Exploitation of Secondary Products at the Phoenician Site of Teatro Cómico, Cádiz (Spain)

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Abstract:

The macrovertebrate zooarchaeological analyses carried out at the Phoenician site of Teatro Cómico (Cádiz) show a predominance of mixed herds of sheep and goat. The patterns derived from the study of the mortality profiles seem to suggest the importance of wool and milk production. In addition to sheep and goat, we have also documented the presence of bovids, suids, equids, dogs, and cats. Animal remains can provide further information about the socio-economic activities taking place at the site. The scarce number of remains from wild species, such as deer, suggests that the exploitation of wild resources was rather limited. Lastly, it is also worth highlighting the presence of Hexaplex trunculus*, used in the production of purple dye. Together, the evidence presented in this paper indicates that secondary products had an important socio-economic role at the Teatro Cómico site, and that both trading and production were important economic dimensions of the Phoenician world.*

Key words: *Teatro Cómico, Phoenicians, Zooarchaeological Analysis, Economy, Textile Production.*

Resumen:

Los análisis zooarqueológicos de los macrovertebrados hallados en los distintos períodos del asentamiento urbano de época fenicia del yacimiento del Teatro Cómico (Cádiz), han mostrado un predominio de rebaños mixtos de ovejas y cabras, los cuales están relacionados según sugieren los patrones de mortandad con la producción de leche y lana. Junto a los ovicápridos en el yacimiento del Teatro Cómico hay otros animales domésticos como bóvidos, suidos, équidos, perro y gato, los cuales también nos han mostrado evidencias de su utilización en diferentes actividades. Junto a ellos han aparecido algunos restos efímeros de especies silvestres, como el ciervo, que demuestran que no fueron recursos muy aprovechados. Junto a estas evidencias destaca la presencia de Hexaplex trunculus *para producir púrpura, lo que hace del Teatro Cómico un lugar singular dedicado a múltiples funciones artesanales y comerciales.*

Palabras clave: *Teatro Cómico, Fenicios, Análisis Zooarqueológicos, Economía, Producción Textil.*

INTRODUCTION

To date, zooarchaeological analyses at Phoenician sites have been rather limited in relation to the large number of excavated sites, even though such studies have been conducted for a long time (Martín Roldán 1959). This situation has already been noted by Riquelme (2001) and other researchers (Uerpmann and Uerpmann 1973; Morales *et al*. 1994; 1995; Montero 1999). We would like to stress that studies focusing on the uses and economic significance of particular animal species are even less common. In this paper, we aim to provide a new perspective for Phoenician zooarchaeology, focusing on the specific economic activities in which animals were involved. We consider primarily the production of secondary products from sheep and goats or bovids.

THE TEATRO CÓMICO SITE

The archaeological site of Teatro Cómico is located in the old town of Cadiz (Andalusia, Spain). Topographically, it corresponds with the highest point of the ancient Erytheia, the smaller island of the former Gadeiras archipelago, and where many researchers have located the early urban settlement of Gadir (Fierro 1979; 1983; 1995: 101-116; Ramírez 1982: 63, 85, 104, 140; Escacena 1985: 43) (fig. 1).

Local archaeological excavations, sponsored since 2002 by the Cadiz municipality, have established ten phases within the occupation sequence, ranging from the ninth century BC to the present day (Gener *et al*. 2012; Zamora *et al*. 2010) (fig. 2). We shall focus on the first four phases, relating to the Phoenician occupation from the ninth to the sixth century BC.

The Period I phase – known as Late Bronze Age/ Phoenician I – dates to the early ninth century to around 820 BC. It is rather poorly known, documented mainly through test pits. Although they have not provided much information about building techniques, they offered some interesting insights into early economic activities, such as craft production. A rounded structure, which yielded a large amount of *Hexaplex trunculus* shells, was found in one of these test pits (fig. 3), which may suggest *in situ* purple dye production, according to Gener *et al*. (2014; see also García Vargas in this volume).

The Period II phase is known as Phoenician A (c. 820/800 – 720 BC). This phase is better known, with a series of buildings arranged into three structural groups, articulated along two streets where eight houses or domestic units can be identified. Their spatial relationship changed throughout the period, with habitat restructurations reflected in changes of the street layout.

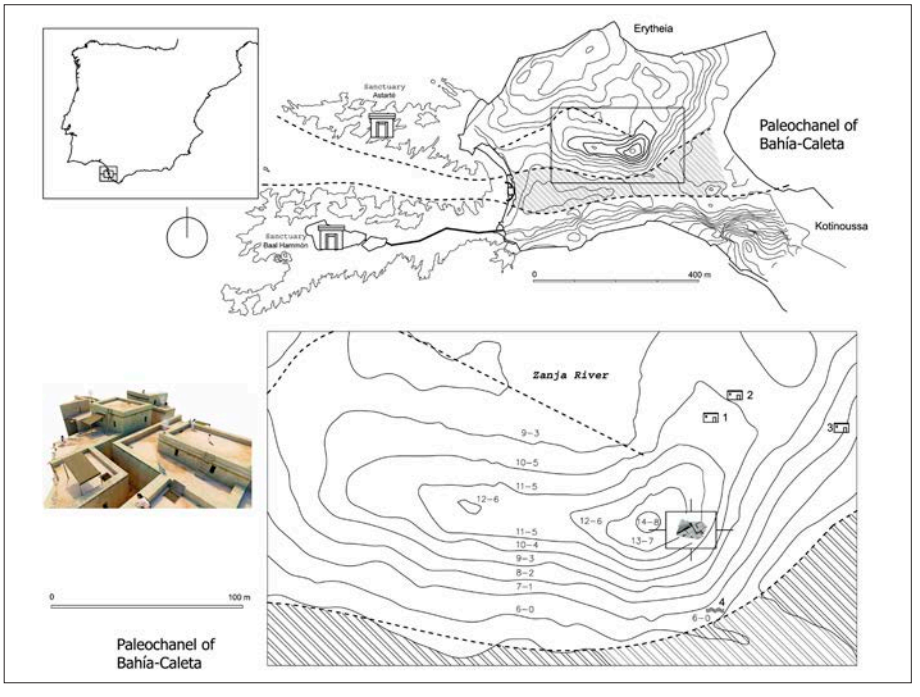

Fig. 1: Above: the location of ancient Cadiz and its topography along the banks of the palaeochannel. Below: Topographical location of the Teatro Cómico site 1 (J. Mª G.).

Ocupation Times			
Phase	Period	c.m.s.n.m.[1]	Chronology
I	Late Bronze / Phoenician	5.50	9th c. BC - 820/800 BC
II	Phoenician A	6.80/5.50	820/800 - 720 BC
III	Phoenician B	7.78	8th - 6th c. BC
IV	Phoenician C	8.09	6th c. BC
V	Roman A	9.29	3rd c. BC - 1st c. AD
VI	Roman B	10.45/8.05	1st c. BC - 2nd c. AD
VII	Roman C	8.16	AD 360 - 6th c. AD
VIII	Middle Ages	11.30	11th - 13th c. AD
IX	Modern / Contemporary	12.20	18th c. AD - AD 1885
X	Contemporary	11.30	1885 - 1995

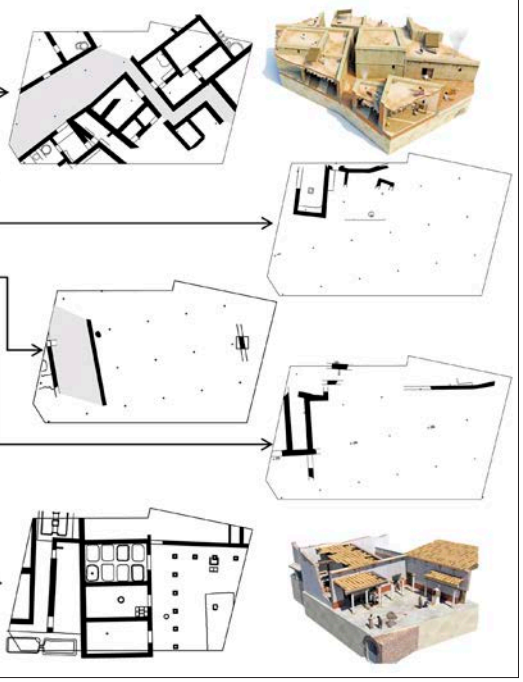

Fig. 2: Occupation periods documented at the site of the ancient Teatro Cómico. C.m.s.n.m.: meters above sea level (J. Mª G.).

During this period, the settlement shows a slight degree of population density, with adjoining and adjacent cuboid buildings, arranged along streets which drive through the complex terrace system established from the citadel down to the shore. It appears likely that this building system followed a social participation model, on the basis of shared construction and organisation parameters. Streets were shared spaces for the circulation of goods and people and they were seen as organizational axes of the urban landscape. Moreover, streets were often preserved and maintained during later building projects. This suggests the existence of

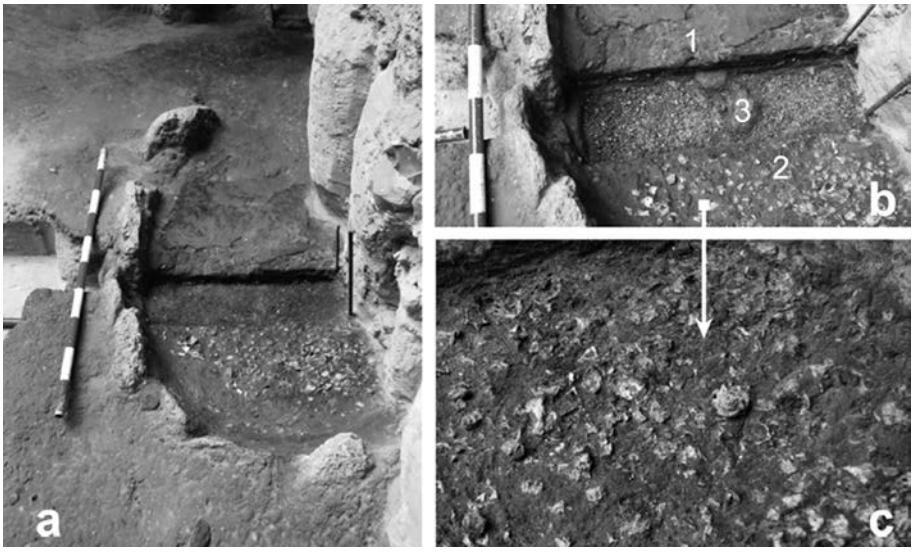

Fig. 3: Structure of the first occupational phase with an abundant accumulation of *Hexaples trunculus* (J. Mª G.).

Fig. 4: Proposed 3D reconstruction of Period II households (Phoenician A) (J. Mª G. y Gesdata, S.L.).

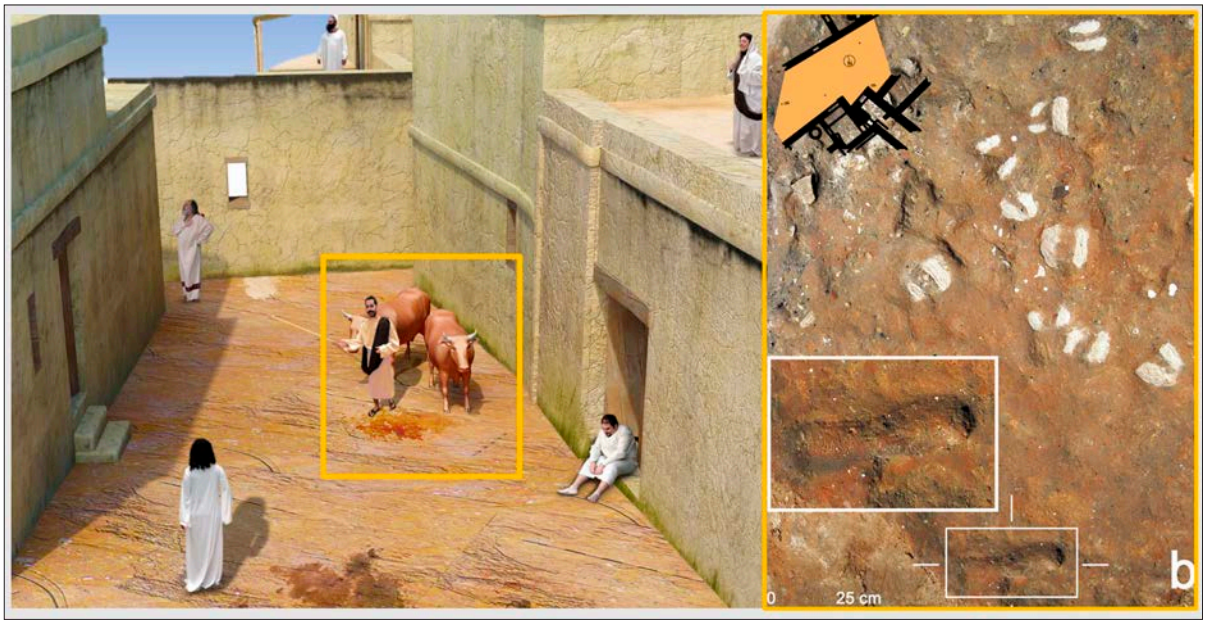

Fig. 5: Left: Detail of the 3D reconstruction of one of the streets. Right: Hoofprints documented on the pavement of Street 1. A possible human footprint can be found on the lower part (J. Mª G. y Gesdata, S.L.).

community-oriented activities in public spaces, which are characteristic of urban settlements, as noted for many Eastern urban sites (Herzog 2007, for Israel; Hellas and Marzoli 2009, for Phoenician urbanism in general; Yasur-Landau *et al*. 2011, for Near Eastern urbanism in general; Fumadó 2013) (figs. 4-5).

Some glimpses of this urban lifestyle can be found in the form of numerous footprints and other traces preserved in the pavement of one of the streets. These traces evidence the crossing and movement of humans and animals, including bovids and ovicaprids, along the streets of Gadir. This evidence suggests *in situ* activities involving livestock on the hoof, complementing the presence of butchery marks on bones found at some of these urban contexts.

Within the urban centre, some buildings had several rooms for different domestic and productive activities. In domestic spaces, it is common to find kitchen facilities and rooms with mills, pestles, and mortars. Among the industrial areas, we find rooms dedicated to pottery production with wheels, shafts, kilns, etc.; spaces for metallurgical production – including slag-filled *tuyères*; and trading areas. Local and imported vessels, amphorae, clay sealings for papyri, Eastern objects – such as alabaster vessels – and a dice-shaped lead weight were found in these industrial areas. Finally, there are also some rooms associated with textile production, with loom weights, spindle whorls, and a bone needle to weave esparto grass (Gener *et al*. 2014).

Period III is a phase of the Phoenician B sequence, dating from the mid-eighth to the early sixth century BC. The building system changes towards the use of conglomerate masonry with limestone and siliceous red clay from Upper Pliocene and Plio-Quaternary deposits (Domínguez-Bella 2011: 62).

Large structures were built by means of pillars, rubble, and stones, developing a well-known Near Eastern technique (pier-and-rubble-masonry). In the Western Mediterranean, this technique experiences the substitution of pillars made from well squared blocks for single stone blocks (orthostates), which are then vertically placed on the walls (Elayi 1990; 1996; Sharon 1987). The only structural group so far excavated dating to this phase comprises at least five rooms made of red clay, each destined to different purposes and activities (Calero *et al*. 2012). The last phases of this period appear to have been rather complex and traumatic.

The Period IV of the sequence, also known as Phoenician C (sixth century BC), shows a change in the urbanisation of the site that involves the partial dismantlement of previous building phases and terrain levelling for new constructions. However, the intense activity at this area during the Roman period has limited the documentation and our understanding of structures dating to this phase.

MATERIALS AND METHODS

MATERIALS

The bone assemblage comprises 1719 remains. They are in good preservation conditions and show a high level of fragmentation. The identified species include *Ovis aries*, *Capra hircus*, *Canis familiaris*, *Equus caballus*, *Bos taurus*, *Sus* sp., and a cat in anatomical connection (Estaca-Gómez *et al*. 2015). We have identified some bird and fish remains that are however not going to be discussed in this paper (Pérez de Ayala 2011a; 2011b). In relation to wild taxa, we note the presence of *Cervus elaphus*, *Erinaceus europaeus*, and *Oryctolagus cuniculus*.

METHODS

The analysis of the bone remains from Teatro Cómico can be divided into three parts: the taxonomic study, mortality patterns, and the interpretation of skeletal profiles.

For a more in-depth discussion of the methods followed in the present zooarchaeological study we recommend Estaca-Gómez *et al*. (2015), where we discuss the use of reference collections together with relevant publications for the purposes of taxonomical identification. We have also arranged species in different categories according to size, which provides useful information about those remains that could not be assigned to specific taxa. Thus, large-sized animals encompass bovids and horses; deer and donkey are considered medium-sized ones, while small-sized animals include sheep, goats, and pigs. Therefore, we have only considered 'unclassifiable' those remains which could not be assigned to either a species or to one of these size-based groups.

In relation to the quantification of bone remains, we have considered the NR (Number of Remains), and the MNI (Minimum Number of Individuals). When constructing age profiles, we have considered five age

Teatro Cómico site			
Taxon	NR	% Total	% classifiable
Bos taurus	341	19.84	35.8
Equus caballus	2	0.12	0.2
Cervus elaphus	3	0.17	0.3
Ovis aries	108	6.28	11.3
Capra hircus	27	1.57	2.8
Ovis / Capra	372	21.64	39.0
Sus sp.	80	4.65	8.4
Canis familiaris	7	0.41	0.7
Oryctolagus cuniculus	7	0.41	0.7
Erinaceus europeus	1	0.06	0.1
Bird sp.	5	0.29	0.5
Large-sized unclass. macromammals	230	13.38	
Small-sized unclass. micromammals	423	24.61	
Unclassifiable	113	6.57	
Total	1719	100	

Fig. 6: Taxonomical profiles on the basis of the NR (Number of Remains).

	MNI						
Taxon	Neonate	Infant	Juvenile	Adult	Senile	Total	%
Bos taurus	0	0	1	4	1	6	15.00
Equus caballus	0	0	0	1	0	1	2.50
Cervus elaphus	0	0	0	1	0	1	2.50
Ovis aries	0	1	1	6	1	9	22.50
Capra hircus	0	1	1	2	0	4	10.00
Ovicaprids	1	1	1	7	0	10	25.00
Sus sp.	0	1	1	2	1	5	12.50
Canis familiaris	0	0	0	1	0	1	2.50
Oryctolagus cuniculus	0	0	0	1	0	1	2.50
Bird sp.	0	0	0	1	0	1	2.50
Erinaceus europeus	0	1	0	0	0	1	2.50
Total						40	100.00

Fig. 7: Pattern of taxonomical representation on the basis of the MNI (Minimum Number of Individuals).

groups: neonates, infants, juveniles, adults, and senile individuals. In order to calculate the age of the remains, we have taken into account the following authors: Pérez Ripoll (1988) in relation to ovicaprids; for deer, we have consulted Mariezkurrena (1983), Klein *et al.* (1983), and Brown and Chapman (1991a; 1991b), and those of Levine (1982) and Guadelli (1998) for equids. To construct the age profiles, we have defined the juvenile cohort as comprising individuals of around 2-3 years of age, assigning those below two years old to the

category of infants, and considering 'neo-nates' the new-born animals. The adult cohort is divided in two groups: prime adult individuals, with an age from sexually mature to around 75% of their expected lifespan, and we have considered senile those with an age greater than 75% of their expected lifespan.

For the quantification of the MNI, we have calculated two types of MNI: a 'global' aspect of the MNI, considering all the stratigraphic units of the same chronology as part of the same assemblage; the second approach was to calculate the MNI of each stratigraphic unit independently and then add them together. This second method tends to yield higher MNI counts, therefore providing a better statistical representation of the faunal assemblage.

Following Yravedra (2006), in our assessment of skeletal part profiles we have grouped bones into four sections: cranial, which comprises the cranium and the mandible; axial parts (vertebrae, ribs, scapula, pelvis), and the appendicular skeleton, further subdivided into upper limb bones (humeri, femora, tibiae, radii-ulnae), and lower limb bones (metapodia, compact bones from ankles and wrists, and phalanges).

ZOOARCHAEOLOGICAL EVIDENCE

We have been able to classify 55.4% of the total faunal assemblage from the site of Teatro Cómico (1719 remains). The assemblage includes a broad spectrum of species, mostly mammals although birds and fish are also present. Domestic species (sheep, goats, bovids, pigs, dogs, and equids) predominate at the site. On the

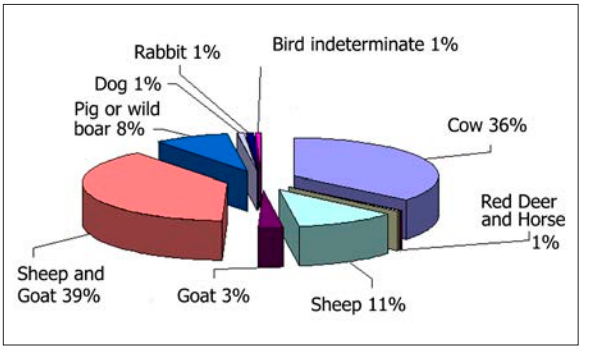

Fig. 8: MNI Percentages for each taxonomical profile, for each stratigraphic unit.

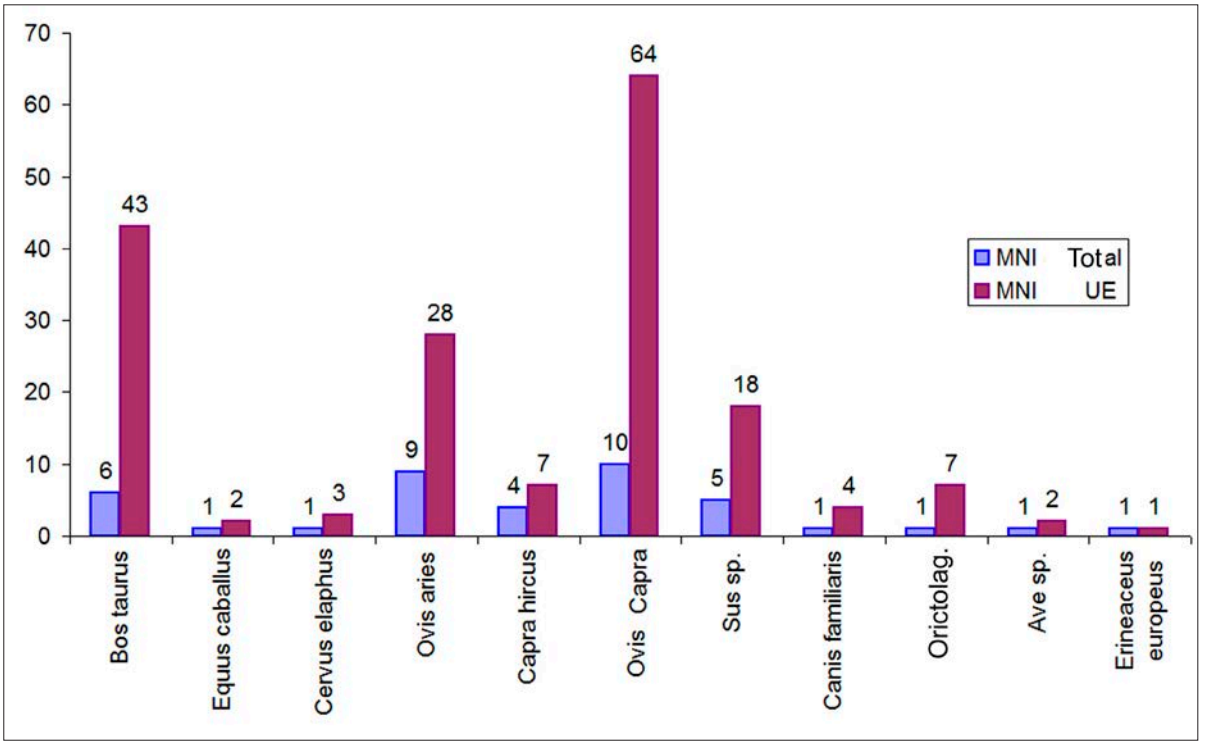

Fig. 9: Comparative assessment of MNI values, both in total and for each stratigraphic unit.

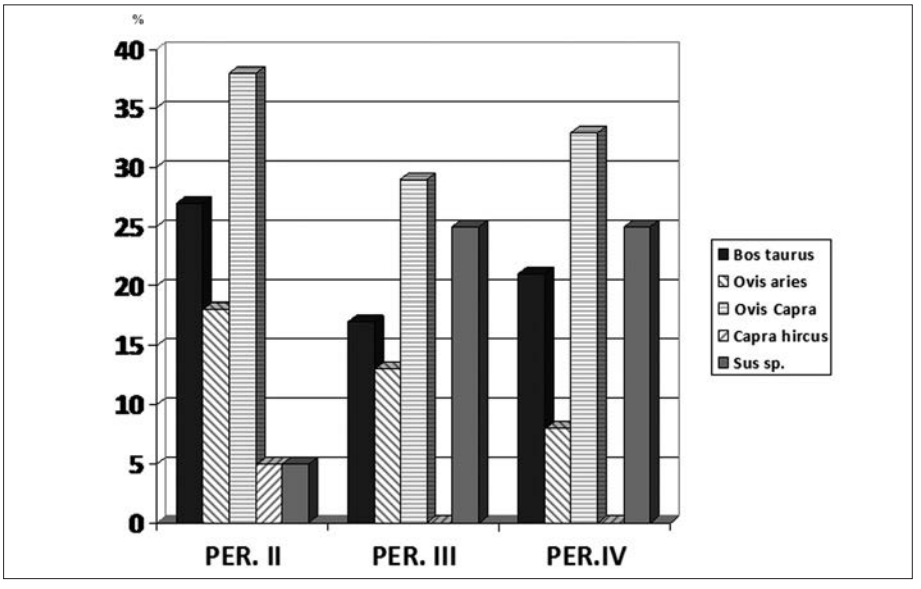

Fig. 10: Percentage-based representation of the NR (Number of Remains) of the main species found at Teatro Cómico, for each of the periods.

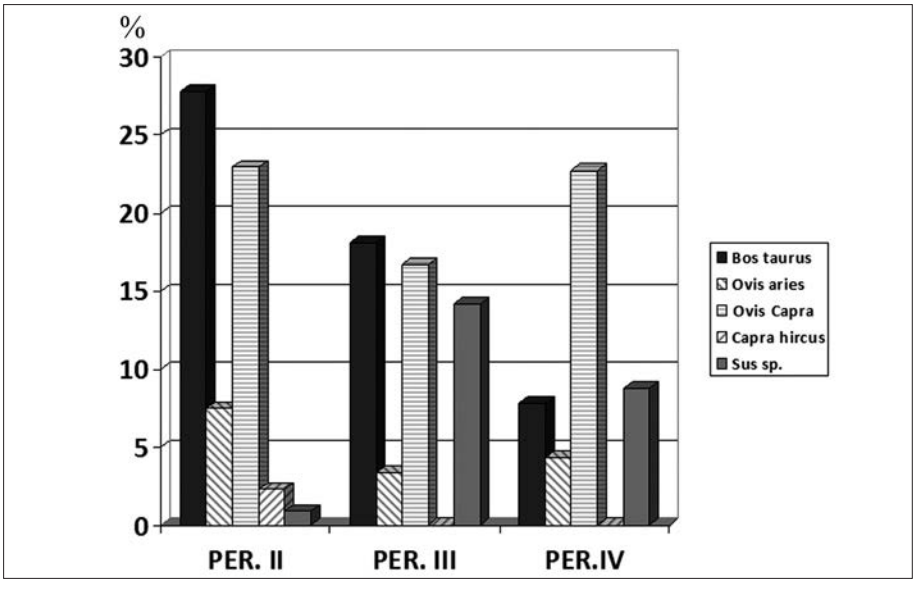

Fig. 11: Percentage-based representation of the MNI (Minimum Number of Individuals) of the main species found at Teatro Cómico, for each of the periods.

other hand, wild taxa only comprise 1% of the classifiable remains, and are represented mainly by deer and rabbit. Among the domestic species, ovicaprids stand out, with 29.5% of the total remains and comprising 53% of all classifiable remains (fig. 6). Second in importance come bovids, with 18.8% of the NR and 35.8% of the classifiable remains. Pigs are the third best represented group, with 4.7% of the NR and 8% of the classifiable remains. Lastly, horse and dog complete the taxonomic profile of domestic species with a rather slim representation in the sample.

With regard to the assessment of the number of remains on the basis of the MNI, we observe a rather similar pattern to the one yielded by the study of the NR mentioned above. Sheep and goat comprise 57% of the MNI, bovids are still the second most represented species with 15% of the MNI, and suids are also the third most frequent species at the site, with a representation of 12% of the MNI (fig. 7).

When considering the MNI percentages of each stratigraphic unit independently (fig. 8), we also note a similar pattern, with sheep and goat reaching over

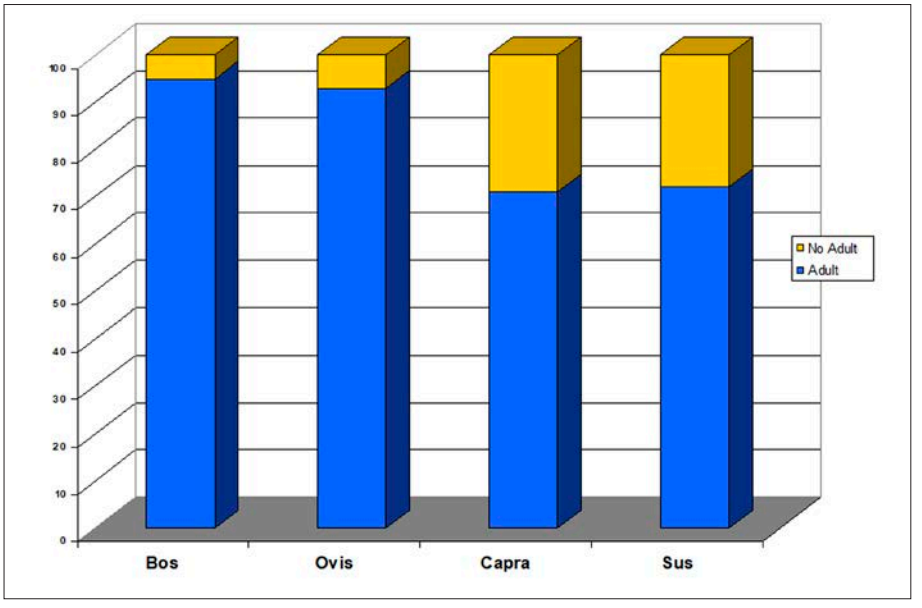

Fig. 12: Representation of adult vs non-adult individuals for the each of the main taxa found at Teatro Cómico.

55% of the sample, even though bovids get a slightly higher percentage (24%), while suids remain relatively relevant with a representation of around 10% of the sample. Several animals consistently yielded low percentages: rabbits comprise 4% and dogs 2% of the MNI per stratigraphic unit. The remaining species combined represent only the 4.5% of the total MNI per stratigraphic unit (fig. 8).

Therefore, we can confirm that the MNI increases when considering each stratigraphic unit on its own (fig. 9). Bovids show the greater variation, with an MNI of 6 when considering the assemblage as a whole, and 43 when adding together all stratigraphically-based MNIs, an increase of 700%; similarly, sheep and goat have an original MNI value of 23, reaching 99 when considering this more contextual approach. Pigs and rabbits also experience a similar statistical boost, although the variance is smaller for those species with the lowest number of remains. This suggests that the contextual approach of considering the MNI for each stratigraphic unit on its own does provide a more statistically representative sample for the purposes of zooarchaeological analysis and interpretation.

There is some variability in terms of taxonomical representation throughout the sequence. Notably, Period II has yielded the largest number of remains and individuals (figs. 10-11). Sheep and goat are the best represented species, both in terms of the NR and the MNI; bovids come second, in line with the global taxonomic profiles described for the site as a whole (figs. 6-7). Other species are scarcely represented, with suids just barely reaching 1% of the sample.

Period III has a smaller quantity of remains, just over 350. Taxonomically, ovicaprids are still predominant, followed by bovids and suids. Pigs in particular experience a significant increase in relation to the previous period, reaching 14.16% of the NR and 25% of the MNI (figs. 10-11). Besides, they become the second most represented species during Period IV, even if their MNI count does not increase accordingly. This is due to the progressive decrease in the number of *Bos taurus* remains throughout the sequence. The drop is particularly significant during Period IV, on the basis of the NR (fig. 10), although the decline is less marked if only the MNI is considered. We stress again that sheep and goat are the most represented species throughout all the periods under study.

When looking at the mortality profiles, it can be noted that most of the individuals are adults (fig. 12). For example, the mortality profiles for sheep and goat show that mature adults comprise over half of the sample. This pattern suggests that animal exploitation was not predominantly oriented towards meat production; instead, we argue that the interest in keeping adult individuals alive appears to indicate a greater interest in secondary products, such as wool and milk. This interpretation is further supported by the presence at the site of items of material culture oriented to textile production, such as needles and spindle whorls, and others used for processing

dairy products. Adult animals, particularly bovids, may have also been used as beasts of burden for pulling carts. This aspect might have been particularly relevant in the context of harbour activity, as bovids would have played an important role in loading and transporting ship cargo, as well as to pulling nets and fishing boats onto the beach shore (Delgado 2008). The use of pulling force from oxen for fishing wels catfish (*Silurus glanis*) has been documented among the Moesi (Thrace) in the second and third centuries AD (Claudio Eliano, *De Natura Animalium*, XIV, 25). The earliest references regarding the use of oxen for fishing purposes in southern Iberia come from the 18th century, when their force was deployed in the fishing technique known as trawling (Mirabent 1850; Delgado 2008), although their origin presumably derives from earlier cultural practices.

TAPHONOMICAL ANALYSES

Concerning the study of bone surface modifications, we have identified cut-marks on bone remains from all age groups. This pattern suggests that all animals, regardless of age, were exploited for meat consumption, including those primarily kept for their secondary products, once they reached an age when they were no longer able to provide those products.

In the study of the *Suidae* assemblage, we have documented the presence of infant and juvenile individuals, most likely slaughtered for meat procurement. This aspect is relevant, given the potential implications of pig consumption in Phoenician settlements (Morales *et al*. 1995: 526-527). However, determining who was responsible for pig consumption at a site that was perhaps inhabited by both Phoenicians and local people is not an easy task. Similarly, it is not known to what extent such food taboo would be followed or enforced. Therefore, we argue that pig consumption ought not to be straightforwardly considered a meaningful cultural marker for determining whether a site was Phoenician or indigenous.

In relation to bovids, adult individuals predominate. This pattern seems to suggest the relevance of dairy products, further stressed by the discovery of associated ceramic remains. The possible presence of oxen could be linked with pulling and loading; nonetheless, we are yet to undertake the required biometric analyses on the Teatro Cómico assemblage that would confirm their presence. The analysis of bone surface modifications indicates that all bovid age groups were being slaughtered for meat consumption, in addition to being exploited for other functional purposes.

The analysis of the skeletal profiles shows that all skeletal sections are represented for the main animal species (sheep/goat, bovids, *Suidae*), thus indicating that they came to the site as dressed carcasses or on the hoof. Nevertheless, as we can see in Figure 13, some elements are better represented than others, with cranial elements being the most abundant. This pattern can be due to two factors: firstly, the greater degree of fragmentation experienced by cranial elements, and secondly the abundance of teeth in relation to other anatomical elements. Axial elements for animals other than sheep/goat are less common (fig 13). Regarding appendicular elements, upper limb bones are the best represented for sheep/goat and bovids. On the other hand, the upper limb bones and the axial elements of pigs are poorly represented in the bone assemblage. This pattern seems to be a consequence of their intense exploitation in the process of meat preparation and consumption, as suggested by the presence of cut-marks on most pig bone surfaces.

IMPLICATIONS OF THE FAUNAL ANALYSIS FOR UNDERSTANDING THE EXPLOITATION OF SECONDARY PRODUCTS AT THE TEATRO CÓMICO SITE

In comparison to other contemporary sites, Teatro Cómico has yielded a less numerous bone assemblage than those found at Castillo de Doña Blanca or Toscanos (Morales *et al*. 1994; 1995). Nevertheless, their taxonomic profiles do not differ significantly from these other sites: sheep and goats are the most represented, followed by bovids and pigs, whereas equids, dogs, and wild animals, such as deer, are rare.

The zooarchaeological study of the Teatro Cómico bone assemblage has yielded several lines of evidence supporting the exploitation of secondary animal products at the site. For example, age profiles show a high proportion of adult individuals across all taxa (fig. 12). These mortality patterns seem to suggest long-term engagements with animals for purposes other than meat consumption.

Moreover, sheep and goat are the most frequent species throughout the sequence, whereas the relative representation of other species (such as bovids or pigs) changes over time. Sheep and goats can both provide milk and wool. The predominance of sheep can be linked with the

Anatomical part	*Bos taurus*	*Equus caballus*	*Cervus elaphus*	*Ovis aries*	*Capra hircus*	*Ovis /Capra*	*Sus* sp.	*Canis familiaris*	*Oryctolagus cuniculus*
Horn	13								
Cranium	105					20			
Maxilla	4			5		4	2		
Mandible	28			12	5	22	7	1	
Teeth						5	2		1
Incisor	1								
Canine							3	1	
Premolar	5			19	11	14	7		
Molar	29			30	8	11	14		
Vertebra	20					48			
Rib	14					19	2		
Scapula	7			1		11	2		
Humerus	7	1		10	1	23	3	1	2
Radius	5			4		20	2		1
Radio-Ulna	2					7			
Ulna	2					7	2		
Metacarpus	14			7	1	27			
Astragalus	2			5		8	1		
Patella				1					
Superior	4					2			
Pelvis	3			1		6	2		
Femur	7			1		27			1
Tibia	8			7		30	5	2	2
Fibula							2		
Metatarsal	9		1	3	1	18			
Tarsal	1								
Metapodium	5	1				9	16	2	
Calcaneus	1			2		5	1		
Sesamoid						1			
Phalanx	38		2			28	7		
Unclassifiable	7								
Total	341	2	3	108	27	372	80	7	7
Cranial	185	0	0	66	24	76	35	2	1
Axial	44	0	0	2	0	84	6	0	0
Upper Limbs	31	1	0	22	1	114	14	3	6
Lower Limbs	74	1	3	18	2	98	25	2	0

Fig. 13: Skeletal profiles for the main taxa documented in the Teatro Cómico bone assemblage.

requirements of the textile industry, given that sheep produce more wool; the existence and relevance of textile production is further confirmed by the presence of specialised items of material culture, such as needles, spindle whorls, and loom weights. Moreover, the extraction of purple dye from *Hexaplex trunculus* can also be linked with efforts to meet the demands of the textile market. Furthermore, as mentioned above, the presence of a rounded structure from the Phase I period (fig. 3), which yielded a large amount of *Hexaplex trunculus* shells,

could suggest *in situ* purple dye production (Gener *et al*. 2014). The production of purple dye has already been documented at other Phoenician sites in the Mediterranean, such as Motya and Carthage. At Motya, in levels dated to the sixth to fifth centuries BC, murex shells were crushed with stone hammers on whale vertebrae used as anvils (Reese 2005); at Carthage, a deposit with *Murex trunculus* shells was found on a layer dating to the eighth century BC (*cf*. Gener *et al*. 2014).

The study of bovid remains has not confirmed yet whether oxen are also represented in the assemblage. However, these remains have yielded valuable information regarding the intensity of labour demanded from the animals. It is worth noting that the soil surrounding the site is not particularly conducive to cereal agriculture, so the involvement of cattle as beasts of burden on other demanding tasks beyond or in addition to agricultural labour is quite likely. The presence of hoofprints and raceway traces on street surfaces, together with the maritime vocation of the inhabitants of the site in the context of active trading, might indicate the use of these animals for pulling and transporting ship cargo and/or fishing implements, such as nets.

Pigs would usually seem to have been only relevant for their meat. However, the Teatro Cómico assemblage shows a predominance of adult individuals, and the relative frequency of the species changes over time, becoming the second most abundant animal during Period IV (figs. 10-11). This situation is at odds with the pattern seen at most Phoenician sites, where this species never appeared to have reached over 12% of the faunal assemblage – in contrast with Tartessian sites, where pigs are generally more common. Nonetheless, it is worth noting how limbs, the most meat-rich parts of the skeleton, are rather poorly represented. Perhaps, pig hindlimbs and forelimbs were relevant also for their potential role as currency in economic transactions, although they may have been directly traded to other sites for consumption.

In relation to meat procurement, the presence of cut-marks confirms a meat-oriented exploitation of animal remains at the site. In general, the remains from species which provide less utility in terms of secondary products tend to yield more butchery marks: for example, goat bones tend to show cut-marks more frequently than those of sheep. Nonetheless, it is worth noting that the slaughter of mature adult individuals tends to occur at an age when they are no longer able to continue providing secondary products or they are too old for demanding physical tasks. In other words, butchery patterns suggest that their consumption aimed to maximise their overall productivity and usefulness after their primary function was exhausted. It is relevant to note that this pattern of meat procurement being subordinated to the production of secondary products is in stark contrast with the evidence from sites such as the ceremonial centre of Montemolín, where most sheep, goats, pigs, and bovids were slaughtered before they were two years old (De la Bandera *et al*. 1995; Chaves *et al*. 2000).

In conclusion, the mortality patterns and skeletal part profiles of the faunal assemblage of Teatro Cómico indicates a complex system of herd management. The presence of hoofprints in public contexts and the discovery of specialised items of material culture related to the processing of dairy products and textile production indicates that animals were relevant beyond meat provision. In fact, we argue that the zooarchaeological study of the Teatro Cómico bone assemblage supports the notion that secondary products, such as wool, milk, leather but also animal traction, could have represented a significant socio-economic dimension for inhabitants of this Phoenician site.

ACKNOWLEDGEMENTS

We thank the anonymous peer reviewers that have assessed this work; their comments and suggestions have greatly improved the paper, helping with the contextualisation of southern Iberian Phoenician sites. We also thank the CAI centre of Archaeometry and Archaeological analysis of the Complutense University of Madrid and the Teatro Cómico Archaeological Project of the Excmo. Ayuntamiento de Cádiz. Lastly, we would like to thank the Journal editor for their patience dealing with the different version of this paper. Lastly, we would like to mention that the authors remain responsible for the data and any shortcomings here presented.

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