

EXCAVATING AN EMPIRE

Achaemenid Persia in Longue Durée

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Chapter 10

Landscape, Sources and Architecture at the Archaeological Remains of Achaemenid Sīstān (East Iran): Dāhān-i Ghulāmān

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Geographical Setting

The region of Sīstān, located along the border between Iran and Afghanistan (between 30°18' and 31°21' northern latitude and 61° and 61°50' eastern longitude), constitutes today, together with the southern region of Baluchistan, one of the largest provinces (*ostān*) of the Islamic Republic of Iran: i.e. *Sīstān o Balūchestān*. The province, whose total area is over 181.000 sq. km, is bordered by the province of Khorasan and Afghanistan to the north, Afghanistan and Pakistan to the east, the Sea of Oman to the south, the Kerman province to west and the Hormozgān province to south-west.

From a morphological point of view, the present Iranian province of Sīstān represents the westernmost portion of system of lagoons constituting the Hāmūn Lake, whose eastern part is administratively within the boundaries of the Afghan province of Nimrūz.

The Basin and the River

This particular wide hydrographical basin has three geographical sub-units:

- 1 - The upper delta of the Helmand River, which is largely empty and used for agriculture;
- 2 - The wetlands (*hamoons*) covering the lower delta plain;
- 3 - A hyper-saline lake (Gowda-e Zereh) in the southern part of the basin, which collects the excess water from the marshes and - in case of serious flooding - the river.

There is no outflow from this terminal lake: the water of Gowda-e Zereh is completely lost because of its particular conditions, including rapid evaporation.

The river Helmand is the largest drainage system of the area, but other smaller rivers also feed the marshes, which are, from an environmental perspective, the most important parts of Sīstān. The basin is one of the driest regions of the world. The annual precipitation is about 50 mm and in these conditions, human settlement is possible only if another source of water is

available. The Helmand River has played, and continues to play, a very important role in the area, especially because it also drains the melted snow from the southern Hindu Kush. Three tributaries contribute the balance of hydro-geological system with significant flows of water:

- 1 - Kāsh;
- 2 - Fārāh;
- 3 - Ardaskan (Harūt), which collects the flow from the western part of the Hindukūsh.

The river Helmand (*Erymandrus*, Pliny, VI, 25, 23), is located in southwestern Afghanistan and eastern Iran and is about 1150 km long. Its width varies between 200 and 900 meters, and its river bed lies between two and five meters deep. Originating from the Bābā Range in central Afghanistan, the river flows in south-west direction, passing more than half of its length in Afghanistan, before flowing north for a short trait into the Iranian territory, continuing within the swamps on the border between Afghanistan and Iran. Its alluvial occupies an area of 160,000 square km. The processing of the satellite data (Landsat 7 ETM), the geo-morphological indications, geological surveys and the field observations indicate that the course river is often varied according to tectonic factors.

Rūd-e Kočak, Rūd-e Šeileh, Rūd-e Bīyābān, Sana Rūd, Rūd-e Sīstān and Rūd-e Paryān are the former branches of the river, whereas today only the last one is the main branch in the northern parts and the Rūd-e Sīstān, as a minor branch, regulates the southern fluxes of the Rūd-e Paryān. Historical and archaeological remains in the area confirm that the river has fluctuated in the north, so that the delta is now active in the northern part of the basin. The deviations of the Helmand River during the last thousand years can be regarded as a neo-tectonic phenomenon due to the lifting of the southern regions and/or to the subsidence of the northern parts of the territory. Seven different deltas are recognized whose formations belong to different periods:

- 1 - It can be seen in the main branch of the Helmand River; before its departure, relative to the time when Helmand ran in a major depression;
- 2 - it can be seen in the Rūd-e Bīyābān, the largest and most recognizable course of the old river;
- 3 - Saroutar is located in the eastern part where it pushes the water in the depression of Navar Laleh Afghanistan;
- 4 - Traghoun is the southernmost point where the river empties into the depression of Gowda-e Zereh;
- 5 - Sana Rud, is narrower than the Rūd-e Bīyābān or Rūd Kočak;
- 6 - The current delta of the river Helmand;
- 7 - The most recently formed delta, in the marsh of the river Paryān Pouzak.

Nevertheless, the lagoon basin of Hāmūn is not but the terminal part of a vast and complex inland system¹ between eastern Iran and south-western Afghanistan, extended over 400 sq. km in length (between 61° and 66° of longitude east) and of around 200 sq. km in width (between 30° and 32° of latitude north) (Jux and Kempf 1983, 7).

¹ The inland hydrographical basins are those that do not release into the sea. The basin of Sīstān is, therefore, a typical inland deltaic basin similar to the Central Asian ones, among which, for instance, are the Syr Darya Valley in Kazakhstan, the Zeravshan Valley in Uzbekistan, the Murghāb and Tedžen Valleys in Turkmenistan and the Amu Darya Valley in Turkmenistan and Uzbekistan.

The basin, nearly of elliptic form, is surrounded for the whole extension of its perimeter by rather elevated mountain chains. The basin takes the name of the Basin of Sīstān or, sometimes, the Basin of Helmand, from the name of the main river that feeds it. To the north, the chain of Hindukūsh, going down in southwest direction, constitutes an ample lobed limit through binges projected in the lowland; the eastern side, instead, is separated from the Indus River basin by the Suleiman Range; the mountain chains of Baluchistan and Makran delimit the border toward the south, while the mountains of Malik-i Siāh, in eastern Iran, constitute the western border. It is inside such an elevated basin, in the western extremity of the ellipse, in eccentric position with north-south axle, that the irrigable area of the Iranian Sīstān is located.

The frontiers that today demarcate the vast depression of Sīstān are, in effect, of purely political-administrative character, effectively unrelated to the morphological aspects of the territory. On the other hand, the traditional historical-geographical subdivision between Sīstān proper² and the desert of Registan finds confirmation in real territorial characteristics (Jux and Kempf 1983, 7). While, in fact, the south-eastern portion of the basin includes the elevated south-western balconies of the Registan Desert (between 750 and 1200 meters above sea level), covered by vast sandy extensions, the Sīstān *strictu sensu*, in the north-western part, is locally alone and marginally related to the deposition of aeolian sands³ and presents. Instead, it has some aspects of a vast alluvial lowland, engraved in the terraced levels, covered by vast extensions of *dašt*⁴ (as for instance the *Dašt-e Margo* and the *Dašt-e Khaš*), that imperceptibly descend down to the level of the lake.

The water regime of Hāmūn is totally dependent on the main rivers and the secondary courses of water that feed its basin. The four greater rivers that, after longer and tortuous runs, pour again into the Hāmūn at their deltas set at around 500 m above sea level are, from southeast to northwest: the Harut Rūd, Farah Rūd, Khaš Rūd and Helmand. They originate in the western zone of the Hindukūsh chain and are fed both from the seasonal precipitations of this mountainous chain and from the spring breakup of its snows and ices.

Between them, the Helmand is the one that mostly feeds the lake: with a course around 1400 kms long (Hanifi 2004, 170). The river runs most of its course in Afghanistan. It takes its origins from the Kūh-e Baba in the Hindukūsh chain located in the southern extremity of the Hazarajat province (Faiservis 1961, 12; Hanifi 2004, 170).

Helmand's catchment basin of around 170.000 km² (Jux and Kempf 1983, 9; Ehlers 2003, 647), that practically corresponds to the whole south-western portion of Afghanistan, the river flows toward the Iranian frontier, through the Afghan provinces of Wardak, Oruzgan, Helmand and Nimrūz. A little bit to west of Chahar Burjaq, the river diverts toward north, directing to Zaranj, capital town of the Afghan Nimrūz province and going to constitute, before flowing through a complex delta system into the Hāmūn lake, for around 55 Kms, the Iranian-Afghan

² It is the so-called "Seistān District" mentioned by Vogelsang (1992, 45-47).

³ One of the zones affected by the accumulation of big sandy dunes, is, for instance, the central part of the present delta fan of Helmand, in correspondence to the lower part, Šib-e Ab, in which the historical site of *Dāhān-e Ghūlāmān*, excavated by an IsMEO team directed by Umberto Scerrato, is located.

⁴ This Persian term *dašt*: "expanse of level ground", refers to a type of very specific landscape, *i.e.* the vast lowlands piedmont with the gravelly surface, characteristics of the arid zones of central Iran. Set at the feet of mountainous tops or highlands, the areas of *dašt* are constituted by coarser material, as gravels of different greatness and composition that go to usually deposit in the form of rather thin layers (Ehlers 1996).

frontier. In effects, in proximity of the border zone, in the district of Kūhāk (Sajjadi 2000, 563) the river divides to two stumps: the first one, locally called Rūd-i Sīstān, flows through the its namesake lowland in the Iranian territory, where it is used by the local population to irrigate the crops. The second, called Rūd-e Paryan, constitutes the line of frontier near the villages of Narui and Miankangi and finally pours again in the lagoons constituting the eastern portion of Hāmūn, in the Afghan territory. These two ramifications are the rather recent fruit of two floods that, in the first case in 1884, caused a conspicuous amplification of the Rūd-i Sīstān, and then, in 1886, let the waters of the river to meet in the Rūd-e Paryan, that up to that moment had been only an artificial channel of small dimensions, allowing the river abandon its old course, that flowed near *Nad-i Ali* (Hanifi 2004, 170-71)⁵.

In total, the catchment basin of the four rivers that feed the system of Hāmūn lake extends over an area of around 350.000 km² (Ehlers 2003, 646; Jux and Kempf 1983, 9), of which only the 26% is within the boundaries of Iran, while the remaining part is in the Afghan territory.

If compared to the enormous extension of this area, the surface of Hāmūn appears rather limited. As already mentioned, it is tightly connected to the water regime of its tributaries. It is traditionally the spring period in which the Hāmūn comes to reach the most greater extension (Jux and Kempf 1983, 10; Hanifi 2004, 171).

In this period, in fact, the water level in the depression gets up to around a meter, coming to reach the 472 meters above sea level. In this way, the Hāmūn assumes the aspect of a semicircular basin, with a maximum length of 200 Km. and a width of around 20 Km and a total surface reaching the 3900 km² (Jux and Kempf 1983, 10; Ehlers 2003, 646).

Under these conditions of flood, water starts to flow out from the Hāmūn toward south, channelling, in a sort of drain of "too full" constituted by the Šelagh Rūd, to flow in a basin placed in the deepest point of the Sīstān depression, to 467-65 meters above sea level. This basin, known by the name of Gowda-e Zereh (around 2400 sq. Km) (UNEP 2006, 18, Tav. 4), constitutes the most southern section of the Hāmūn lake system, located in the Afghan territory, around 80 km southeast of the main body of the basin and separated from the latter by a lower balcony (Ehlers 2003, 646).

The outflow of a part of the waters in the Gowda-e Zereh and intense phenomena of water evaporation, toward the end of the summer season, after the period of maximum course of the tributaries, let the level of the water of the Hāmūn go down for some meters. In this way, the surface of the lake tightens, generating three separate basins,⁶ placed to 471 m. above the sea level (Jux and Kempf 1983, 10), Hāmūn-e Helmand (650 sq. Km), Hamun-e Saberi (800 sq. Km) and Hāmūn-e Puzak (480 sq. Km). While Hāmūn-e Helmand is located in the Iranian territory, Hāmūn-e Saberi and Hāmūn-e Puzak are placed, one partially and the other entirely, in the

⁵ It is fitting to specify that, during the centuries, both because of the man's interventions, and more often, because of peculiar geological, hydro-geological and climatic processes, the terminal line of the Helmand, and, its delta fan, has suffered extremely notable deviations. It can be underlined that the result of the analysis of this phenomenon is of fundamental importance for understanding the dynamics of the evolution and distribution of the human settlements in the region.

⁶ It is opportune to notice that any historical source preceding the 19th century mentions the existence of more lakes in Sīstān. Probably the present division in three or four basins with different names is due, above all, to the disputes occurred in the last two centuries among Iran and Afghanistan for the division of the waters of the Helmand (Sajjadi 2000, 564).

Afghan territory. It is really in the basin of the Hāmūn-e Puzak that currently the river Helmand pours most of its waters (Ehlers 2003, 647), giving origin to the periodic cycle of filling, outflow and evaporation characterizing the whole system.

These hydrographical dynamics, nevertheless, synthesize operational processes of the Sīstān basin only in a general and theoretic way. As it is easy to understand, the presence of numerous variables that can influence such a sensitive mechanism is a potential cause of very frequent and rather radical oscillations in the parameters defining the characteristics of the basin. In fact, too many periods of excessive aridity or of violent floods in the past - and continuing to today - render the morphology of this region extremely mutable.

A complex system in continuous evolution

The river Helmand has been defined as the “life-line” of Sīstān (Faiservis 1961, 13). The delicate ecological *equilibrium* of the whole basin derives from the total dependence on the water flow of the river, whose course almost acts as an umbilical cord for all the living species of the region, included man. The stories of the river, therefore, have to be considered prejudicial for the reconstruction of the functional and structural factors that have conditioned the human history in Sīstān.

To understand the cultural development of the Sīstān basin completely, nevertheless, aside from the knowledge of the hydrographical dynamics, one cannot do away with a preliminary and articulated analysis of the whole environmental reality, i.e. of the climate and temperatures as well as of the damp and wind factors. The present configuration of the region, in fact, hides in itself the interpretative code of the behaviour of its inhabitants during the previous times.

Climatologically, Sīstān is located in the Asian part of the desert band of the sub-tropical moderate zone of the northern hemisphere (Jux and Kempf 1983, 15). In contrast with the highlands surrounding it, characterized by a steppe climate with damp winters and dry summers, in Sīstān a semi-desert climate predominates, in addition to an area with full desert conditions in Registan.

The precipitation is extremely low. The data furnished by the meteorological station of Zabul for a period of observation of over twenty years point out an annual average of precipitations equal to 50 mm., with a low point of 11,9 mm. in 1973 and a maximum of 108,9 mm. in 1963 (Ehlers 2003, 646). Greatest precipitation occurs during November and April, while the remaining months are completely dry.

The rain thus cannot have a meaningful or important role, neither for the growth of the vegetation (considering that they do not reach the limit of the non irrigated agriculture, equal to 300 annual mms) or for the amount of water furnished to the rivers and lakes.

The annual medium temperature is around 21.6° C (Ehlers 2003, 646), with an annual oscillation of over 25° C in comparison to this value. These are recorded, in fact, peaks of winter cold that can sometimes reach up to -12° C and summer temperatures over the 50° C. The notable summer aridity, nevertheless, is partially mitigated by the damp (due to the presence of the great surfaces of water), that, however, reaches its maximum level, equal to 50%, only in the winter months (Jux and Kempf 1983, 16).

The severe aridity of the climate is the direct cause of the water evaporation, another parameter that mostly influences the hydrologic cycle of the basin and its morphology, because the extension of the terminal lakes can vary notably, even reaching complete dryness⁷.

Every year, the greatest rivers in the basin pour again an average of around $6 \times 10^9 \text{ m}^3$ of water in the terminal lakes, of which the Helmand furnishes 75%, the Fārāh Rūd 20% and the other courses of water the remaining 5% (Jux and Kempf 1983, 9). The quantities of the course of water vary considerably during the year. Those greater are recorded in April and May, while already from July, and up to November, the lowest levels are reached. The analysis of the curves of the course of water reveals that the aforesaid spring peak does not have any relationship either with the period of maximum local precipitations in Sīstān or with the snow melting on the Hindukūsh. Although the snows on the Hindukūsh melt mainly between April and May, the highest level of Helmand is registered between March and May (Ehlers 2003, 647) and appears attributable, instead, to the plentiful spring rains that fall on the mountainous chains in this period (Jux and Kempf 1983, 10). The rapid diminution of the course of water beginning from July, finds instead a double explanation, both in the arid character of the summer season on the Hindukūsh (in July the average of the precipitations is 5 mm.) and in the diminution of the breakup of the snows on the peaks, recordable starting from the end of June.

In the aforementioned periods of maximum course of the Helmand, the depth of the terminal lakes is of around 1-2 meters (with points of 2.5 meters recordable in the Hāmūn-e Saberi), equal to a total volume of around $6.5 \times 10^9 \text{ m}^3$ of water. Considering that, instead, the annual average of the water volume of the lakes is of around $3.8 \times 10^9 \text{ m}^3$, around 50% of the water of the lakes is lost to evaporation. If one keeps in mind, then, that because of the elevated evaporation, the river loses during its course around 25% of its waters and, likewise, also the other tributaries decrease as soon as their courses draw near to the terminal lakes, it is easy to understand how a big part of the waters coming from the Hindukūsh annually evaporates in the Sīstān basin. Therefore, as a diminution of the rains on the mountainous chain, this can alter completely the equilibrium and the morphology of the region.

Another very important factor in determining the climatic and environmental characteristics of Sīstān is represented by the mobile front of the high sub-tropical pressures. The vast surface of irradiation, mainly in the Registan desert, heats enormous masses of air that lift some areas of low pressure, so that during the summer, from the northern areas of high pressure, they insert in Sīstān winds with a constant northwest direction, which come to reach the 150 Km/h. This so-called “wind of the hundred twenty days” (Faiservis 1961, 16; Jux and Kempf 1983, 16-17; Hanifi 2004, 171) is important for its erosive action and for the distribution of the sediments⁸. It is really this violent wind, in fact, that, practicing an action of mechanical disintegration, constitutes an important part of the sedimentary cycle, characterizing the geologic processes in Sīstān, in alternating phases of aeolian erosion, deflation, dejection and river sedimentation.

The water volume of the rivers that flow in Sīstān constantly decreases along the lower part of their course. This is due to the strong evaporation, but also to the considerable necessity of

⁷ According to the stories of the local farmers, serious droughts have taken place in 1920s, in 1944 and in 1971 of last century. Hedīn and Annandale report some 1903 drought, while Goldsmid, Huntington and Annandale report about another, which occurred in 1870/71 (Jux and Kempf 1983, 11).

⁸ The desert of pebbles or *dašt*, typical landscape of eastern Iran, is a product of the aeolian erosion that carries away all the thin and light materials among the stones, leaving them exposed.

water both for the crops located along the shores and for the wild vegetation in proximity of the deltas. Morphologically, the course of the rivers is penalized, besides, by a very low gradient level that decreases the speed of the slide⁹.

The rivers, nevertheless, do not pour only large quantities of water into the terminal basins, but above all, they bring in a big mass of sediments, calculated around $17,8 \times 10^6$ megaton/years (Jux and Kempf 1983, 18). Obviously, the more the load of particles in suspension in the flow, the more elevated the specific weight of the suspension becomes, making possible, accordingly, the transport of heavier particles like sands and pebbles from the banks, and even small stones. The quantity of lime that can arrive to accumulate in this way is notable indeed and is one of the factors that can influence the course of the same river. Very slimy rivers that flow in the valleys with a very low gradient, in fact, can form meanders that, with time, contribute to the progressive changes. In the course of the waters in a direction that can be notably different from the original.

It should be specified well, nevertheless, that the sediments transported by the river are of two different types: on one hand, there are the heavier ones that slip along the level of the bed, on the other, there are those lighter ones, that are transported in solution by the water. Unlike the latter, which succeed in spreading widely inside the lakes, the former, heavier ones are deposited in proximity of the bank of the lake in the form of cones of dejection. At the mouths of most greater rivers, therefore, some deltaic fans are formed that, considering the accumulated sediments, are slightly set to a more elevated level in comparison to that of the surrounding alluvial lowland.

The particles brought in suspension succeed instead in reaching the deepest part of the lake basin, going to deposit on the fund of the lake and causing an annual raising estimated at around 3-6 mm. Considering that such phenomenon uninterruptedly goes on from the Tertiary age up to the epoch of the formation of the Basin of Sīstān, below the surface of the lakes up to today, it should have actually accumulated hundreds of meters of clay deposits. Nevertheless, on the occasion of an exceptional drought, in 1971, core borings effected on the fund desiccated of the Hāmūn-i Saberi and of the Hāmūn-i Puzak showed, in a rather amazing way, that the deposits of Quaternary age did not exceed 20 meters.

Some other parameter, therefore, influenced the dynamics of the sedimentation in the terminal lakes and the aeolian erosion seems once more to play an important clarifying role inside such process. At the end of the period of the floods, in fact, the terminal lakes and the deltaic fans present as ample and flat desiccated extensions, on which the wind can violently blow eroding the most superficial layers. The corroded material during this process is deposited, subsequently, forming some mobile dunes (*barkhan*), to form a crescent, that generally has a height of some meters and an amplex that ranges from 10 to 50 meters. While the dunes formed to south of the Hāmūn-i Puzak dissolve in the river Helmand, thus getting "recycled" in the process of lake sedimentation, those that have origin in the Gardan Reg, across the Gowda-e Zereh and in direction of eastern Registan, accumulate in structures hundred meters high in the piedmont band of the south-eastern Hindukūsh.

⁹ The longitudinal gradient of the Helmand Valley decreases up to 0.39% toward the lower part of its course (Faiservis 1961, 17 and fig. 4; Jux and Kempf 1983, 9). This is to point out a notable diminution of the power of the flow of the river, among the slimmest in the world.

The millennial combination of the complex processes has given to the Sīstān Basin the present morphological conformation and peculiar environmental characteristics, effectively schematized by Fairservis (1961, 16) and with more details taken in examination by Jux and Kempf (1983, 28 and ff.). On the basis of their observations, one can affirm that the territory of Sīstān divided into environmentally distinct zones, each one characterized by peculiar flora and fauna, which are reflected also in the human geography, both signifying the way of production and the settlement patterns.

The terminal lakes, nevertheless, represent the hinges around which the ecosystem acts, as well as the fundamental element to which the whole settlement structure of the territory is tied up. Their waters are essentially deprived of vegetation, although furnish an important habitat for fish and wild animals. The greater concentration of plant species are instead at the lacustrine zone. Immediately around the aquatic mirrors, in fact, there are bands of reeds, locally called *naizar* (*Phragmites communis*) and other reeds with narrow leaves (*Typha angustifolia*), 3-5 m. high and able to not only survive the annual variations in the level of the water, but also the more prolonged drought. A combination of plants, grasses and above all cattail, locally known with the name of *tazg* (*Scirpus micronautus*) constitutes the band of more external vegetation (Ehlers 2003, 647).

These plant kinds are used by the local population as forage for the bovine breeding (that in the lake band has always found ideal conditions), as construction material, textile fibres for carpets, as well as fuel. The rushes are also used for the construction of the typical local boats, called *tītī*, which, by the virtue of their flattened underside are not only able to float in the lake basins but also among the swampy reeds (Fairservis 1961, 13). In this whole lake band the subsistence is based, aside from bovine breeding, on the fishing, fowling and on the harvest of the reeds.

To the outside of the lake band is found the fertile delta zone, with capillarity reached by the channels of artificial irrigation that furnishes the best conditions for agriculture¹⁰. All around one finds zones of pre-desert steppe, favourable to sheep breeding and hunting activities.

This sequence, typical of the natural ecosystems surrounding the lake is, nevertheless, determined by the regularity and the duration of the floods of the rivers (Ehlers 2003, 647). It is necessary, in fact, to consider that the inside divisions to the lagoon ecosystem found on a sort of dynamic equilibrium: oscillations in the extension of the Hāmūn can also have influence on the physiognomy and the extension of the surrounding areas, consequently putting in crisis their productive function and, therefore, conditioning, in a substantial way, the human behaviour.

It is then evident that the fragile vital equilibrium of the Sīstān Basin, considering the incidence of numerous variables, is mainly based upon the availability of enough water for making the land cultivable and allow the continuation of life. This means that the historical geography of Sīstān coincides in most part with the history of the management of its water resources, as well as endemic crises of varying intensity and duration.

¹⁰ It is really this delta zone to have offered during the millennia the optimal conditions for human settlements, in virtue of its notable agricultural ability and central position in comparison to ecosystems characterized by different resources, able to assure integrated and complementary forms of productivity and maintenance.

Historical Sources

The scholars by now agree that the first historical reference both to the territory around the Hāmūn Lake and to the Helmand River is that of the inscription of Darius I (522-486 a.C.) at Bisotun¹¹ (DB col. I 1.16; Kent 1953, 116-135; Schmitt 1991; Lecoq 1997, 83-96, 187-217), in which the name of the country and its inhabitants are attested in the old-Persian form *z-r-k* (to be read *Zrānka*), apparently its original name (Schmitt 1996, 535). This form finds a direct reflex in the Elamite (“*sir-ra-an-qa*”; Cameron 1960), Babylonian (“*za-ra-an-ga*”; Voigtlander 1978; Malbran-Labat 1994) and Aramaic (“*srng/srnk*”; Greenfield e Porten 1982) version of the same inscription.¹² Some toponyms and ethnonyms attested in some Greek sources (*Zarāngai*, *Zarangaîoi*, *Zarangianē* in Arrian and Hysidorus of Charax; *Sarāngai* in Herodotus) and in Latin (*Zarangae* in Pliny) derive indirectly from this origin. Instead of this native form, characterized by the non-Persian sound “*z-*”, in the greater part of the Greek sources (mainly those dependent on the biographers of Alexander; Schmitt 1996, 535) and in Latin variations one finds the hyper-corrected Persianized form **Dranka/Dranga* (Belardi 1960, 183) which are characterized by the Persian sound “*d-*”: *Drāngai*, *Drangé*, *Drangēné*, *Drangi(a)nē* (Ctesias, Polybius, Strabo; Diodorus; Ptolemy; Arrian; Stephan of Bysanz), *Drangae*, *Drangiana*, *Drangiani* (Curtius Rufus, Pliny, Ammianus Marcellino, Justin)¹³.

Gherardo Gnoli suggested that the form with the initial “*z-*” documented in the royal inscriptions, should have been the official one, probably belonging to the administrative lexicon already in the median period. However, the Persianized form with the initial “*d-*”, belongs exclusively to the spoken language, because it appeared for the first time in the Ctesia’s work, who lived at the Achaemenid Court where he probably heard it (Gnoli 1967, 41-46). It seems more plausible, however, that the form *Zrānka* was not a median loan word, but an eastern-Iranian form entered directly in the lexicon of the old-Persian, without any trough (Schmitt 1996, 536)¹⁴.

From the etymological point of view, the scholars’ opinion on the origin of the name *Zranka* remains still debated. While the most philologists prefer to connect it, with some forced

¹¹ The rock inscription of Darius I at Bisotun (in ancient Media, around 33 km east of Kermanshah, along the road running to Hamadan); it is perhaps the most studied among the inscriptions of the Achaemenid sovereigns which have survived to the present time (Lecoq 1997). Accompanied by a famous bas-relief (Luschey 1968; Farkas 1985), it constitutes a sort of “political manifesto” of Darius I, the founding document of his kingdom (Herrenschmidt 1976), in which the events that led him to the throne and those following, including the numerous rebellions crushed in the various provinces, among them that of 29 September of 522 a.C. and 28 December of 521 a.C. (according to the dates of the events meticulously reported in the text; Schmitt 1990, 303) are recorded.

¹² In the major part of the cases, the commemorative inscriptions of the Achaemenid kings present a trilingual version in old-Persian, Elamite and neo-Babylonian (Lecoq 1997, 38-58). A long discussion occurred around the mechanism of the “translation” of the different versions (often reciprocally different, sometimes in notable way) and regarding the “original version” of the text, particularly complex matter in the case of the inscription of Bisotun (Gershevitch 1979).

¹³ Just because of the form attested in these last sources, in the scholarly literature with the term *Drangiana* one intends to indicate the territories that in Achaemenid and Hellenistic epoch belonged to the province denominated in old-Persian *Zranka*, corresponding, approximately, to the present Sīstān.

¹⁴ The hypothesis advanced by Gnoli in 1967, nevertheless, continuous to be approved by numerous scholars, among whom Lecoq, who sustains that in the Achaemenid inscriptions “...la Drangiane y est citée sous son nom mède *Zranka* (...), ce qui semble trahir l’influence conservatrice des scribes d’Ecbatane.” (Lecoq 1997, 133).

morphology (Gnoli 1967, 42), to the Old-Persian *drayah-* (Avestic *zraiih-*, middle-Persian *zrēh*, neo-Persian *daryā*: "sea, lake"), considering the mostly lacustrine characteristics of the territory, others follow Morgenstierne's interpretation (Schmitt 1996, 536), which connects the form *Zrānka* to the neo-Persian *zaranj*: "peak of mountain", suggesting that it was referring originally to the name of the mountain dominating the whole region, i.e. the *Kuh-i Khwaja* (Morgenstierne 1932, 43).

Drangiana is mentioned in all the royal Achaemenid inscriptions in which the provinces of the Empire are listed, but its position in the sequence of the provinces¹⁵ submitted to the King of the Kings and tributary of the Imperial administration is, nevertheless, variable.¹⁶ The position occupied by every province in such enumerations echo historical events, reflecting the precise choices of the political-administrative and cultural ideological order of the dynasty, according to criteria that, unfortunately we do not understand (Junge 1941; Walser 1966, 27 ff.; Herzfeld 1968, 228-229; Herrenschildt 1976, 53 ff.; Calmeyer 1982; 1983; Lecoq 1997, 130-152).

In any case, despite the frequent mention in the royal inscriptions and in the Greek sources (these last ones very often countersigned by the presence of coarser geographical and chronological inaccuracies, Schmitt 1996, 536), the geographical limits of "Drangiana" and its historical events in Achaemenid epoch remain rather obscure. In the list of the tributes of Herodotus, the "Sarangi" are inserted, together with other populations that lived in the vast territory around the Iranian central desert - the present Baluchistan and the Persian Gulf - in the fourteenth tributary district (Histories III.93); every year they paid a tribute of 600 talents to the central administration. Herodotus himself (Histories VII.67) informs us that in the army of Xerxes that invaded Greece in 480 B.C., the contingent of the Sarangi, led by Pherendātēs, son of Megabazus, was constituted by soldiers armed with lances and bows of "median" type. The Greek author also mentioned that they wore suits of garish colours and boots tall up to the knee. According to Arrian (*Anabasis* III.25-28) and Curtius Rufus (*Historiae Alexandri Magni* VI.6-

¹⁵ In effects, the Old Persian term with which in the Achaemenid inscriptions the territories belonging to the empire are pointed out is the plural *dahyāva*, having properly the meaning of "nations" and whose singular (*dahyu-*) is, instead, better translatable as "country, district, province" (Gnoli 1993b). The relationship between the Old Persian concept of *dahyāva* and that of the "satrapie" mentioned by Herodotus is not well clear. The Greek terms "satrapia" (*σατραπεία*) and "satrap" (*σατράπης*), in fact, appear derived more properly from a median form: **xšθrapāwā*, that is "protector of the kingdom" (from a median **xšθra*: "political power, kingdom"), phonetically different from the old Persian *xšaçapāwā*, of analogous meaning (from the old Persian *xšāça*: "political power, kingdom"), frequently mentioned in the inscriptions of the Achaemenid sovereigns (Lecoq 1997, 47, 58, 130).

¹⁶ In the inscription of Bisotun, Drangiana is mentioned as the fourteenth of twenty-three "nations", after Parthia and before Areia (DB: Col. I. 12-17); in the inscription "E" of Darius I to Persepolis, instead, it, always included among the same two provinces, figures as the sixteenth in a list of twenty-six *dahyāva* (DPe: 5-18). The inscription "M" at Susa, of the same sovereign, indicates Drangiana as the thirteenth, always between Parthia and Areia, in a list in which a gap in the final part of the Old Persian version (Lecoq 1997, 239) limits to twenty-three the legible provinces (DSm: 3-11). In the inscription "A", also of Darius I, at Naqsh-e Rostam, instead, Drangiana is mentioned, this time among Chorasnia and Arachosia as the ninth of twenty-one countries (Dna: 15-30), a position analogous to the one that, according to the philological reconstruction (Lecoq 1997, 2339), should occupy also in the inscription "E" of Darius at Susa (DSe). In the inscription "H" of Xerxes (486-465 BC) in Persepolis, finally, Drangiana is mentioned after Armenia and before Parthia, to the sixth place of a list of 32 *dahyāva* (XPh 13-28). Besides, the inscription compiled in order to outfit the bas-relief on the rock-grave, probably attributable to Artaxerxes II (405-359 BC), cut in the rocky wall dominating the terrace of Persepolis (Küh-e Rāhmāt, lit. "Mountain of the Mercy"), points out (even though with a wrong syntax; Gnoli 1967, 42) as Drangian the ninth of the thirty bearers of the throne there represented (A³P: 9), after a Chorasman and before an Arachosian.

36), nearly to the end of the Achaemenid period Drangiana had to be put in only one province together with Arachosia (probably in virtue of their contiguity and the fact that Helmand constituted a natural “corridor” easily putting them in communication), from the moment that Barsaētēs, one of the accomplices of the plot of the usurper Bessos against the last Achaemenid king Darius III (336-331 BC), had the position of Satrap of Arachosia and Drangiana.

Of particular importance, finally, is the mention of the capital of the Achaemenid Drangiana, Zarin (*Zāpiv*¹⁷), on a side note of the *Persiká* of Ctesias (Gnoli 1967, 45, n. 1), in the context of the events occurring during the rule of Darius II (424-405), which led Mitridatēs, the future satrap of Artaxerxes II (405-359), to appropriate this city in an ephemeral attempt to free the territory from the authority of the central government. Cities bearing this same name and playing again the role of capital of Drangiana are also mentioned in the *Stathmoi Parthikoi* of Isidore of Charax and in the *Tabula Peutingeriana*, in reference to contexts chronologically and topographically different in comparison to the former (Gnoli 1993a, 584). Very probably, therefore, also in the Achaemenid epoch, the administrative centre of the region, also keeping the same name, had to move more than once because of the changes in the ecosystem of the region, similar to what is frequently attested in the following periods, in reference to the city of Zaranj,¹⁸ capital of the province during the Islamic period (Gnoli 1967, 104, n. 1).

An inhabited area came to the light since the first campaign of excavation of the Archaeological Mission of IsMEO. The remains of Dāhān-e Ghūlāmān, were proposed to be identified to the light of the information present in the historical sources. The alternatives were either Zarin mentioned by Isidore of Charax, or, more probably, on the base of the chronology to the epoch assigned to the site, Zarin of Drangiana mentioned by Ctesias (Scerrato 1962; 1966a, 11; Scerrato 1966b; Gnoli 1967, 103-107).

Archaeological Remains

In the complex frame of the formative processes, political nature and the real extension of the Achaemenid Empire (Boucharlat 2003; 2005), the discovery of Dāhān-e Ghūlāmān in the Iranian Sīstān basin (eastern Iran), by the Italian Archaeological Mission of IsMEO, and the related excavations that followed in the 60s of the last century, formed and still today occupy are a very important and decisive stage (Scerrato 1970; 1972; 1974; 1979).

In this particular geo-environmental context, the macroscopic architectural remains of Dāhān-e Ghūlāmān that stand out in a very characteristic and particularly suggestive way, belong to a real city. Thus was proposed, at the time of discovery, to be the old Zarin of the classical sources, the capital of the Achaemenid satrapy of Drangiana (*Zrānka* of the imperial inscriptions), and dated by U. Scerrato between the end of the sixth and the fourth century BC. They are the only “urban” remains until now known from that time in the plateau. Even the new tests conducted in the recent years by the Iranian Cultural Heritage Organisation in the city and in particular in the building no 15 seem to confirm the overwhelming importance of the site (Sajjadi 2004; 2007) (Sajjadi & Saber-Moghaddam 2004).

¹⁷ The Greek version of the name of this city reveals to what extent it had to tightly be connected to the name of the region attested in the old-Persian inscriptions (*Zrānka*).

¹⁸ The name of the capital of Sīstān in Islamic epoch, constitutes, besides, the last linguistic result of the old-Persian form *Zrānka*, attested in the Achaemenid inscription to point out the province of Drangiana.

The city lies at the foot of a terraced desert surrounding the lake Hāmūn, about 1.5 km, from east to west, long, over a width between 300 and 800 m. The numerous buildings exposed to the violent northwestern wind have, with one exception, their entrance on the southern side. To the south a natural tower called Ghābr e- Zardūšt (“Tomb of Zoroaster”) stands and, further south, there is the natural step cutting the terraced desert that gives its name to the site. The specific plans of the public buildings discovered suggest that a peripheral area of the empire had, somehow, taken the architectural principles that had already determined the distribution of the buildings in Persepolis and Pasargade, but in an urban pattern in which even the earthen buildings meet the highest accuracy in the alignments of the buildings.

If the urban character is unprecedented for the same period, the use of mud brick and the presence of a religious ritual site in the building no 3, from the beginning related to the worship of fire, reflects the tradition. The traces of this ritual are the archaeological evidence for the development and dissemination of a religious ideology, which on one hand connects to the growing role of the Zoroastrianism, and on the other tends to absorb and channel, within fixed circuits with a complex plan, irregularities and fragmentation of the ritual experience of a not yet codified religion (Genito 1986).

The urban experience of Dāhān-e Ghulāmān is the result of a synthesis between the new political unitary phase and the traditional cultural regionalization, typical of the plateau. The still preliminary analysis of the buildings allow one, then, to understand some of the fundamental criteria by which the builders were inspired. Nonetheless, from the two main phases archaeologically recognized, it is clear that a unified framework for an urban planning existed whose most significant aspects can be summarized as follows:

- 1 - An urban texture around which individual groups of buildings are arranged
- 2 - A widespread use, although not yet well documented, of channels necessary to draw on the water resources
- 3 - The strict functional distribution between public and private spaces.

The surface exploration and the excavations carried out during three years during the 60s of the last century had helped to define the layout of the city and buildings:

- 1 - A treasury, found in the building no 2 (Fig. 6), interpreted as such both on the plan, typical of a warehouse, and thanks to the discovery of a number of tin ingots and fine metal in Drangiana
- 2 - A grand religious monument, the building no 3 (Fig. 7);
- 3 - A large room, presumably for the meetings, the building no 1, not yet excavated, somewhat comparable to the *apadana* of Persepolis (Fig. 8);
- 4 - Quarters of dwellings (buildings nos 4, 6, 7) (Fig. 9);
- 5 - Building no. 15, on which new excavations were carried out.

Craft and commercial areas (Genito 1990; 2004; 2007) (Maresca 2010) were discovered south of the city, in the depression of Nāmāki, while south of the city, with the help of aerial photography a huge fence in the double wall, whose function is still obscure was recognized. This was certainly from the same period as the major centre. New perspectives on the work site

is open today after forty years from the excavation, with the first scheduled full publication of the excavation and materials of those years (Genito 2010; in press).

Conclusion

The archaeological remains of Dāhān-e Ghulāmān still remains open to a full interpretation even if the excavations there were effected long time ago. The publications of the 60s excavations seasons still await for an edition up to date; we strongly hope that in a short time it will occur with the contributions of the still alive scholars and people who worked there and of the new generation of students and collaborators. The archaeology of the Achaemenid Empire needs very much such effort for a better understanding of the relationships between its centre and the eastern periphery and the numerous urban, historical-religious suggestions arose at the time of the discovery. We are sure that it will be done!

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