

RESEARCH ARTICLE

Functional Analysis of the Structure No. 3 of Dahān-e Qolāmān in Sistan of Iran

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Abstract

Dahān-e Qolāmān is one of the Achaemenid sites in the eastern part of Iran. Archaeologically, it is significant since it is the only excavated Achaemenid site at eastern half of Iran and relatively revealing information on urbanization, architecture, administrative, religious, industrial buildings as well as pottery manufacturing. The most important structure of Dahān-e Qolāmān is "Building No. 3" that has attracted the attention of different archaeologists and experts on its function. Ovens and fireplaces are among most important features of the structure that culminated to high variations at period "B". Considering finding archaeological evidences and their comparison to Zoroastrian written sources, especially Avesta, it appears that the Building No. 3 belonged to Zoroastrians from Dranka province, and the regional Satrap supervised its construction according to orthodox religious basics, while fundamentally differs from Zoroastrian beliefs of western Iran.

Keywords: Achaemenids; Sistan; Dranka; Dahān-e Qolāmān; Zoroastrian Religion.



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Introduction

Dahān-e Qolāmān is one of the most valuable Achaemenid sites discovered by Umberto Scerrato, an Italian archaeologist in the 1960s (Map 1). Excavations began since 1962 at the site and continued until 1965. Scerrato understood that the site is remarkably similar to architectural remains of early Achaemenid kings. Therefore, he tried to date the site to 6-4 centuries BC, to the Achaemenid dynasty (Scerrato, 1962: 186-197). Apparently, Sistan was one of the most important Achaemenid provinces, with Achaemenid rulers considering the region strategically, economically, religiously, and even ethnically significant. The expansion of Achaemenid led to the establishment of various urban centers in different Satrapies. Especially they were experts of urbanization and employed architects from elsewhere in their courts.

Earlier, it was believed that Dahān-e Qolāmān was the only Achaemenid site in eastern Iran, but nearly 110 Achaemenid sites were discovered during the 2008 archaeological surveys (MehrAfarin, 2016: 4). If one systematically conducts archaeological survey at Afghanistan's Sistan, number of Achaemenid sites would increase remarkably.

The ancient site of Dahān-e Qolāmān consists of two parts: 1) northern (main urban core), and 2) southern (so-called barracks). The first is the most important which consists of urban center (Map 2). Urban area is 300 to 800×1600-meter east-westward (Scerrato, 1966: 9-30). Southern area is located 2km away from the main urban core. Here, there are major remains called barrack or military structure.

Considering the location, dimension, and architectural elements, every residential unit has own especial function. There have been recognized spaces five types of structural through excavations and surveys: a) administrative buildings; b) religious structures; c) residences; d) industrial workshops; martial structures: e) probably, there are dependent industries of architecture, elite residential area, and also urban services.

Considering several Avestan evidences, "Haetoment" people were among the early Iranians who converted to Zoroastrianism, then the religion expanded to the other Iranian areas. However, written religious sources survived only in the region after "Alexander the Accursed". Avesta. especially Gathas, states Haetoment and its natural features including rivers, lakes, and Khwajeh Mountains. It also says that saviors emerge at this area (MehrAfarin et al. 2010: 180).

Gnoli (2008: 116) knows Sistan not only the region of emergence of the religion, but believes Zoroastrianism expanded westward from there following the Aryan migration. What Gnoli presents, as a modern theory, can be highly remarkable in Zoroastrianism studies in near future if new archaeological evidence is available. Finally, Sistan people of Achaemenid period were orthodox Zoroastrians that played main role in the expansion of the religion (MehrAfarin, 2012: 120). However, lack of archaeological evidence makes scholars and experts suspicious about Gnoli's theory.

Building No. 3 of Dahān-e Qolāmān

It is necessary to describe the characteristics of this unique structure in order to understand it better before analyzing its functions. The so-called Building No. 3 or Sacred Building is located at the northeast of the city (Fig. 1). It consists of a huge 53.2×53.3 m square



Map 1. Geographical Position of Dahān-e Qolāmān in East of Iran

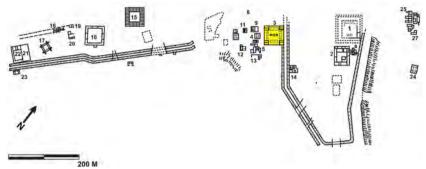
structure, a nearly circular yard at the center with 28.9×27.8m in area. There are four columned porticos at four corner of the yard; each with two to six square columns (Fig. 2). Materials used are clay, mud brick, and wood (Scerrato, 1966). When the excavator observed different coatings of Building No. 3 with remains of fireplaces suggested two different periods, the former "A" and the latter "B" (Scerrato, 1979).

The "A" period installations the structure is remarkably similar administrative structures of Achaemenids (Fig. 3). Two regular series of thick square columns of Dahān-e Qolāmān at every one of porticos remind huge and round columns of Persepolis, Susa, and Pasargad. All four porticos of "Sacred Building" of Dahān-e Qolāmān are connected to central yard, where there are no architectural elements. The yard, structurally, was similar to the treasure of Persepolis with peripheral

chambers. There were rectangular chambers in 9.2× 3.8m dimension, along with staircases ending to roof.

There were fireplaces at the footstalls of some of columns of porticos at period "A". However, there were six pairs of the fireplaces at two opposite sides of inter column of eastern portico, and northern and southern walls. There are also eight pairs of the fireplaces at the wall of northern portico with six at back wall, and two remains at eastern and western walls. There are five fireplaces at western wall, where located single in front of every given column. There are eleven fireplaces at southern portico, with eight in front of columns and the remained three at wall.

Religious installations were subject of changes at period "B", when there were new but complex elements to the structure (Fig. 4), among them are three fireplaces at the center of yard. Eastern and western fireplaces have six



Map 2. Dahān-e Qolāmān Site and its Various Structures. Structure no.3 is Seen by Yellow Color

stairs. Eastern and central fireplaces are 3.55×2.2m, where western one is 2.1m in dimension (Fig. 5).

At this period, the spaces between five of six columns in eastern and northern porticos are enclosed, where only remains a path at right side. There are thirteen fireplaces at every one of the porticos, where seven are at intern wall of porticos and the other remained six, are between columns. Every fireplace between columns has two parts: rectangular lower part that is the place of igniting fire, with an opening to remove ashes and ventilate to fuel. Upper parts of fireplaces divided to four equal parts using small walls with ribvault-like roofs. There were six benches or rectangular tables between internal and external columns of two porticos (Fig. 6). There is an oven at eastern wall of northern portico, similar to modern ovens at Sistan.

There are fireplaces, facing to yard, in front of every column in western portico. They are six with low stairs at both sides (Fig. 7). There are three reservoirs or canals at three sides of this portico. There were recovered amounts of remains of fire, fatty ashes, and burnt bones of animals. Western reservoir is 24 meter in length with a three steps central staircase at two sides of square platform.

Northern and southern reservoir is 8.1 meter in length. They are 90 cm wide and 60 cm deep (Fig. 7).

The big southwestern room had new adjunctions at this period. There were 60cm high mud brick benches at three sides of the room, except threshold. There is 160cm gap between northern and southern mud brick benches (Fig. 8). There are, at least, 27 traces of fire on the benches (Scerrato, 1979). Plan and form of architecture and findings from Dahān-e Qolāmān dated the site to Achaemenid period (Scerrato, 1962). Furthermore, remains and evidence from Building No. 3 indicate a public religious center. Therefore, scholars have suggested variously, however, there are ambiguities on the issue.

There are different definition and interpretation of the sanctuary of Dahān-e Qolāmān while all scholars believe in uniqueness of the structure, because there is not recovered similar structure yet. Excavator of Dahān-e Qolāmān, Scerrato, suggests Building No. 3 as a religious structure that dates back to the sixth to the early 5th or 4th centuries BC. Along with Gnoli, he knows the site same as "Zarin", political and administrative capital of Achaemenid Dranka (Scerrato, 1977: 709). Among scholars who believe Building No. 3 as



Fig. 1. A Landscape of Dahān-e Qolāmān. Building no.3 is in the Bottom

an Achaemenid Sanctuary of Dranka are Gnoli (2002: 100), Boyce (1996: 180-183), and others including Schipman Duchesne-Guillemin. However, and Mary Boyce believes it as a Zoroastrian Sanctuary, but she also suggests that the structure has elements fundamentally heterogeneous to Zoroastrianism. He knows the building as a local sanctuary that Achaemenid kings strategically, and following religious tolerance, permitted locals to construct, as their own sanctuary (Ibid). On the other hand, Gnoli suggested the same idea as Scerrato's that Building No. 3 reflects local religious legacy, not an Achaemenid evolution (Gnoli, ibid).

The most important problem in interpreting the building is ambiguity in the same eastern building; however, there are several Zoroastrian structures at western Iran. Therefore, scholars

accept Zoroastrian symbols religious structures of western Iran as characteristics of the same religion, and compare religious structures of the other regions to them. However, structures that coincide to western religious structures and symbols count as Zoroastrian, otherwise they are not. According to Zoroastrian studies, one can understand irrefutable fact of major difference of eastern Zoroastrians as orthodox ones, and westerners that were highly subject of neighboring religion and attitude, especially Urartu, Ilamite, Babylon, Aramaic, and Egyptian, or dominated satrapies including Lydia, Greeks, and the others. By the other word, religious elements of neighboring people penetrated to Median, Achaemenid, and following dynasties that concluded to heterodoxies and deviances. There are varieties of attitudes, symbols, and



Fig. 2. Building No. 3 of Dahān-e Qolāmān

religious centers of other civilizations at Median and Achaemenid civilizations. Catacomb burials, winged disc, moon and star forms, believe in triad, iconography, and constructing sanctuaries are among achievements of western Iran that penetrated to beliefs and attitudes of western Zoroastrians who themselves were religious and administrative authorities.

In order to understand religious sanctuaries of eastern Zoroastrians, and generally emergence of Zoroastrianism, one should study Avesta and regional sites of the 1st millennium BC. Probably, Dahān-e Qolāmān was the capital of ancient Zaranka satrapy, funded by Achaemenid rulers. It seems that architectures of the complex came from the Achaemenid capital to the region and enjoyed local experts' knowledge, which were orthodox Zoroastrians, and

constructed the complex of sanctuary in Achaemenid style according to local customs and traditions at period "A".

Zoroastrians of Zaranka who used to construct simple fireplaces at Achaemenid period to worship "Athor", far from religious architectural organization, they constructed the same common simple fireplaces at foots of columns or walls at period "A". Actually, westerner Zoroastrians affected early orthodox system of Zoroastrianism and gradually deviated basic religious form. It is not saying that there have not discovered temples that can be referred as fire temple, regarding to archeological researches at Central Asia (Purdavood, 1975: 256).

Scerrato suggests that fireplaces of eastern and northern porticos used to bake breads as offering; however, he considers probable plants as offerings to

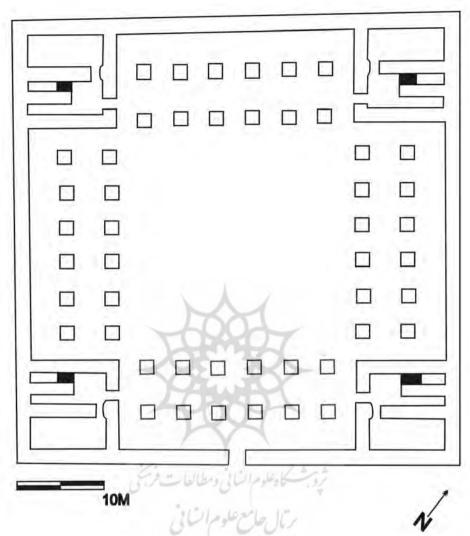


Fig. 3. The "A" Period Installations of the Building No.3

fire. He explains coupled fireplaces at two porticos for worshiping God. However, fireplaces of western portico are single. Long hearths, known as "canal", used as cook in general celebrations including weddings, funerals, offerings, and so on. Triple fireplaces of central yard sign to worship three Iranian gods of Hurmazd, Anahita, and Mithra. Southwestern chamber with 27 small fireplaces may be a niche for sacrificing cow or sanctify Fire

of Bahram (Scerrato, 1977: 17-18).

Following the regional Achaemenid dominance, and the presence of courtiers at Zaranka, some fundamental changes appeared in religious architecture. Achaemenids tended to perform regional reform to present Zoroastrian beliefs follow related manifestations of civilization; however, unwilling to ignore original local traditions and custom. Structures from Period B,

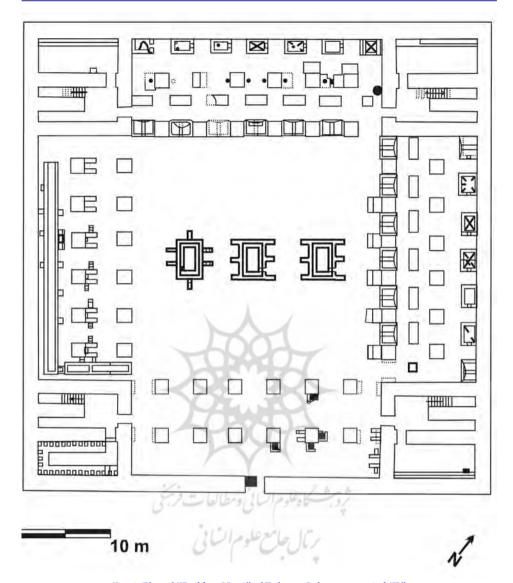


Fig. 4. Plan of "Building No. 3" of Dahān-e Qolāmān at period "B"

generally, according to Greek sources and later Zoroastrian beliefs, related to Zoroastrianism, while Period B cannot refer to an unknown religion.

Spaces between columns of eastern and northern porticos closed at Period B, where only a path remained as entrance. There are thirteen fireplaces at each one of two porticos, where seven next to interior walls of porticos, and the other six remain between exterior columns. There is a low clay table in front of every one of six fireplaces, and a square low bench in front of the entrances of halls. Fireplaces and tables, probably used for rites including enchanting Yasn and roasting sacrificial animals. Upper parts of fireplaces divided to four equal



Fig. 5. Three Fireplaces at the Center of Yard

parts using small dividers, as a place of sacrificial meats. Referring Avesta and other religious sources, one can realize that sacrificing and roasting are among recommended religious acts; however, there are orders in Yasht to sacrifice and roast mono color sheep for Bahram and Tishtar (Avesta, Bahram Yasht, Kardeh 17).

Furthermore, Greek sources report of Achaemenid kings of sacrificing horses and cows. According to Herodotus, Persians prayed not in great sanctuaries, but in open ranges and on mountain summits. Persians climbed mountains and sacrificed for Zeus (Urmazd). They knew skies as Zeus. They also sacrificed for sun, moon, earth, fire, water, and wind (Herodotus, 2004: 191).

According to Avestan sources, every one of Zoroastrian saints who begged Urmazd, sacrificed and offered one hundred horses, thousand cows, and ten thousand sheep at summits of mountains or riverbanks. The offerings

were naturally sacrificial; for nonphysical existence of gods, people could not endow live animals. If sacrificing is sin and forbidden, as some say, sacrificial method and manner means, not sacrificing as such. At Zoroaster era, demonists tortured and mutilated during rites with drunkenness, applause, and magic; then mixed blood with "hum", as sacred essence, and drank. Zoroaster condemned such sacrifices.

According Hinnells (1989: 179), sacrificing itself, or proper performance of sacrifice, is valued and motive as such. Rites are effective sources supporting coincidentally. gods and people When sacrifices eagerly endowed, it is among the greatest good deeds of every Zoroastrians. Cosmos stops in the absence of sacrifice, but it reduces devilish forces. Zoroastrian rites suggest that Building No. 3 is an "Urvisgah", place of performing Yasn. Performing Yasn demands operations including Miyazd rite, Zuhr rite (Sacred water), Barsom



Fig .6. East Portico

Gushudu rite, Providing Dorun rite (Sacred bread), Providing Humah, and Offering water. They reported in Yasn, Hät 4. The rites and tributes offered to Urmazd, Amshaspandan, Khanman, Radan Ashavani, gods, Faravashi men and women, Ushidern Mountain, and so on. The rites called "Yajna" in Sanskrit meaning sacrificing, equal to Yasn (Duchesne-Guillemin, 1996: 51).

During Gahanbars occasions especial ceremonies, "Miyazd ceremony" performed that is offering delightful meat. Miyazd is a ritual meal that is for religious general occasions. It is consisted of bread, meat, and the other edible material that is set on the cloth at religious ceremonies, and priests enchanted prays, sanctified it, then people ate (Razi, Vol. 4, 1997: 615-616). Actually, eastern and northern porticos were places for "edible offerings"; where priests [Zut]s sat on a square bench in front of entrance of every one of porticos, enchanting Yasn, when believers stood in front of enclosed fireplaces, roasting pieces of meats. Therefore, there were Barsom on tables: there were firewood.

and probably mortar next to Barsom. Herodotus reports sacrificing as "there is a bed of fresh grass, especially green clover, as sacrifices cut to pieces and roasted, then lay roasted meats on it, when one of priests enchant psalms" (Herodotus, Ibid: 217). He continues that Persians tend to celebrate their birthdays. Riches usually sacrifice a cow, horse, camel, or zebra intact in big ovens (Ibid).

Roasted meat divided between believers. Miyazd or Zuhr custom commonly used at Islamic period among Iranian Zoroastrians and Indian Persians. They killed and roasted a sheep. Priest ate a small piece during "Yazashn" rite and endowed the remains to poor people, then a priest enchanted psalms. Vedantic Indians had the same rite. They spread sacrifice on a bed of plants, called Barhish, same as Avestan Barzish that means pillow (Benveniste 1998: 17).

There is an oven at the beginning of entrance of northern portico, which is completely similar to modern ovens of Sistan. Obviously, after 2500 years' ovens of Sistan are similar to modern

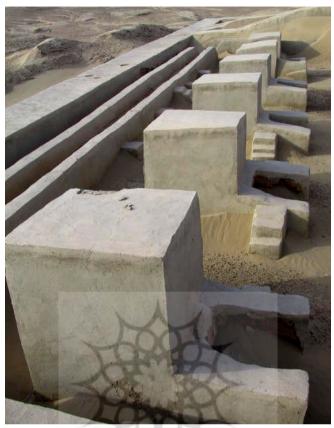


Fig. 7. West Portico

ones. Baking breads to offer are among functions of ovens in Sistan. Therefore, every sanctuary has its own oven. Destructing ovens are forbidden and destruction of ovens needs sacrificial hen or rooster in prior; it is undoubtedly a regional ancient tradition. Poor families who cannot afford sacrificial animals usually bake "Ta'fu", round thick bread, as offering for their ancestors and deceased, cut and divide it among believers and worshipers.

"Drun Yashtn" is among Zoroastrian religious rites, especially in enchanting Yasn. Drun is unleavened small round bread, which used in religious rites (Boyce, vol. 1, Ibid: 96). It is known "Daronangeh" in Avesta (Razi, Vol. 2, Ibid: 615). Offering

Drun is for deceased's Faravaŝï, which is round after round cosmos, according Pahlavi sources (Duchesne-Guillemin, 141). According Duchesne-1996: Guillemin, it endowed to Sorush, the angle that guide spirits in the other world (Ibid: 111). "When one deceased, there is Yash Sorush for three days, light fire, and enchant Avesta, because the spirit is in our world during these three days. At 4th night, three Drun should be made; one for Rashn, and Ashtad gods, and the other for Vaio gratification, and one for Arda Farvahar gratification". (Razi, Ibid: 617).

Accordingly, the oven of northern portico at Building No. 3 is for baking Drun, as offering bread, following rites,



Fig .8. Big Southwestern Room

when dividing it among audience.

Six single ovens of every one of internal columns of western portico differed with eastern and northern ovens. Ovens typically made to carry cooking big pots. Probably, it was a place to cook offering foods on fire. One can compare them to ovens from Pasargad with three stairs. One should notify that ovens are low and stairs are symbolic, because they are functionally ineffective. The author wonders if every given ovens symbolizes three steps of "Good will", "Good Deed", and "Good Speech" that deceased steps to pass Ĉinvat Bridge to Heaven.

Gushudu is among Chanting Yasn rites that priests perform. Here, they cook separately different parts of body of the sacrifices, because offered to a given god. There is not a suggestion about function of single ovens of western portico; if they functioned according to

what said earlier.

There are three long canals or reservoirs in front of external wall of western portico. There were bone fragments in remained ashes at the reservoir, what expanded, burnt or unburnt, vastly on the portico and mixed to fallen plasters of the walls, which indicate sacrificial and burning. or baking, were among religious ceremonies at the portico (Seyyed Sajjadi, 1996). Scerrato believes that reservoirs used to cook large amounts of foods in ceremonies including weddings, funerals, union of villagers, offerings, and harvesting ceremony, similar to long ovens of Uruk that seems used to cook food and offer to gods (Scerrato, 1979: 17). Some worshiping platforms and big ovens found from Ishli Ani Sanctury, northwest of Turkmenistan, date to THE 5th to 2nd centuries BC; there were

also bone fragments, mostly crania and hooves, and lots of bronze points (Abtkof and Yousopof, 1996: 13).

Mary Boyce says that open ovens with bone fragments are not Zoroastrians', and believes that bones never mix to fire. She continues that working with clean and unclean is impossible in Zoroastrianism (Boyce, Vol. 2, Ibid: 19-20). Another rite of chanting Yasn is "Ab Zuhr" [Zuhr water] or "Nethar be Ab" [endowing to water], that is endowing to water, which enforces water because water is among sacred elements that manifests Ardvisur Anahita. During "Ab Zuhr", Parahum mixed to Hum, milk, and pomegranate pour in water (Tafazzoli, 1985: 1-4-5). Canals flow around the room and subdivided to clean parts by horizontal stripes that calls "Pavis", used to "Ab Zuhr" ceremony. Here, priest sits with bowl of sacred water, and begins chanting Yasn (Duchesne-Guillemin, 1996: 109). Canal at western portico with three small partitions reminds a container of water at Zuhr ceremony; however, it contradicts to burnt bones. There is a statement in Vandidad, Fargard 18 that says: "if a man intentionally has sexual intercourse with his wife at her menstruation period, what is the punishment? The man has to sacrifice virtuously thousand small animals and endows visceral parts to fire, when a priest is with him. He has to endow shoulder blades to goddess of waters" (Avesta, Vandidad, Fargard 18).

If we recognize offering animals in Zoroastrianism, it would be natural that bones burn during roasting; Hum as liquid offered to water; and jaws, tongues, and left eye were among offering parts of animals. Therefore, probably, cranial fragments or burnt shoulder blades offered to water.

There were supplementary spaces at southwestern big room, at period

B. There were 60 cm benches of mud brick at three angles of the room, except entrance. There is 160 cm space between two northern and southern benches. Some 27 traces of fire recognized on the benches. It is said that the altar is just same as Mithraic altars (Seyyed Sajjadi, 76: 48). However, it should be considered that, as a 160 cm small place, it is not suitable as a place to sacrifice big animals including cows. Altar needs an open and vast space for any movement of man and animal and eased sacrificial activities. On the other hand, blood of sacrifices and water to wash it away needs a canal to drain sewage, which is not obvious in the room. Southwestern room with 27 small fireplaces reminds "Zuhr Fire" [offering fire at the morning of fourth day of postmortem. These are not too large to carry firewood to keep fire, because woods need space and resulted smoke is much than the small space. However, fat solves the problem and flash more light to the dark space of the room.

According to Zoroastrians, dead soul goes to King Victorious Bahram [fire of Bahram] at the morning of fourth day postmortem; if his relatives offer "Zuhr Fire" to Fire of Bahram, he can easily pass the Ĉinvat Bridge. If there is not Fire of Bahram, the spirit goes to every nearby fire temple; therefore, "Zuhr" rite should offers to a lower rank fire (Ibid). If deceased was a pious believer in his life, Ĉinvat Bridge expands o Neizeh in width, each Neizeh is 3 feet. Therefore, the bridge expends 27 feet and the spirit of deceased easily passes the bridge accompanied with Soroush and Athor gods. However, if he was evildoer and worshiped demons, width of the bridge will be narrower than a blade. At fourth day, the family of deceased with priest offer tributes to judges and the angle who guide the spirit to the other world.

One of the guide angles of the Last Travel is Athor god. It is probable that the family of the deceased to appease Athor god, offer "Zuhr Fire" at these 27 small fireplaces that means firing animal fat or spring butter as the food of the spirit when going to Heaven, to courage him to expand the bridge widely in 27 feet (Duchesne-Guillemin, 1996: 147). Therefore, southwestern room of Building No. 3 of Dahaneh-e Qolaman is probably "House of King Bahram".

At period B, three fireplaces built at the center of the building. Emergence of triple fireplaces usually attributes to Ardashir II, Achaemenid king, because it was at his era, for the first time, that he called the other two Zoroastrian gods, Mithra and Anahita, in his inscriptions. Mithra is god of bond and Anahita goddess of water. Thence, Ardashir II's announcement is for these gods with Urmazd, and the triple fireplace attributes to three gods. Similar fireplaces recovered from Pasargad; each with three stairs and fuel storage, just similar to the fireplaces of central courtyard. Later examples from open precincts of Nagsh-i-Rustam are without stairs and date to Sassanid period (Saeidi 1997: 188).

Building No. 3 of Dahaneh-e Gholaman is combination of Zoroastrian cultural orthodox beliefs with civil achievements that Achaemenids flourished at Sistan region. There are various unknowns in Achaemenids' religion and beliefs that can be satisfied by archaeological excavations.

Conclusion

In Achaemenid archaeology, most of archaeological findings are from Pasargad, Persepolis, and Susa, while scholars usually ignore the other simultaneous remains and sites. However, remains of these three cities are from Achaemenid kings, and their art, architecture, and plan manufactured by various people of empire, especially western regions, whereas eastern people play scarce role through cultural activities. On the other hand, they show various aspects of royal life, with no further information about commoners or various people of the empire.

Dahaneh-e Gholaman, among known Achaemenid sites of eastern Iran, can solve some problems. It is partially excavated, where probably was a city of Dranka Satrapy and included martial, administration, religious, and industrial districts. The most important structure is Building No. 3 that has raised various opinions about its function. The most important theory is religious function that theorized based on relevant rites that performed at the building.

The building constructed at two periods. The structure that made at period A, as very plain and very complicated at period B. the most significant element at two structure, especially period B is abundance and variations of ovens and fireplaces at different parts of the building; some of them special for the building with no other resemblance at the other sites.

Studying Avesta and the other Zoroastrian texts, and comparing to the other archaeological evidences from Building No. 3 indicate that the building belonged to Zoroastrians and used in their ceremonies. It should be noted that Zoroastrians from eastern Iran including Dranka were among orthodox Zoroastrians, whereas western Zoroastrians with Achaemenid kings at top, deviated from Zoroastrian principles because of contacts to western religions, especially Babylonian, Ilamite, Assyrian, Egyptian, and Lydian.

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