follows: "... And one of the wonders of Aran Province is that in the city of Badkubah, there is a fire temple with some chambers. Badkubah is located next to the Caspian Sea. There are ponds and fountains in the fire temple, and instead of water, fire comes from the

fountains. The fire worshippers are in the chambers and lit the fire without burning coals and charcoal. They cook their own food. They say that because there is so much oil on the ground, the oil well is nearby. The vapors that emanate from the Earth have oils. If the fire reaches these vapors, it will ignite and to extinguish the fire. They put a wet cloth on the place the fire comes out. Near the city of Badkubah, there is an oil mine, and they have dug wells and built ponds next to the wells" (Al Qazvini, 1994: 571). While mentioning the wonders of the land of Duragh, which was one of the settlements between Ahvaz and Arjan, he wrote: "is a village in Khuzestan. Masar, Ibn Muhalhil says that there are many mines in the areas of that city, and it has ancient works that Kavad, the son of Darab, built them. There is a lot of fishing in that province. There is a match there that does not burn in the Duragh's fire. And this match is lit somewhere other than the Duragh" (Al Qazvini, 1994: 251). Al Qazvini also mentioned the fire temples of Hindijan, quoting Abu Dulaf: "Hindijan is the countryside of Khuzestan. The Magus keep the sanctity there, and they have built fire temples there" (Al Qazvini, 1994: 338).

The challenging subject in these geographical and historical sources is: finding the places of Asak and Duragh and a place on the way from Ramhormoz to Arjan. Abu Dulaf stated, "This road passes through the barren desert ...". Al Masoudi has said: "It is between Fars and Ahvaz," and also, "It can be seen at night from a distance of forty parasangs because a lot of passengers pass through it." These phrases express a few points:

- 1) Place the fire on top of the mountain;
- 2) That mountain is between the two cities of Ramhormoz and Arjan;

- 3) That road passes through a barren desert;
- 4) The fire was visible from a distance (about forty parasangs, i.e., over 200 km);
- 5) Many travelers crossed that road, which means the usual transportation route.

Therefore, geographical and historical texts of the first to middle Islamic centuries about the fire (natural or artificial) between Ramhormoz and Arjan do not specify the exact location. They only indicate that this place is located on the highway from Khuzestan to Fars, and travelers could see it from a distance. Several routes can probably be recovered regarding the communication route between Fars and Khuzestan. Ibn Khordadbeh (d. 300 AH) has written in mentioning the places between Ahvaz and Fars: "... from Ahvaz to Azm is six parasangs, and from there to Abdin is five parasangs, then to Ramhormoz is six parasangs, and from there to Zat is six parasangs. It is followed by a difficult passage and a high bridge in the salt desert. So, it is eight parasangs to the Dehlizan and from there to Arjan is eight parasangs" (Ibn Khordadbeh, 1992: 36).

Ibn Khordadbeh did not mention Asak and Duragh in the middle of the road from Ahvaz to Arjan. However, he said the salt desert, which Abu Dulaf had previously referred to as the barren desert.

We cannot interpret this incoherence correctly. But Al Maqdisi and Istakhri have mentioned the change of the names Dehlizan and Zat. Ibn Hawqal dealt with the highway between Persia and Iraq (Baghdad, Wasit, and Basra) and stated, "The second stop on this road, which starts from Arjan, is Asak and then goes

to Deir and from there to Duragh" (Ibn Hawqal, 1938: Vol. 2/258). Hindijan in the east. Ibn Balkhi has written about the roads between Ahvaz and Arjan: "One of these roads was by ship and went to Mehruban" (Ibn Al Balkhi, 2006: 150). Another way that Al Masoudi and Abu Dulaf have mentioned is by land. This road was divided into two branches, one from Ramhormoz to Arjan (Minorsky, 1975: 89), and the second branch of this road continued along the Tab River, Rishahr, Hindijan, and Asak to Arjan (Al Masoudi, 2010: 59). Thus, due to the fire's location on top of the mountain, it is obvious that whenever a traveler walked the land route between Ramhormoz and Arjan, he should have seen this fire. The fire and its location were not necessarily close to the communication road. Le Strange (1905: 244) also quoted this story from Istakhri and called it a small volcano.

Based on information from historical texts, contemporary professional and amateur authors found the location of a volcano or a burning fire (natural and artificial) in the middle of the road from Ahvaz to Fars (Arjan); each presented theories based on local knowledge and survey studies.

Hosseini Fasaei stated that: "On the west side of Behbahan, at the end of the Zaydun area, on a high hill, there is a tomb and a dome, which is called Zahid Sukteh. There are several cracks in the ground near the dome. Always the smoke that smells of sulfur comes out of these cracks and gives light at night" (Hosseini Fasaei, 2003: vol. 2/1469). Eghtedari has written similar to the contents mentioned in Farsnameh of Naseri: He has observed the remains of the ancient Asak -that is, the place of smoke and burning fire

in the mountains- in the position of Zehbod, zohd or Zahid Sukhteh in the hills of Gargari Gholeh, in Zidan region (southwest of Behbahan) (Eghetedari, 1996: 663). According to information from historical texts and the description of Stocquelet's journey (Stocquelet, 1832: vol. 1/84), Gaube knows the location of Asak in the north of Mashour port (Mahshahr) (Gaube, 1973: 58).

Namjoo has seen the name of Asak Fire Temple in the texts during research on four-arched buildings in Iran and has not provided information about its exact location (Namjoo, 2013: 247).

In addition to examining historical texts from the first to the middle Islamic centuries, Klaus Schippmann's material is remarkable because he refers to their exploratory activities and maps. Shipman has not taken field studies in these areas seriously, and what he is saying is only through citation studies. The results of his research in historical texts indicate the existence of fire temples between Arjan and Ramhormoz or in the area of Asak and Duragh, but there are no traces of them today (Schippmann, 1971: 261-266).

The second contents part of the first to the middle Islamic centuries geographers and historians mentions a porch, dome, or a high mansion on top of a mountain near Asak. In the following, we will examine this issue from the perspective of the contents of historical texts.

The first reference in this regard is by Abu Dulaf. He states: "In Asak, there is a tall and beautiful porch. This porch is in the middle of the desert and on top of a spring. In front of this porch, there is a dome. Its height is one hundred cubits

and was built by Anushirvan's father Shah Kavad" (Minorsky, 1975: 90-91). Abu Dulaf's chronological information cannot be considered a reliable base. However, this information is the oldest source of information about this monument.

Nearly two centuries after Abu Dulaf, Al Hamavi also discussed arches, domes, and porches: "In the desert, there is a high porch next to roaring springs. Next to the porch, there is a large dome with a diameter of more than one hundred cubits. Kavad, the father of Anoushirvan, built it. The place of the curtains can still be seen on this dome" (Al Hamavi, 1995: vol. 1/53).

Al Hamavi's contents are remarkably similar to those of Abu Dulaf. Earlier, Yaqt had explicitly mentioned Abu Dulaf's treatise as his reference. Thus, Yaqt never traveled to these areas and merely recounted what Abu Dulaf had previously quoted.

Based on these historical texts (Abu Dulaf and Yaqt Al Hamavi), Le Strange states: "Near Asak, Sasanian relics can be seen, which is a porch one hundred cubits high Kavad built that - the Sasanian king - over a spring" (Le Strange, 1905: 244). Interestingly, he wrote that "works from the Sasanian period can be seen," indicating that he probably observed these works. However, he did not provide any explanation about these works.

Efforts by contemporary local authors to adapt the contents of historical texts, including finding the exact location of the Asak's fire (both natural and artificial) and dome or high porch, have often been accompanied by nationalist dogmas. These authors have less archaeological work as genuine evidence supporting their analysis. The book *The Face of*

Asak and Omidiyeh is one such local historiographical activity. The book's author considers some of the hill's signs of the same tall building mentioned by Abu Dulaf and Yaqut's writings. These hills are Hills in the village of Gargari Sofla called Tal Milk, which is similar to the mountains of Asyab village, full of Parthian to Sasanian pottery pieces. There are other ancient hills between Gargari Sofla and Qalandari village (White Hills). Here, too, we see the foundations of old buildings, and it is full of pottery pieces (Personal conversations with Abbas Hayati, the book's authors).

The alignment of historical sources regarding the Sasanian porches and domes in Asak and the presence of fire next to these structures increases the need for archaeological research. In the following, to confirm or refute this information from historical texts, we will examine the archaeological evidence. But before that, we must reflect on the third part of the spatial data taken from historical texts, which is a cemetery from the Islamic conquests, because the existence of an Islamic cemetery, which usually has an archeological appearance, can help locate the fire or fire temple of Asak.

Numerous historical sources refer to the Khawarij and the Umayyad dynasty's battles in Asak. They have briefly dealt with the cemetery related to this event or the Islamic conquests in Asak. *Hudūd al-Ālam* (2002: 149), *Surat al-Ard* (Ibn Hawqal, 1938: 255), *Masalak al-Mamalak* (Istakhri, 1927: 92-94), and finally the Dictionary of Countries (Al Hamvi, 1995: 1/53) are the essential sources about the battles and tombs of the Khawarij and the conquering Muslims in the Asak. Since the references only mention

this cemetery in the Asak region, we use them as a sign for a more accurate location of Sasanian-era buildings in this research. Most historical texts deal with the proximity of this cemetery to other structures, including the porch and the high dome.

On the other hand, we will note that most of the authors of these texts have not traveled to Asak. They have just written what they have heard. But this issue does not disrupt the existence of the cemetery. But its proximity to the high porch and dome (which, according to these texts, belongs to the Sasanian king Kavad) is doubtful. Al Hamavi mentions the construction of a high dome in the desert. His source in this regard is Abu Dulaf. He wrote that outside the dome and porch is a cemetery of Muslims who died during the conquests. Other sources vaguely mention the Islamic-era cemetery with a Sasanian dome and porch. However, noting the distance between the porch, dome, and the cemetery is a subject none of the texts has addressed. Etemad-Al-Saltaneh (d. 1313 AH) dealt with this issue during the Qajar period and wrote that around the dome and porch were the tombs of several Muslims killed during the conquest of this city (Etemad-Al-Saltaneh, 1988: vol. 1/16). This statement did not specify the location of the cemetery and the construction of the dome. Etemad-Al-Saltaneh did not travel to these areas, so we cannot trust this writing. Therefore, this issue needs archaeological studies to eliminate the contradictions of historical texts and benefit from the mentioned information.

The results of the study of historical texts about the region between Arjan and Ahvaz, the evidence of the fire, the

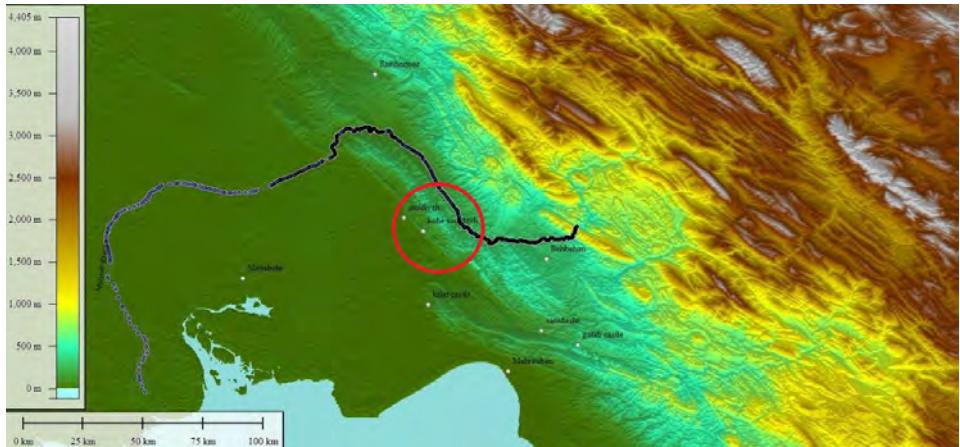


Fig. 2. Location of the Kuh-i Sukhteh Area in Southwestern Iran

fire temple, the high buildings, and the cemetery can be presented as follows:

The sacred fire, temple, and volcano were not necessarily near Asak or in Asak because the texts refer to firelight at night and fire smoke during the day. Abu Delf (Minorsky, 1975: 90) also mentioned the buildings related to Asak in the distance between Duragh and Hindjan. Therefore, when a historical source provides information about the location of a fire or fire temple or even a volcano, we should not immediately look at its original location (i.e., Asak). Instead, the author probably refers to the path he took and later wrote a summary of his observations. This building probably belonged to pre-Islamic times and was considered by Muslim authors in Islamic times due to the region's importance.

The Islamic cemetery cannot be located near pre-Islamic buildings and must be away from them. We will find additional information about this in the second part of the article, i.e., archaeological studies for the location of Asak fire temples. Therefore, the place that we can call ancient Asak (probably

areas of the modern cities of Hindjan and Omidiyeh) must also confirm the contents of historical texts based on archaeological evidence. Thus, we have to look for relatively deserted areas with a natural ridge, traces of fire (both natural and artificial), tall buildings such as domes and porches, and a cemetery next to or at a distance from these constructions remains. Due to the vastness of the salt marshes and barren deserts, finding such a place with unique features in the ancient cities of Arjan and Ahvaz seems complicated. Since new settlements are usually erected next to or on top of ancient settlements, discovering external representations of what is mentioned in the historical texts requires a continuous archaeological survey. We used the selective study and proximity of new territories to ancient settlements as our guiding principles to reach a place called Kuh-i Sukhteh between Behbahan (Arjan) and Ramhormoz. In the following, we will examine the archaeological evidence and also compare this evidence with the historical texts' information.



Fig. 3. General View of the Kuh-i Sukhteh to the Zidon Plain and the Mahuri Hill Area

Archaeological Evidence and Data

One of the most important areas between ancient Arjan (almost modern-day Behbahan) and Ahvaz is Kuh-i Sukhteh. This area is a collection of works. These works are located at a distance of 1300 meters northeast of Khait Obaid village, on the heights of Mahouri hill in Gachsaran formation and in the dimension between Behbahan intersection and Sardasht city to Omidiyah (Fig. 2¹).

On the heights of this mountain, due to landslides or earthquakes, deep and wide-open cracks and numerous other small openings have formed, which today emit yellow sulfur crystals and the smell of hydrogen sulfide gas. The mountain formations include Gachsaran and Marni Mishan Formations, which have burned and cooked for a long time around the original gas outlet. The placement of signs of architectural structures at a height led us to consider the term castle for these structures. We note that the location of the buildings on the precipice justifies this naming (Fig. 3).

The reason for naming this area as Kuh-i Sukhteh is due to the presence of gas cavities. From this gas, smoke is still emitted, and in the past its fire was open. It is not clear exactly when this fire was

extinguished. However, burnt and heated gypsum and stones in a significant part of the area indicate the durability of fire for several centuries (Fig. 4).

Evidence of burns, or at least natural fire (cited in most historical texts), puts the Kuh-i Sukhteh at the top of the list of suggested sites. The location of the fire on a hill and the surrounding barren deserts drew our attention to the Kuh-i Sukhteh. Other areas between Behbahan and Ahvaz did not have this feature. There is a similar example of such a natural phenomenon on the road from Ramhormoz to the village of Mamatin, which is called Tashkuh. However, the remoteness of this area from the main known roads and the lack of architectural structures related to the contents of historical texts (dome and porch), removed this area from the list of places under study. So, the only candidate under consideration is the same Kuh-i Sukhteh of Omidiyah.

One of the problems that challenges the adaptation and location of Kuh-i Sukhteh of Omidiyah with the fire temples is the distance between the settlement of Asak and the Kuh-i Sukhteh. Historical texts (including Al Masoudi) referred to the signs of smoke and light of fire from forty miles. This issue indicates the relatively long distance of the fire from the road's location and the Asak's settlement. But Abu Dulaf's statement

¹ Kuh-i Sukhteh is located in the geographical coordinates of 39°R 0383079, UTM 3397147 and 126 meters above sea level.



Fig. 4. General View of the Kuh-i Sukhteh; View from the South

that: Asak is a city and several villages connected to Duragh (Minorsky, 1975: 90) allows us to consider about 100 km to study archaeological evidence.

Remains of an Architecture Site

In the survey study of the Kuh-i Sukhteh area of Omidiyeh, several works of architectural structures were identified, which we will try to compare with the contents of historical texts and adapt them in some cases. The numbering of works does not have the same and accurate basis and depends on the level of access and distance from each other.

1. A relatively square structure; a mass of irregular gypsum, limestone, and pieces of brick at a distance of about five meters east of the site with dimensions of 4 by 5 meters (20 square meters) (Fig. 5).

2. Remains of three rooms in the east-west direction, seven meters long and 3-5 meters wide, with bricks and plaster, in the northeast corner of which the remains of a tower are somewhat visible (Fig. 5).

3. On the surface of the northern ridge of the Kuh-i Sukhteh, 12 meters long and 4 meters wide, as a result of unauthorized excavations, there is a five-centimeter layer of heated red gypsum mortar with a smooth surface. Beneath this layer is a

very thin layer of stone (Fig. 5). There is no evidence that these flat plates have a wall around them. These plates appear to have been used to seat people in front of a fire.

4. A small circular structure about two meters in diameter (Fig. 5).

5. The other case is a relatively square building of irregular limestone with gypsum mortar. It is 8×9 meters long. This building is located 80 meters east of the Kuh-i Sukhteh, on a precipice.

The architectural structures indicate a relatively scattered ritual dwelling with a small number of people, but for a relatively long time. The small scattering of pottery from the historical and Islamic periods shows that this place was used at least from the Sasanian period to the Seljuk period (Fig. 6 and Table 1). These structures and pottery are the first signs of tracing the contents of historical texts.

Since the architectural structures of the Kuh-i Sokhteh site have been severely damaged, a few pottery pieces from this site are scattered on the surface of the hill. A notable point about the pottery found in this site is that these pottery fragments are comparable to samples found in another neighboring site called Araboon Castle (Fig. 7 & 8). In the site of Araboon



Fig. 5. Location of Architectural Remains on Top of the Kuh-i Sukteh; View from the East



Fig. 6. Design of Castle Pottery, Kuh-i Sukteh, Shrine of Omidiyah

Castle, the pottery also shows a continuity from the Sassanid to the Islamic era. This contemporaneity and relative proximity indicate the importance of the region during the Sasanian period, as well as the transition from Sasanian times to the Islamic era.

In comparing the architectural evidence of the Kuh-i Sukteh with the information from the texts on fire or fire temple, which some writers have referred to as *Beaut Nar*, there is almost

only one place on the mentioned route between Arjan and Ahvaz. This place is on a hill overlooking the barren desert (mentioned by Abu Dulaf). Structure No. 2 and Structure No. 1 are among the most important candidates for the works in the texts, with a high porch and dome. The remains of these structures indicate a collection of works that can be considered the focal point of a Zoroastrian fire temple.

Structure No. 5 is considered a place for the construction of the dome of the

Table 1. Catalog of Shrine Pottery

No	Piece Type, Clay Color, Outer Coating, Inner Coating, Mixture, Baking, Construction Type, Decoration	Period	Source of Comparison
1	Rim, orange clay, without canopy, fine sand mixture, sufficient baking, handmade, shallow excised decoration	Sasanian	Alizadeh et al., 2014
2	Body, brown clay, red outer canopy, plant material and soft sand mixture, sufficient baking, wheel made, without decoration.	Achaemenid	Alizadeh et al., 2014: plate 75 – RH004- S
3	Body, buff clay, burnt brownish gray outer canopy, buff color inner canopy, insufficient baking, wheel made, horizontal excised decoration.	Late Sasanian, early Islamic	Mousavi Haji and Ataee (2010: fig 25, no 92); Khosrozadeh (2017: fig.27)
4	Body, reddish orange clay, burnt brown canopies, fine sand mixture, sufficient baking, wheel made, without decoration.	Third and fourth centuries AH	Ismaili Jelodar (2007: fig. 4-57)
5	Body, brown clay, wash outer canopy, plant material and soft sand mixture, sufficient baking, wheel made.	Third and fourth centuries AH	Ismaili Jelodar (2007: fig.3)
6	Body, buff clay, green glazed canopies, fine sand mixture, sufficient baking, wheel made.	Second century AH	Ataee (2016: plate 32, no 7).
7	Body, reddish orange clay, burnt brown outer canopy, fine sand mixture, sufficient baking, wheel made, without decoration.	Third and fourth centuries AH	Ismaili Jelodar (2007: fig. 4-57)

fire temple due to its location on the edge of the mountain and the distance from other buildings. A noteworthy point in this area is the existence of places where the fire ignites due to the evaporation of gas. The location of the fire temple or its building should be built next to or on it. Ammianus Marcellinus mentions Julianus' attempt to restore a similar construction in the Jerusalem area, which resulted in many workers losing their lives due to burns, and this

fire is one of the natural fires (Ammianus Marcellinus, book XXIII, 2-3).

Structure No. 4 is less commonly seen in religious sites, but can probably be considered the base of the tower. In the historical texts, there is no reference to the circular structure to achieve the adaptation of its function and relevance with other architectural structures of the area. Archaeological excavations can reveal more details of these architectural structures. Consciousness in reviewing and

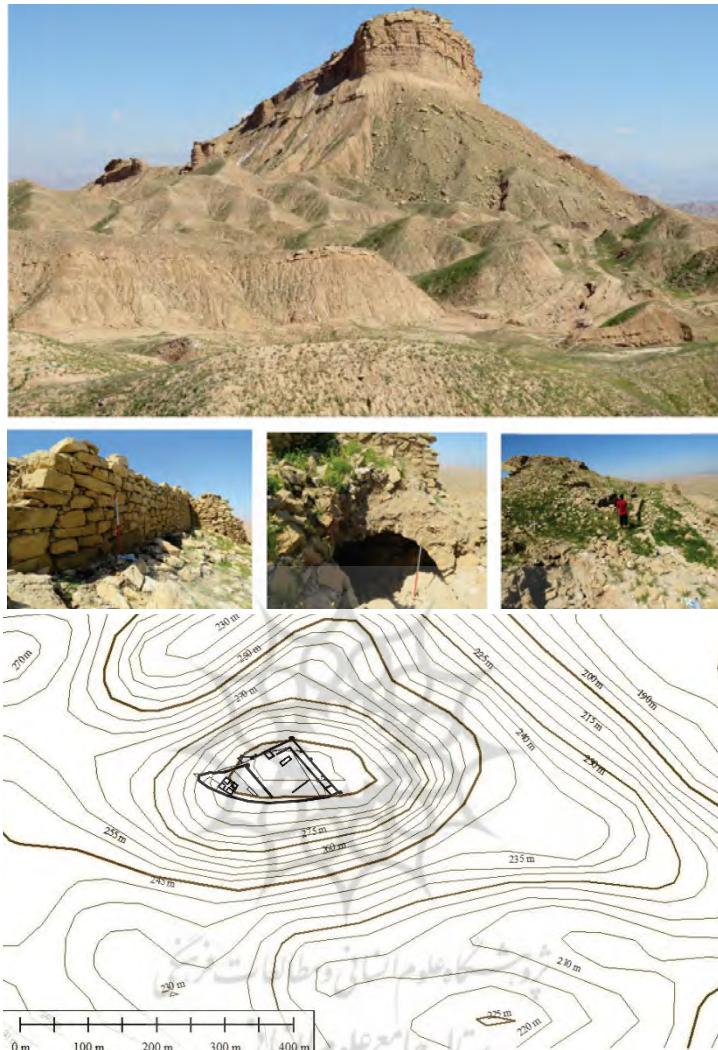


Fig. 7. Location, Condition, and Architectural of Araboon Castle

documenting works is one of the research priorities because the buildings have been severely damaged by heat (Fig. 9). The important point in this section is that we do not necessarily have to match the writings of historical texts with the facts of the archaeological data of a site because many of these texts have not seen the structure and location of the natural features and quoted their description from another

source. Abu Dulaf is probably the first historical source to mention the traces of the Kuh-i Sukhteh. We know very well that Minorsky wrote in his commentary on his treatise that: Abu Dulaf was often careless in Iranian affairs (Minorsky, 1975: 148).

Therefore, in most cases, the inaccuracy in presenting distances and positions is confusing and even contradicts the text between different authors.



Fig. 8. Pottery, Araboon Castle

These contradictions led to a minimal adaptation of Abu Dulaf's text to the authors' findings among the architectural works of the Kuh-i Sukhteh. However, in terms of archeological discoveries, it is the only place to be considered a location of the Asak fire (volcano/fire temple).

Discussion

In examining the location of Asak and its associated fire temple and volcano (probably the same natural fire) mentioned in the historical texts, two components should be considered. First, we must separate volcanoes and natural fires. This separation is very difficult and sometimes misleading to do because the natural fire of Asak is sometimes compared to the volcano of Sicily Island. Also, it is considered the same as the fire in the Caucasus (Al Qazvini, 1994: 571). Interestingly, this ambiguity in the content includes not

only historical texts but also new historical research. Among them is Mohammad Ali Imam Shoushtari, who considers natural fire and its use in the Caucasus and the Masjed-i-Soliman region. He also refers to the fire temples of Asak. He considers the fire used in them to be similar to the fire in the Caucasus and Masjed-i-Soliman (Imam Shoushtari, 1973: 30). Secondly, the fire temple must have been different from the volcano and the natural fire in the specific sense. It is mentioned in the texts as *Beaut Nar*. But except Abu Dulaf, other writers after him have mentioned almost no difference between these two. Meanwhile, Damascene Ansari and Ibn Abdolhaq Baghdadi mentioned terms such as fireplace and fire temple to describe the fire located at the heights around Asak. Their descriptions led us to imagine that the fire lit on the heights of Asak was of interest to the Zoroastrians and they took



Fig. 9. Smooth Surfaces of Baked Gypsum, Kuh-i Sukteh

full advantage of it for religious ceremonies. This issue was also addressed in the discussion of archaeological data. Being on the side of the road (and not necessarily close to the road) to see fire and smoke, and the presence of signs of the porch and dome are also things that we considered a pretext for testing the contents of historical texts. The contents of the texts illuminate the distance of the place of fire from the main road and can be seen only from a relatively far distance day and night. Therefore, travelers and geographers of the early Islamic centuries should be considered justified in not visiting a place on the heights and away from the road. Sometimes some authors (Al Masoudi, 2010: 59) suggest a distance of forty miles (approximately 200 km).

The associated architectural structures, which are usually considered proof of the validity of the claims of Muslim geographers, usually show little adaptation. And archeological excavations are needed

to turn the evidence in the Kuh-i Sukteh of Omidiyah into valid documents. But because the data (including architecture and pottery) found from the Kuh-i Sukteh of Omidiyah is the only example compatible with the contents of historical and geographical texts, this area can be considered the possible location of Asak's fire temple. Based on archaeological evidence, the cemetery mentioned in the historical texts is located in the plain at a remarkable distance from the Kuh-i Sukteh of Omidiyah, and it has not had a significant spatial connection with the architectural structures of Kuh-i Sukteh. This contradiction between archaeological findings and historical texts is probably caused by the way historical texts are written, which are mostly written based on hearsay.

Conclusion

The historical texts of the first to the middle Islamic centuries can help locate

some sites of the Sasanian era and the transition period from the Sasanian era to the Islamic era. However, the information presented in these texts alone is considered a source of confusion for new researchers. Therefore, archaeological studies can clarify the authenticity of these texts. The Kuh-i Sukhteh of Omidiyah is one of the areas studied with this method. During this study, it became clear that the only significant place on the route between Duraq to Arjan or Ahvaz to Behbahan, which can be considered the same as Beaut-Nar or the fire temple of the Sasanian era, is the Kuh-i Sukhteh of Omidiyah. The few remains of archeological works, evidence, and architectural structures also confirm this issue. Being located next to the communication road, many traces of natural fire and scattered architectural

structures, along with clay evidence from the Achaemenid to Seljuk period, indicate the possible religious or ritual use of this relatively high and isolated place. According to historical texts, the use of natural fire for the construction of the fire temples in the Sasanian era was usual in other regions, including the Caucasus or Aran. Kuh-i Sukhteh can also be considered an example of this kind of fire temple without firewood, at least from the Sasanian period. The burning of fire for more than a millennium destroyed the architectural and even natural structures of this area. Therefore, the absence of established structures near this thousand-year-old fire is caused by the nature of the fire's element in the destruction of architectural remains.

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