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From Persepolis to Persepolis: Bestiary's Evolution after Sealings from the Achaemenid to the Sasanian Period

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Abstract: This article presents a comparative study of bestiaries in Achaemenid and Sasanian glyptics, based on seal impressions from archival corpora. A systematic comparison of animal representations is carried out within the framework of zoo-iconography. This method makes it possible to formally determine the species represented in each of the bestiaries, and leads to the study of the evolution of their representation between Classical Antiquity and Late Antiquity in Iran. The practice of zoo-iconography leads to an environmental approach that questions the evolution of the animal kingdom as depicted in the two bestiaries by comparing them with archaeozoological data.

Keywords: Iran, Antiquity, Animals Studies, Zoo-Iconography, Sealing, Glyptic

Introduction

The sealed administrative documents from the Achaemenid (550-330 BC) site of Persepolis represent by far the most important administrative corpus and seals for the Iranian Classical period. These documents are from a state agency centered on the region of Persepolis concerned by the management and distribution of local-produced commodities. The archive dates from the middle years of the reign of Darius I (509-493 BC). It is composed of 20,000 to 25,000 tablets, distinguished into tablets written in cuneiform Elamite generally sealed, tablets written in Aramaic mostly sealed, and uninscribed but sealed tablets. 4059 distinct seals have been isolated from all those sealed

tablets, which make the Persepolis archive the largest corpus of visual imagery coming from a single discreet context (Garrison 2021, 772-773).

The tablets were discovered in 1933 by a team of archaeologists of the Institute for Study of the Ancient Cultures, North Africa and West Asia (then the Oriental Institute) of the University of Chicago. They were found, for the major part, in two small rooms of a bastion in a fortification wall at the edge of the great stone terrace of the palace. Most of the tablets came at the ISAC as a loan in 1936, and were studied there particularly by Richard T. Hallock. His work is continued and expanded by the Persepolis Fortification Archive project's team.

From the site of Qasr-i Abu Nasr (a Sasanian fortress, 6 km from present-day Shiraz, in Fars), 505 bullae dated to the end of the Sasanian period (5^{th}-7^{th} centuries[1]) have been found. Bullae are clay balls on which were affixed one or more seals, and which were attached to a document or a good, as a way of authentication or protection. Traces of the seals' impression on the clay bullae are called sealings. So, from the sealings imprinted on the Qasr-i Abu Nasr bullae, 465 different seals have been identified.

The corpus of bullae from Qasr-i Abu Nasr is amongst the largest one for the Sasanian period, and it is entirely published (Frye 1973), given us access to a complete corpus with an archaeological known provenance. The reason this study focus on Qasr-i Abu Nasr bullae is that it allows the reflection to be built on a whole contextualized corpus. Of course, for the Sasanian period, other important bullae corpuses excavated on the Iranian plateau are known and currently under study: bullae from Takht-i Suleyman (Göbl 1964; Moradi and Hintze 2020; 2022; 2023), from Seyfabad (Ghassemi et al. 2018), and Tappe Bardnakoon (Khosrowzadeh et al. 2020). The site of Qasr-i Abu Nasr was excavated during three seasons from 1923 to 1935, by a team from the Metropolitan Museum of Art, led by Jospeh M. Upton, Charles K. Wilkinson and Walter Hauser (Yates 2018). What was found on the site was divided between the host country and the institution conducting the excavations. Concerning the bullae, half of them are now kept in the Metropolitan Museum of Art in New York, and half in the National Museum of Iran in Tehran. There are not much publications for the site, some preliminary reports (Hauser 1933; Winlock et al. 1934; Wilkinson 1965) and an important overview based on the MET's material by D. Whitecomb (1985). The Sasanian bullae, seals, and coins were published by R.N. Frye and P.O. Harper (Frye 1973).[2]

The site of Qasr-i Abu Nasr is a settlement with a fortress and a lower town located at a major crossroads between the North-East road toward Istkhar and the West road to Bišāpūr (Frye 1973, 9). Due to this position, it is more a focal point for the settlement in

[1] Datation suggested by Frye (1973, 48) based on the Middle Persian scripture from the sealings which is presents a late cursive form.

[2] This publication was completed by P. Gignoux's work on the Middle Persian inscriptions; see Gignoux 1975; 1985.

the valley, and less a center for provincial administration as was Shiraz, just few kilometers away (Whitecomb 1985, 15). Based on the coins excavated, the site was occupied as follows. During the late Parthian period, the fortress was erected and the lower town expanded around. There was then an important expansion period for the fortress at the end of the Sasanian period, and it was continually occupied until the beginning of the Islamic period. In the Abbasid period, the fortress was abandoned and a small settlement developed west from the site. This settlement is the only inhabited part of the site at the end of the 14th century (Whitecomb 1985, 21-22). The fortress at Qasr-i Abu Nasr is combined with a platform whose function is a little mysterious. This platform has parallels with the ones excavated at Kish by Moorey (1978), who, based on comparisons with Choche and Ctesiphon, has suggested that they are part of an administrative complex. That suggestion is followed by D. Whitecomb for the function of the platform at Qasr-i Abu Nasr, dismissing the idea of a religious function, in which case the platform would have served as a stand for a fire altar (Whitecomb 1985, 107). Qasr-i Abu Nasr was then a small administrative center, with an important military dimension, in relation both with the development of settlements in the valley and the more important center near Shiraz.

The bullae were found in two of the fortress's rooms, which were destroyed by fire, as attested by the layer of ashes on the ground. In one of the room, the bullae were piled up, suggesting that they were kept aside once being detached from a document or a good. In the other room, the bullae were scattered on the ground, so the fire should have burnt the document or good on which they were still attached (Frye 1973, 15-17). Unfortunately, the publication of the bullae does not indicate which bullae came from which room.

In both of these corpuses, animal imagery has a very important part. In the Persepolitan corpus, animal imagery is present on 93% of the cylinder-seals, and on 59% of the stamp-seals. From the sealings imprinted on the Qasr-i Abu Nasr bullae, 465 different seals have been identified. Within these 465 seals, this study focused only on the ones with an animal representation, as being the main iconographic group of the corpus: within the identified seals from Qasr-i Abu Nasr bullae, 249 seals (i.e., 53% of the corpus) present an animal image in the form of a whole animal, parts, composite or hybrid animal, and within those seals, the majority bears a single animal iconography. This iconographic theme is, along with busts and offices' seals, one of the main components of Sasanian glyptic iconography.

This study aims at identifying the species represented in both the Persepolitan corpus and the Qasr-i Abu Nasr corpus, and to compare the results in order to approach the evolution of the animal kingdom between the Iranian Classical and Late Antiquity through iconographic sources, which are one of our key data sources for understanding this evolution.

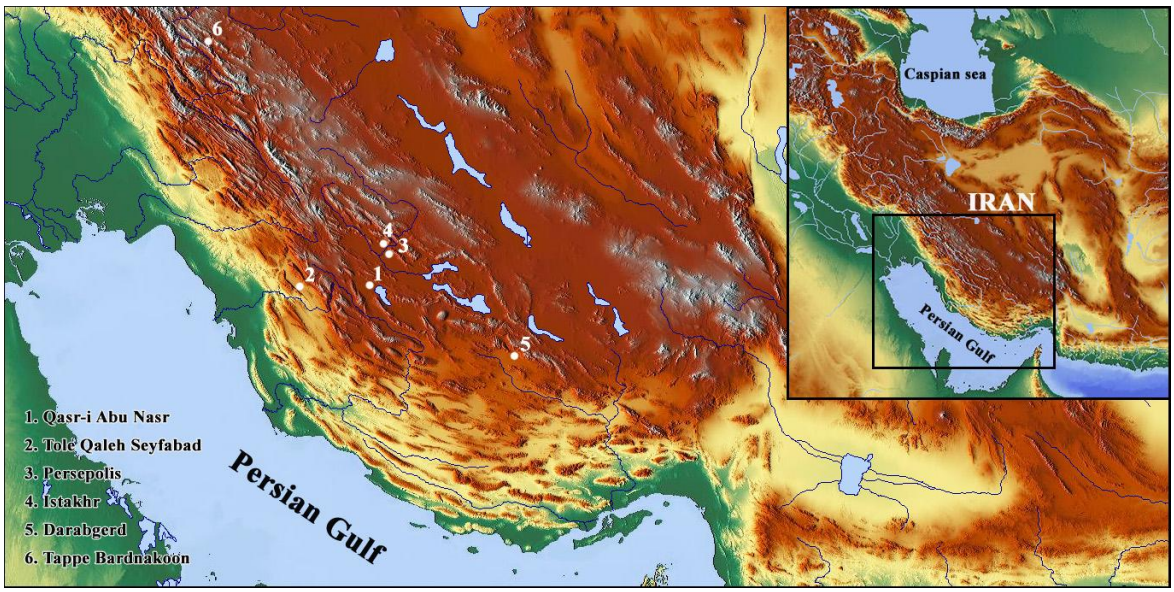

FIGURE 1. The locations of the sites discussed (courtesy Mohammad Amin Mirghaderi)

Discussion

Identifying the Species

In the following tables, we present the identified species and their characterizations in the Persepolitan corpus and in the Qasr-i Abu Nasr corpus. The taxon is attributed depending on how precisely the identification can be: sometimes we use the species' taxon, sometime a larger taxon. This taxon is always following by the word "type". This word is meant to take into account the fact that the identified morphological variations could also not be a zoological differentiation but a stylistic change, corresponding to a different hand (an individual engraver), a different workshop or a different school.

The species are listed following the alphabetic order. Animals' categories are a precious witness of the anthropo-zoological relationship (Brémont et al. 2020). They are a tool to describe and typologize the human-animal relationship (Gouabault and Michalon 2010). For the periods concerned by this study, animals' categories and classification appear in Zoroastrian sources from late antiquity[3], based on morphological similarities perhaps inspired by the Aristotelian system. This Middle Persian animals' classification belongs to the exegetic sources written at the end of or after the Sasanian period (Daryaee 2018). It is then difficult to measure the impact of those categories in the society of Late

[3] On the subject, see Poinsot 2020.

Antiquity. It could have been a knowledge reserved for a select few and which were not particularly representative of the anthropo-zoological relationships in the Iranian Late Antiquity. For the Achaemenid period, interrogating the existence of such animals' categories and classification still need to be done.

In order to not use categories that are may not be illustrative of the humans-animals links in Classical and Late Antique Iran, as well as to avoid projecting our own contemporary understanding of these relationships by using modern categories, we have chosen an order that seemed, as far as possible, neutral, meaning the alphabetical order.

TABLE 1. List of the animals' species on the Persepolis tablets and list of the animals' specie on the Qasr-i Abu Nasr bullae shared with the Persepolis corpus

Persepolis corpus	Qasr-i Abu Nasr corpus
Arabian camel type	**Arabian camel**[4] type
Asian lion type: ears visible at all time	**Asian lion** type
Auroch type: lyre-shaped horn, in front of the head and parallel to the skull; also sometimes represented with the "mane" around the head and along the shoulder; tail with hair brush at the tip	
Bactrian camel type	
Bee type	
Bharal type: wave-shaped horizontal horns; short tail	
Big-horn sheep type: semicircle-shaped horns above the skull	**Big-horn sheep** type
Canid type: square muzzle; triangular ears; straight tail	**Canid** type
Columba type: small size, peer-shaped body, short neck	***Columba*** type
Duck type: short neck at right angle with the body; pear-shaped body on an horizontal line; large flat beak	**Duck** type
Eagle type: very large wings	
Eastern cattle egret type: middle-length neck;	

[4] For the criteria of identifications for the species, see Poinsot, forthcoming.

picking on cattle back	
Felid type: square muzzle; long flexible tail without hair brush at the tip; usually no hears visible	**Felid** type
Fish indefinite type	
Goiter gazelle type: mid-length horns with slightly incurved tip at a small angle from the skull + short-size tail	**Goiter gazelle** type
Goose type: middle-length neck	**Goose** type
Hen type: Crest; rectrix feathers	
Heron type: middle-length neck; long legs	
Horse type: long hair tail; mane; long muzzle and triangle-shaped ears	**Horse** type
Ibex type: long bent horns + no goatee	**Ibex** type
Monkey type: long legs; round ears	
Ostrich type: large size; long neck; large rectrix feathers	
Pelican type: long-length large beak	
Rooster type: sickle feathers	**Rooster** type
Scorpio type	
Snake (PFS 1309s)	
Stag type: antlers	**Stag** type
Swan type: long-length neck; short beak	**Swan** type
Taurine type: crescent moon-shaped horn; tail with hair brush at the tip (toupillon)	
Vulture type: middle-length neck; hooked beak	
Wild ass type: middle-length hair tail; mane; long muzzle and long triangle-shaped ears	**Wild ass** type
Wild boar type: bristles on the back	
Wild goat type: long bent horns + goatee	

Zebu type: hump of fat[5]	**Zebu** type

The following is a list of the animals' species on the Qasr-i Abu Nasr bullae not shared with the Persepolis corpus:

- **Bear** type[6],
- **Cheetah** type,
- **Chinkara gazelle** type,
- **Crane** type,
- **Guinea fowl** type,
- **Leporid** type,
- **Mustelid** type,
- **Oryx** type,
- **Partridge** type,
- **Peacock** type,
- **Pheasant** type,
- **Raptor** type,
- **Rodent** type.

We arrived to a total of 35 identified species within the Persepolitan corpus, for a total of 4059 identified individual seals. For the Qasr-i Abu Nasr corpus, we reach a total of 24 identified species for a total of 457 unique seals. Comparatively to the number of unique seals in each corpus, the number of represented species is very scarce. Here are clearly two bestiaries, in the understanding of a delineated animal iconography, chosen among the wide possibilities offered by the natural environment. The scope of this study is not to interrogate the choices made in cultural terms, but rather to question how the traces of those choices, i.e. the animals' images, can be witnessed of the natural environment and its evolution from the Achaemenid to the Sasanian period.

Native and non-Native Fauna

After identifying the species that are part of the Persepolitan and Qasr-i Abu Nasr seals' corpuses, it is interesting to pinpoint, among them, the ones that are natives from the Iranian plateau and the Mesopotamian plain, from the ones native outside of these borders. We indeed consider the Iranian plateau and the Mesopotamian plain as the geo-political heart of both the Achaemenid and later the Sasanian kingdom. So these two regions are, for a long duration of time, the familiar environment of the people living in those

[5] It is not entirely sure if it is a hump of fat. It may be a representation of the shoulder protruding when the animal is grazing, as it can be founded on other animals' representations in the corpus (see PFUTS 0198 with that same protuberance on a stag).

[6] For the criteria of identifications for the species, see Poinsot, forthcoming.

kingdoms. Thus, when examining the role of the natural environment in the development of a bestiary and how the evolution of the bestiary from Classical to Late Antiquity reflect changes in the natural environment, it is important to distinguish elements will be considered part of a familiar environments, and what will be considered part of unfamiliar or exotic environments.

Native Fauna

a) In the Persepolitan corpus:

Asian lion (Firouz 2005, 65), auroch (Digard 1990), Bactrian camel (Bulliet 1990), bee (Digard 2019), big-horn sheep (Firouz 2005, 87-91), *Columba* (Firouz 2005, 151-152), duck (Firouz 2005, 125-126), Eastern cattle egret (Firouz 2005, 119), goiter gazelle (Firouz 2005, 86), goose (Firouz 2005, 123-124), hen (Balland and Digard 2011), heron (Firouz 2005, 119), horse (Balland and Digard 2011), ibex (Firouz 2005, 86-87), pelican (Firouz 2005, 116), rooster (Balland and Digard 2011), scorpio (Anderson 2012), stag (Firouz 2005, 82-84), swan (Firouz 2005, 123), *Taurine* (Balland and Digard 2011), vulture (Firouz 2005, 128-132), wild ass (Firouz 2005, 79), wild boar (Firouz 2005, 81), wild goat (Firouz 2005, 86-87).

b) In the Qasr-i Abu Nasr corpus:

Asian lion, bear (Firouz 2005, 74-75), big-horn sheep, cheetah (Firouz 2005, 60-61), chinkara gazelle (Firouz 2005, 85), *Columba*, crane (Firouz 2005, 135-136), duck, goiter gazelle, goose, horse, ibex, leporid (Firouz 2005, 103-104), mustelid (Firouz 2005, 69-72), patridge, pheasant, raptor, rodent (Firouz 2005, 134 for both patridge and pheasant, pp. 127-132 for raptors, 91-103 for rodents), rooster, stag, swan, wild ass, zebu.

Non-Native Fauna:

a) In the Persepolitan corpus:

Arabian camel (Arabian Peninsula; Bulliet 1990), bharal (Himalaya Mountains), ostrich (Africa), zebu (India; Zhang et al. 2020, 640).

b) In the Qasr-i Abu Nasr corpus:

Arabian camel (Arabian Peninsula), Guinea fowl (Africa; Théwis et al. 2005, 61), oryx (Africa), peacock (India).

Not Identifiable

a) In the Persepolitan corpus:

canid, felid, fish, snake

b) In the Qasr-i Abu Nasr corpus:

canid, felid

In both the Persepolis and Qasr-i Abu Nasr seals, the bestiary is built first on a familiar environment. In the Persepolis corpus, 70% of the species are native to the Iranian plateau and the Mesopotamian plain (24 species on 34 identified), while they represent

78% of the Qasr-i Abu Nasr corpus (22 species on 28 identified). From this familiar environment, certain species disappear between the Achaemenid corpus and the Sasanian one: auroch, bee, hen, heron, pelican, and vulture. The following species are attested in the Persepolitan corpus as well as on seals from the Sasanian period that do not belong to the Qasr-i Abu Nasr corpus: eastern egret cattle (Gyselen 1994, 33.46, and pl. XXXVI), scorpio[7], wild boar[8], wild goat (see, for instance, Gignoux and Gyselen 1987, PIT 11). On the other hand, a certain number of species that belong with the familiar environment of the Iranian plateau and the Mesopotamian plain exist only in the Sasanian corpus: bear, cheetah, crane, leporid, mustelid, patridge, pheasant and rodent.

Interestingly enough, in the two corpuses, the non-native species are both form the eastern (India) and western (Arabian Peninsula, Africa) lands of the Achaemenid and Sasanian kingdoms, as a legacy of the Persian kingdoms cross-influences and links with their neighbors (Dandamayev 1986; Callieri 2012a; 2012b).

Evolution of Animals

Mane and Maneless:

Within the Persepolitan glyptic, there are two kinds of lions. One kind has a very short mane or is even manelesse, and one kind has a more visible mane. The question is, are those two kinds of mane standing for two different lions' subspecies?

FIGURE 2. silhouette of a maneless lion from, detail of the seal PFUTS 0571s (drawing by the author)

FIGURE 3. Silhouette of a lion with a more visible mane from seal PFUTS 0546s (drawing by the author)

The link between the Asian lion (*pantheraleo persica*), a subspecies characterized by a very short mane or even no mane at all, and the short mane/maneless lion, represented in the ancient Iranian corpus, has been made in a recent study (Potts 2021): what was known as the Guennol lioness was identified as a possible male Asian lion. Based on that study, we consider that the short mane/maneless lions of the Persepolitan corpus are Asian lion. So could it be possible that, in this corpus, the lions with more visible mane are a different subspecies, the African lion known for it generous mane?

[7] For example on bullae form Takht-e Suleiman; see Göbl 1964, pls. 12, 14, 32.

[8] For example, on bullae from the A. Saeedi collection, see Gyselen 2007, I/78, I/79, I/122.

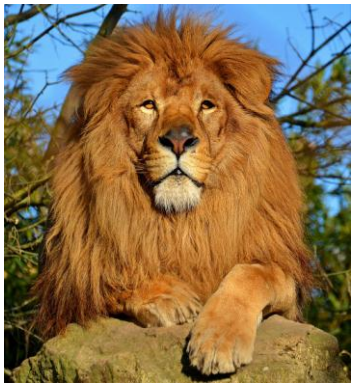

FIGURE 4. African lion (Clément Bardot, CC BY-SA 4.0, via Wikimedia Commons)

FIGURE 5. Asian lion in the National Park of Gir, India (Bernard Gagnon, CC BY-SA 3.0, via Wikimedia Commons)

We are more certainly here in front of two different "hands" tradition for representing the same lion subspecies. First, in terms of zoo-geography, the African lion was never found outside of Africa. Second, what distinguished most specifically the Asian and the African lion is indeed the thickness of the mane, which, for the Asian lion, let the ears being seen at all time (Guintard and Spruyt, forthcoming). And finally, even if the Asian lion has undeniably a shorter mane than his African cousin, the thickness of a lion mane is not absolutely definitive and can change depending on multiple factors including, weather: if the temperature is too low the Asian lion can grow a bigger mane as a protection again the cold; health: the better the health of an individual is, the thicker his mane can be (Aragon, forthcoming). The Asian lion can thus has a thick mane, close to what can be found on the African lion. The only difference is that his ears point out at all time.

Due to the way of representing the mane in the Persepolitan corpus, either absent or at most a line of little triangles, we consider that all the lions of the Persepolitan corpus represent Asian lion. The maneless shape or the line of little triangles shape could be dependent of a hand (workshop, school). It also could be dependent of the model known by the engraver, and if this model were in good health or not.

In the Qasr-i Abu Nasr corpus, as to our knowledge, in the whole of the corpus from the Sasanian period, the lion is always depicted with a quite thick and voluminous mane, but the ears are most of the time visible, indicating an Asian lion. We consider thus that, even if the mane is more thick and voluminous in the Sasanian corpus, the lion subspecies represented is still an Asian lion, as in the Achaemenid corpus. The manner of drawing a thick and voluminous mane could be a witness of the influence of the roman glyptic on the Iranian glyptic during the Sasanian period (see Faraone 2011, pl. 10; Gesztelyi 2022, 175, nos. 51 and 52).

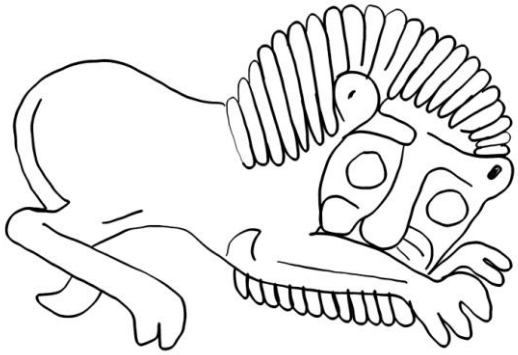

FIGURE 6. Silhouette of a lion, drawing after seal D.37 from Qasr-i Abu Nasr (Frye 1973)

Auroch, Zebu and Taurine:

The present-day domestic cattle are distributed into two main groups corresponding to a clear dichotomy in the mitochondrial DNA: zebu recognizable as they are humped, and taurine, hump-less. These two main groups descend from the same *Bos primigenius*, or auroch, and would be a consequence of two distinct domestication events, and DNA study pinpoint the most recent common ancestor for two zebu clusters from the Neolithic (3rd millennium BC; Baig et al. 2005, 38-40). The taurine is widespread in Europe and America, while the zebu is found in Asia, from the Indian Peninsula to West Asia. A recent study on ancient DNA has shown a rapid and widespread introgression of zebu in West Asia from the Indus valley at the onset of the Meghalayan age (starting point at 2300 BC; Verdugo et al. 2019, 173). This means that, by the Achaemenid period, the zebu should have been well widespread into the cattle.

FIGURE 7. *Bos taurus* (taurine) (Michael Schmid, CC BY-SA 3.0, via Wikimedia Commons)

FIGURE 8. *Bos taurus indicus* (zebu)[9]

[9] https://en.m.wikipedia.org/wiki/File:Bos_taurus_indicus.jpg

The bull is a very common animal in the Achaemenid glyptic. Interestingly enough, the zebu has very few occurrences in the Persepolitan corpus, and for some of them the identification to a zebu is even not absolutely certain. It appears that, in this corpus, aurochs are preferred for the representation of a bull, with their very distinctive lyra-shape horns. Taurine are also represented, with their crescent-shape horns, and perpendicular to the skull.

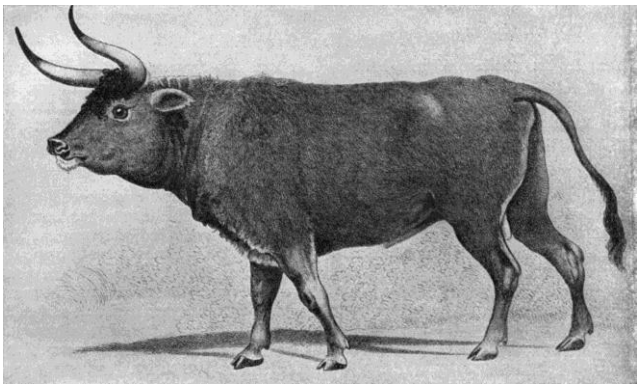

FIGURE 9. *Bos primigenius* (auroch)[10]

In the architectural decoration of Persepolis, representations of the bull are numerous, mostly in the motif of the lion-bull combat, which occurs twenty-seven times. In this motif, the bull has been rightly identified as a *Bos primigenius,* or an auroch, based on its musculature. The lyra-shaped horns are also a distinctive feature of this species. The zebu appears just once at Persepolis, on the panels of the Apadana, being part of the tribute procession as an offering to the Achaemenid king (Sathe 2012, 78-80).

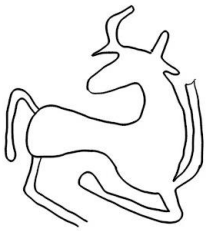

FIGURE 10. Silhouette of a *Bos taurus* (taurine), stamp seal from the tablets of Persepolis (PFUTS 0233s, drawing by the author)

FIGURE 11. Silhouette of a *Bos primigenius* (auroch), stamp seal from the tablets of Persepolis (PFUTS 0482s, drawing by the author)

On the other hand of the scale time, in the Sasanian corpus, the zebu is the only *bos* represented in the glyptic corpus. It is not clear if by this period the aurochs were still attested on the Iranian plateau and the Mesopotamian plain: aurochs' bones have been

[10] https://www.thoughtco.com/auroch-1093172

found on Neolithic and Calcolithic sites in Khuzestan and Fars, and by the 13th century their territory is limited to Eastern Europe and parts of Central Asia. There is so a possibility for the zebu and the auroch to continue to coexist during the Sasanian period, even if by this period zebu is now well implanted into the cattle and also completely integrated into the bestiary.

Conclusion

In terms of animal imagery, both the Achaemenid corpus of Persepolis and the Sasanian one of Qasr-i Abu Nasr show shared features. First, the identification of the species displays, for these two periods, a quite limited number of species chosen to be part of the glyptic iconography, in comparison to the number of unique seals identified. Second, the chosen species in the two corpuses are mainly from a familiar environment, i.e., the Iranian plateau and the Mesopotamian plain. The few species that can be considered exotic are from regions that had close relationships with the Achaemenids and then the Sasanians: Arabian Peninsula, Africa, and India. The species, being from a familiar environment or from an exotic environment, are not absolutely identical at each point of Iranian antiquity. Indeed, we can identify a group that is in use from Classical to Late Iranian antiquity: Asian lion, big-horn sheep, gazelle, ibex, scorpio, stag, wild boar, wild goat.

It is possible to see a zoological evolution between the species belonging to the Persepolitan corpus and the one belonging to the Qasr-i Abu Nasr corpus. We have thus interrogated two changes. The first regards the lion, which is represented with a small mane or no mane at all in the Achaemenid corpus, and with a thick mane in the Sasanian one. This was actually not a zoological evolution, since both those lions are, on a morphological point of view, Asian lion; but more a stylistic evolution that could have been due to the influence of Roman glyptic. Another interesting change is the one that sees the auroch and taurine being the major bull's representation in the Achaemenid corpus, to their disappearance in exclusive favor of the zebu in the Sasanian corpus. A zoological parallel can be made, with the large widespread of zebu into near eastern cattle around 2300 BC. So by the time of the Achaemenid kingdom, it was well settled but the iconography did not yet recorded that environmental change.

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