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ANIMAL EXPLOITATION AT TELL EL-HERR (SINAI, EGYPT) DURING PERSIAN TIMES: FIRST RESULTS

Louis Chaix¹

Abstract

The site of Tell el-Herr is situated in the northern part of the Sinai, on the eastern edge of the lagoon area. The tell comprises an important stratigraphy covering the Achaemenid and Persian periods until Roman times. The fauna from the oldest levels, dating around 500 to 400 BC, is briefly discussed. Domestic mammals are dominant, with a large number of caprines when cattle is poorly represented. Pig, horse, donkey, dromedary and dog are attested. Wild fauna includes hippo, antelopes and gazelles in very small numbers. Bird remains are well represented, with a dominance of aquatic taxa. Many of the fish bones indicate the exploitation of brackish waters. Various species of marine shells are present. Many specimens were used as beads or ornaments.

Résumé

Le site de Tel el-Herr est situé au nord du Sinaï, sur la partie est de la zone du Lagon. Le tell a livré une importante stratigraphie recouvrant la période achéménide et Perse jusqu'à la période romaine. La faune des périodes anciennes aux alentours de 500 à 400 BC est très peu représentée. Les mammifères domestiques sont dominants avec une grande part de caprinés alors que le bœuf est peu représenté. Le porc, le cheval, l'âne, le dromadaire et le chien sont attestés. La faune sauvage est constituée de rares ossements d'hippopotame, d'antilopes et de gazelles. Les oiseaux sont bien représentés avec une prédominance des taxons aquatiques. Le nombre important de restes de poissons indique un pêche en eau saumâtre. Les mollusques sont représentés par plusieurs espèces. Plusieurs d'entre eux étaient utilisés pour la fabrication de perles et de parures.

Key Words: Persian and Achaemenid periods, Sinai, Tell el-Herr, Animal exploitation

Mots Clés: Périodes achéménide et perse, Sinaï, Tell el-Herr, Exploitation des animaux

Introduction

The site of Tell el-Herr is part of an important salvage project being carried out by the Egyptian Antiquities Service (Dr. Mohammed Abd el-Maksoud) and the University of Lille III (Prof. Dominique Valbelle). This project concerns several archaeological assemblages, which are threatened by the construction of the Peace Canal and the large-scale developments around the whole of the Mediterranean coast of the Sinai (Valbelle and Bonnet 1998).

The tell is located close to the ancient city of Pelusium, at a distance of 25 km from the modern town of El Kantara, in the north-western part of the Sinai. It is an artificial hill, with a diameter of approximately 200 m, and a height of 10 m. Two fortresses were discovered, as well as several other buildings, which demonstrated that the site was occupied continuously from the fifth c. BC to Ptolemaic times (Valbelle 1987; Louis and Valbelle 1988). Inside the stronghold, a religious quarter, a kitchen complex, and a large building of unknown function were excavated (Defernez 1998).

The material

Most of the animal bones described in this paper were found inside zones devoted to domestic activities, and date from the fifth c. BC, which corresponds to the 25th Achmenide dynasty. The material presented here was recovered during research campaigns in 1995 and 1998. In general, bone preservation was good and surface erosion was slight. Many remains had burn marks.

Table 1 presents the overall results of this study with 2,555 bones studied. Among these, 2,324 bones could be attributed either to a species or to an animal group, representing 90.6% of identified remains. This high percentage is due to excellent bone preservation. It seemed appropriate to separate

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Table 1. Faunal composition of the Persian levels.

| SPECIES | N | % |
|--|-------------|-------------|
| Cattle (<i>Bos taurus</i>) | 79 | 0.03 |
| Caprines (<i>Ovis</i> sp./ <i>Capra</i> sp.) | 434 | 1.80 |
| Pig (<i>Sus domesticus</i>) | 14 | 0.01 |
| Horse (<i>Equus caballus</i>) | 1 | - |
| Donkey (<i>Equus asinus</i>) | 22 | 0.01 |
| Equid unident. | 1 | - |
| Dromedary (<i>Camelus dromedarius</i>) | 18 | 0.01 |
| Dog (<i>Canis familiaris</i>) | 29 | - |
| Carnivore unident. | 2 | - |
| Hippopotamus (<i>Hippopotamus amphibius</i>) | 1 | - |
| Antelope | 18 | 0.01 |
| Gazelle | 1 | - |
| Cervid unident. | 3 | - |
| Birds (Aves) | 133 | 0.06 |
| Ostrich (<i>Struthio camelus</i> , eggshell) | 9 | - |
| Fishes (Pisces) | 1510 | 6.30 |
| Snails (Mollusca) | 38 | 0.02 |
| Total 1 | 2313 | 90.6 |
| Fragments Cattle size | 104 | |
| Fragments Caprines size | 24 | |
| Indeterminate fragments | 114 | |
| Total 2 | 242 | 9.4 |
| Total general | 2555 | |

Table 2. Mammals from the Persian levels.

| SPECIES | N | % |
|-----------------------|------------|-------------|
| Caprines | 434 | 63.1 |
| Cattle | 79 | 11.5 |
| Donkey | 22 | 3.2 |
| Dog | 29 | 4.2 |
| Dromedary | 18 | 2.6 |
| Pig | 14 | 2.0 |
| Horse | 1 | 0.1 |
| Total domestic | 597 | 96.1 |
| Antelope | 18 | 2.6 |
| Cervid | 3 | 0.4 |
| Hippopotamus | 1 | 0.1 |
| Gazelle | 1 | 0.1 |
| Total wild | 23 | 3.9 |
| Total general | 620 | |

the mammals from the other groups in this study, namely, fish and molluscs; in consequence, the latter shall be presented separately.

The mammals are presented in Table 2. Domestic species dominated, comprising 96.1% of the total and wild mammals representing only 3.9%. As for the proportions of the different domestic species, caprines dominated, with 63.1% of the remains, followed by cattle (11.5%). Other species were present in much lower proportions.

Caprines

Sheep (*Ovis aries*) and goat (*Capra hircus*) remains were discovered. Sheep dominated, with 92% of specifically attributed remains. Both sexes had curving horns. Sheep were tall, with withers heights estimated at 75 cm (Teichert 1975). They were similar to African forms located in the Nilotic area, which are characterised by long limbs, especially around the metapodials (Chaix and Grant 1987). Goat remains were rare, and it was not possible to describe these animals precisely. All that could be said of these remains was that the goats had scimitar-shaped horns. The slaughter curve of caprines showed that young and very young animals predominated with old individuals being very rare (Fig 1). This kind of distribution is typically associated with butchering activities. Several foetal bones were also discovered. There were no cutmarks on them and, thus, it is difficult to elucidate the reason for their presence.

As for the distribution of skeletal elements, every single bone was present, which is an argument for local exploitation. Many anthropic marks were visible on the caprine bones, reflecting different kinds of operations. The animals must have been slaughtered, as transversal striae were observed on the ventral side of two atlas. Skinning activities left transversal marks on the carpals and tarsals, as well as on the metapodials. The external surface of the mandibular ramus bore horizontal striae, indicating that the masseter muscles had been cut in order to disarticulate the mandible. Numerous disarticulation marks were visible on the scapulae as well as on the humeral distums and the proximal parts of the forearm bones. This was also the case for the coxal acetabulum and the distal part of the tibia. A

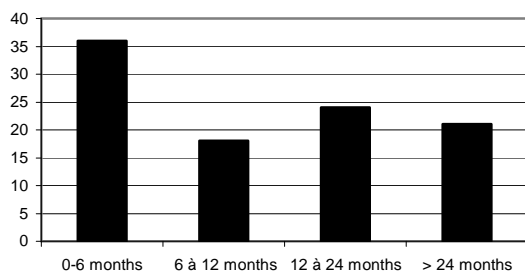


Fig. 1. Caprines: age structure.

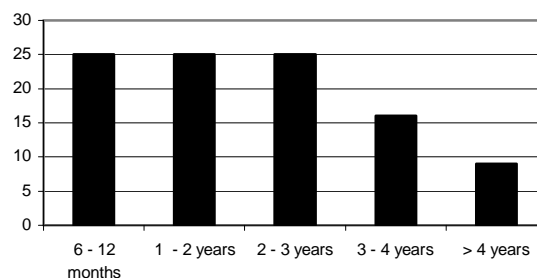


Fig. 2. Cattle: age structure.

small number of transverse marks on the vertebral bodies revealed that the vertebral column was segmented into several pieces. Marks on some external rib surfaces were attributed to flesh removal. Finally, typical saw marks were discovered on a ram horn core. These striations may be linked to the skinning process, or they may represent traces from the extraction of horn sheaths, which were used as a raw material (Chaix 2000a).

Cattle (Bos taurus L.)

Cattle represented only 12.9% of the domestic animals. The cranial remains were too fragmented for the horns to be described. A small number of measurements revealed that the Tell el-Herr cattle were robust, with a withers height of 1.4 m. This makes them similar in size to tall Nile Valley cattle, such as those discovered at the site of Kerma, Sudan (Chaix 1994).

Age estimation (Fig. 2) indicated that very young calves, aged less than six months, made up 15% of these remains. As for the remainder, 25% of these animals were aged between six months and one year, 25% were young beasts between 1 and 2 years of age, and 25% were aged between 2 and 3 years. Nine percent of the cattle were over 4 years old. To sum up, more than 65% of the total was made up of very young and young beasts, suggesting that most of these animals were bred for their meat. However, the presence of individuals aged over 4 years may point towards other uses (such as milk or reproduction).

Every single skeletal element was present, indicating that the animals were killed locally. Butchering marks were all due to meat quarter disarticulation. A rib with a polished end had been used as a spatula. Finally, a thoracic vertebra had striations on it associated with arthrosis, namely, an eburnated articular surface.

Donkey (Equus asinus L.)

Donkey made up 3.8% of the remains. A small number of measurements indicated that the individuals were small-sized, with a withers height of approximately 1.10 m. All the bones were from adult individuals. The autopodium and the vertebral column made up the majority of the skeletal remains. Cranial bones were rare. Several butchering marks were observed. Some were linked to disarticulation, such as those visible on a femur distum and a metatarsal, whereas others (on the external surface of the ribs and on the spinal process of the scapulae) were marks linked to flesh removal.

Dog (Canis familiaris L.)

There were twenty-nine dog remains. Most of them belonged to a foetus found articulated in a survey trench. Unfortunately, it was not possible to arrive at a morphological description based on these remains. No anthropic marks were observed.

Dromedary (Camelus dromedarius L.)

Some of the bones which were studied belonged to a dromedary. They represented at least two animals, an immature individual and an adult. The vertebral column made up most of the remains. Butchering marks were observed on the mandible, and were no doubt caused by skull removal in order to extract the tongue. During historic times, the dromedary seems to have been linked to Semitic tribes, and in particular to the Arabs (Mason 1984).

Pig (Sus domesticus Br.)

Pig remains consisted of 14 bones, belonging to at least three individuals, including a new-born, a 6- to 7-month old piglet, and an adult. Measurements indicated a large-sized beast, almost the same size as a boar. All the skeletal elements were present, indicating local slaughter. Disarticulation marks were observed on a tibia distum, while other marks on the ribs were linked to meat removal.

Other animals

The presence of horse (*Equus caballus* L.) was attested by a carpal bone (the scaphoid).

As mentioned above, wild fauna represented only 3.9% of the mammals. Antelope, surely including the hartebeest (*Alcelaphus buselaphus*), made up most of these remains. This animal's remains were present at this site up to Roman times (Chaix 2000b). A cervid was also discovered, probably representing the Mesopotamian fallow deer (*Dama mesopotamica*), as well as the bones of some small-sized gazelles. Finally, the hippopotamus (*Hippopotamus amphibius*) was represented by a permanent molar. Although the geographic distribution of this large pachyderm originally covered the whole of eastern Sinai up until the Iron Age (Uerpmann 1987), nowadays, it is found only in Africa.

The Persian levels at Tell el-Herr were rich, not only in mammals but also in bird, fish and mollusc remains. These groups are still under study, so that the results are preliminary.

Birds included representatives from different families such as the Ciconidae, with some stork remains, the Anatidae (goose and teal), the Laridae (herring-gull and kittiwake) and the Scolopacidae (including snipe, godwit and curlew). All these birds indicated that lacustrine and marshy zones close to the site were exploited. Butchering marks were rare.

Fish bones made up more than 63% of the total of identified bones (cf. Table I), indicating that fishing was an important activity. However, this number must be put into perspective, as the individuals were mainly small in size, and were consumed as a complement to the meat provided by mammals. The species were mostly fresh-water or brackish-water fish, especially catfish (*Clarias* sp.). Cutmarks were observed on some specimens. A small number of marine fish were present, primarily Scaridae (parrotfish).

Molluscs were represented by marine species, including the genus *Tridacna*, *Ostrea*, *Conus*, *Nassa* and *Cypraea*. The representatives of the latter genus seem often to have been used as beads, as they were frequently perforated. Fresh-water molluscs (*Unio* sp. and *Pila* sp.) were also found.

Finally, some ostrich eggshell fragments were recovered. They were probably used to make discoid beads.

Conclusion

In conclusion, the preliminary study of the fauna from the Persian levels at Tell el-Herr showed that domestic animals made up an important part of the diet of the tell inhabitants. Among these animals, cattle and caprines were the main resources. This diet was complemented by occasional wild species, as well as by fishing activities, which turned out to be quite developed. The study of remains from subsequent research campaigns will enable us to analyse the fauna diachronically, from the 5th c. BC levels up to Ptolemaic times, and to describe more precisely animal exploitation and the types of breeding which were practised.

References

- Chaix L., 1994. Das Rind: eine wichtige und allgegenwärtige Komponente der Kerma-Kultur (N Sudan, zwischen 3000-1500 v. Chr.). *Forschungen und Berichte zur Vor-und frühgeschichte in Baden-Württemberg* 53: 163-167.
- Chaix L., 2000a. La corne, du Néolithique à l'Age du Bronze. In: *Des ivoires et des cornes dans les Mondes Anciens (Orient-Occident)*. Collection de l'Institut d'Archéologie et d'Histoire de l'Antiquité, Université Lumière-Lyon 2, vol. 4, pp. 29-31.
- Chaix L., 2000b. La faune du fort romain. In: Valbelle D. & J.Y. Carrez-Maratray (eds), *Le camp romain du Bas-Empire à Tell el-Herr*. Paris, Ed. Errance, pp. 228-231.
- Chaix L. and A. Grant, 1987. A study of a prehistoric population of sheep (*Ovis aries* L.) from Kerma (Sudan) - Archaeozoological and archaeological implications. *Archaeozoologia* 1/1: 77-92.
- Defernez C., 1998. Le Sinäi et l'Empire perse. In: Valbelle D. & C. Bonnet (eds), *Le Sinäi durant l'Antiquité et le Moyen-Age. 4000 ans d'histoire pour un désert*. Paris, Ed. Errance, pp. 67-74.
- Louis E. and D. Valbelle, 1988. Les trois dernières forteresses de Tell el-Herr. *Cahier de Recherches de l'Institut de Papyrologie et d'Egyptologie de Lille* 10: 61-71.
- Mason I.L., (ed) 1984. *Evolution of domesticated animals*. London & New-York, Longman.
- Teichert M., 1975. Osteometrische Untersuchungen zur Berechnung der Widerristhöhe bei Schafen. In: Clason A.T. (ed), *Archaeozoological Studies*. Amsterdam, New-York, North Holland Publishing Cy, pp. 51-69.
- Uerpmann H.-P., 1987. The ancient distribution of ungulate mammals in the Middle East. *Beihefte zum Tübinger Atlas des Vorderen Orients*, Reihe A, No. 27. Tübingen.
- Valbelle D., 1987. Entre l'Egypte et la Palestine, Tell el-Herr. *Bulletin de la Société Française d'Egyptologie* 109: 24-38.
- Valbelle D. and C. Bonnet (ed), 1998. *Le Sinäi durant l'Antiquité et le Moyen-Age. 4000 ans d'histoire pour un désert*. Paris, Ed. Errance.