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*Animals and Humans through Time and Space:  
Investigating Diverse Relationships*

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Animals and Humans through Time and Space:  
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Essays in Honour of Joris Peters

Edited by

Nadja Pöllath, Nora Battermann, Stephanie Emra, Veronika Goebel,  
Ptolemaios Paxinos, Martina Schwarzenberger, Simon Trixl,  
Michaela Zimmermann



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# The archaeozoological remains from Late Chalcolithic Çukuriçi Höyük, on the western Anatolian coast.

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## Abstract / Zusammenfassung

This paper presents the archaeozoological results from the Late Chalcolithic and initial Early Bronze Age 1 phases (c. 3350-2950 calBC) from the site of Çukuriçi Höyük, located on the western Anatolian coast. The mammalian assemblage is dominated by caprines, most likely representing goats, followed by cattle, fallow deer, and pig. A great deal of continuation is seen between the Late Chalcolithic phases and the initial Early Bronze Age 1, as well as already published Early Bronze Age remains from the settlement. The Late Chalcolithic remains represent one of very few published faunal assemblages from western Anatolia, and so provides valuable information in terms of the regional variation in subsistence strategies at this time. A thorough summary of published Late Chalcolithic comparative faunal assemblages from western Anatolia is also presented.

In diesem Beitrag werden die archäozoologischen Ergebnisse zu den spätchalkolithischen und beginnenden Frühbronzezeit-I-Phasen (ca. 3350-2950 v. u. Z.) von Çukuriçi Höyük an der westanatolischen Küste vorgestellt. Die Knochen von Schafen und Ziegen überwiegen im Fundmaterial, gefolgt von Rind, Damhirsch und Schwein. Der diachrone Vergleich der archäozoologischen Fundeinheiten beider Phasen, aber auch der bereits publizierten Funde nachfolgender Phasen der Frühbronzezeit weist viele Kontinuitäten auf. Das spätchalkolithische Tierknochenensemble stellt eines der wenigen publizierten Fundmaterialien dieser Zeitstellung in Westanatolien dar und liefert wichtige Informationen zu regionalen Variationen bei den Subsistenzstrategien. Mit einem zusammenfassenden Überblick aller veröffentlichten spätchalkolithischen Vergleichsfunde in Westanatolien schließt dieser Beitrag ab.

**Keywords:** Late Chalcolithic, western Anatolia, Çukuriçi Höyük, Early Bronze Age, archaeozoology  
Spätes Chalkolithikum, Westanatolien, Çukuriçi Höyük, Frühbronzezeit, Archäozoologie

## 1 Introduction

Investigations into the subsistence practices of Chalcolithic settlements in western Anatolia are sparse, and of varying degrees of detail, with many datasets coming from older excavations. This paper presents a significant new dataset for the Late Chalcolithic (ÇuHö VII-Vb) from the site of Çukuriçi Höyük, located on the western coast. Alongside this, a small assemblage of the initial Early Bronze Age phase (ÇuHö Va) of the site is also presented witnessing the immediate transition between both periods (Schwall 2018, 169, 235-36).

The site of Çukuriçi Höyük is a tell site located near to the ancient city of Ephesos, by the modern town of Selçuk, in the İzmir region.<sup>1</sup> Although the site is located approximately 7.5km inland nowadays, paleogeographic studies show that the settlement was situated close to the sea, next to a lagoon in prehistoric times (Stock et al. 2015). The site was originally settled in the 7<sup>th</sup> millennium BC, in the Early Neolithic (ÇuHö XIII-XII). Occupation sees a hiatus after the Late Neolithic phases (ÇuHö XI-VIII), beginning again with the Late Chalcolithic period (ÇuHö VII-Vb) and ending at the end of the Early Bronze Age 1 (EBA 1: ÇuHö Va-III) (Horejs 2017, 17, Fig. 1.5). The Late Chalcolithic remains are divided into four occupation levels (ÇuHö VII, VIIb-a, VIIb), each of which was destroyed by fire, and then divided by levelling layers (Schwall 2018, 118, 167; Schwall & Horejs 2018, 58-9). The here-presented faunal remains from sub-phase ÇuHö Va represent the very beginning of the Early Bronze Age at the site and will be included in this publication due to a similar architectural tradition which stands in contrast to the subsequent Early Bronze Age settlement phases ÇuHö IV-III (Grasböck et al. in press). These Late Chalcolithic/initial EBA 1 phases are dated by 31 radiocarbon dates on short-lived plants, which range between 3350 and 2950 calBC (Schwall 2018, 167-70).

Preliminary results for the Chalcolithic remains from Çukuriçi Höyük have already been published (Galik 2011; 2014). However, the results presented there as Early Chalcolithic (ÇuHö VIII) have now been re-phased as dating from the Late Neolithic (Horejs 2017, 17, Fig. 1.5). The already published Late Chalcolithic archaeozoological material suffered from being a small numerical quantity, the current study is considerably larger and accomplished after the final analyses of the stratigraphical contexts by the excavators.

## 2 Methodology

The faunal remains were hand collected and sediments were dry sieved with a mesh size of 0.5 cm. Flotation was undertaken on selected contexts. However, several flotation samples have yet to be analysed, which will likely produce an under representation in bird and fish remains and other small animals in this study. Faunal remains were identified with the aid of the use of the modern reference collection at the excavation house of the Austrian Archaeological Institute (OeAI) in Selçuk, Turkey, as well as published reference material. Information relating to taphonomy, age, or pathology was recorded in addition to the weight of each specimen. Measurements were taken in accordance with von den Driesch (1976). In the case of two or more elements being identified as coming from the same individual, for the purpose of this summary, they are counted as a single specimen to avoid the overrepresentation of certain species.

Skeletal element representation was considered for sheep and goats, these being the most numerous mammals found. For this purpose, sheep and goat were combined also due to low sample size and to allow for the inclusion of elements that could not be distinguished between the two species. The relative percentage weight of the skeletal elements was subtracted from those of a modern standard published online by the University of Basel (2022)<sup>2</sup>. The degree of variation from the standard then suggests relative under/over representation of the different skeletal elements.

Antler fragments are not included within the count of the deer remains, as it may have been collected shed antler. Only two antler fragments were found in these contexts. One small fragment being from subphase ÇuHö Va (2.3g) which could not be identified to species. The other was recovered from the levelling material between subphases ÇuHö VIa and Vb and was a beam fragment (49.8g) from a fallow deer (*Dama dama*) that was coated in sinter.

## 3 Results

A total number of identified specimens present (NISP) of 2282 with a weight of 9.4 kg were recorded. Over half of these (n=1387, 60.8%) come from levelling layers belonging to the subphases ÇuHö VIb, VIa, and Vb and are dating from to the Late Chalcolithic period (Schwall 2018: 118, 182, tab. 4). The overlying sub-phase ÇuHö Va dates to the beginning of the EBA. The material of the levelling layers displays a high degree

<sup>1</sup> All publications of the Çukuriçi research are online accessible via: <https://epub.oeaw.ac.at/ERC-Prehistoric-anatolia>.

<sup>2</sup> Universität Basel accessed 2022: <https://ipna.duw.unibas.ch/de/forschung/archaeobiologie/archaeozoologie/methodik/> (last accessed on July 13, 2022)

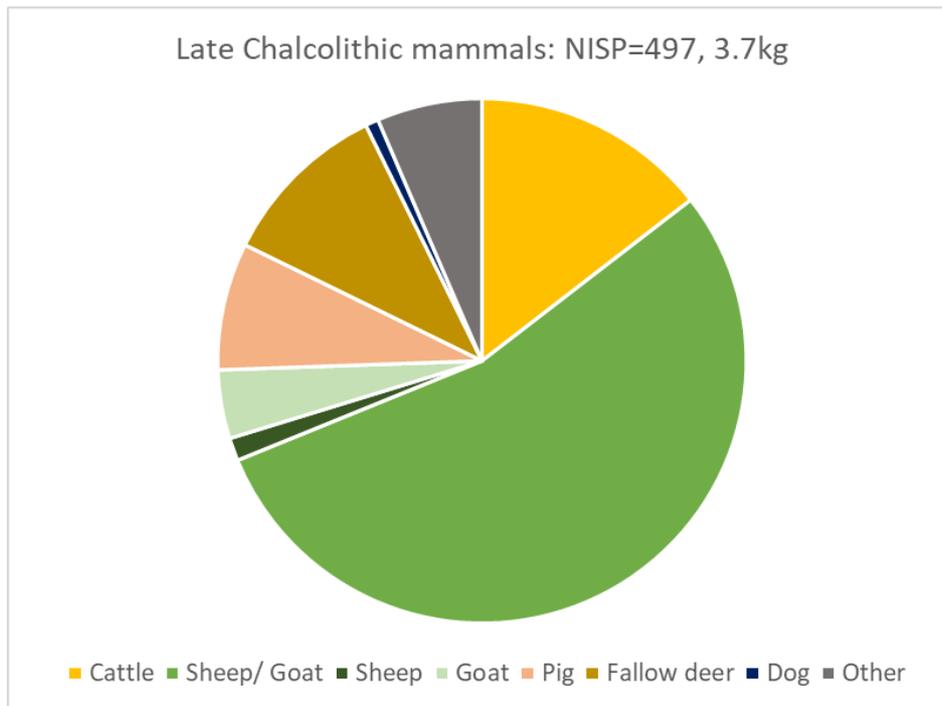


Fig. 1: Relative percentage of Late Chalcolithic identified mammals by NISP.

of burning which corresponds to the excavated Late Chalcolithic contexts. The results of the Late Chalcolithic faunal remains are summarised in Fig. 1 and Appendix 1.

63.3% of the remains by NISP are mammals, 36.4% molluscs with the remaining percentages being made up of small quantities of birds, fish, amphibians and tortoise. Sheep (*Ovis aries*) and goat (*Capra hircus*) make up the majority within the mammalian assemblage (60.0%), followed by cattle (*Bos taurus*) (14.5%), fallow deer (10.5%), and pig (*Sus domesticus*) (7.8%), while goats outnumber sheep 3:1. Lagoon cockle (*Cerastoderma glaucum*) are dominant at 76.7% of the molluscs. No fish were identified to species level, but one was identified as cartilaginous fish. A singular bone fragment comes from a 'mid-sized' bird. The remains from all phases, including levelling phases, are highly burnt with about 50.6% of fragments showing some degree of burning across all Late Chalcolithic phases. The only phase that did not display a high level of burning is ÇuHö VII, which contained only one burnt fragment from a total of 206. This material derives from a filling related to the repairing of the surrounding ditch so is not expected to be filled with material related to the burning event of the settlement (Schwall 2018, Suppl. 1).

The relative percentage weight of caprine skeletal elements is summarised in Fig. 2 against a modern standard (University of Basel 2022). It can be observed that overall all skeletal parts are attested to, and are present

in broadly the same percentages as would be expected if all parts of the carcasses were commonly discarded within the settlement, perhaps with the exception of the vertebrae.

Percentage of remains with butchery marks was calculated removing neonate specimens and isolated teeth, as they are usually unlikely to display cutmarks (Halsstead 2007,37). Cutmarks on domestic animals were relatively rare, being found on 3.5% (9 of 259) of caprine bones and 3.5% (2 out of a possible 72) on cattle. Fallow deer on the other hand is a little higher at 10% (5 of 50). Whilst this sample is quite small, this trend of more intense butchery of wild animals, particularly noticeable in the fallow deer, continues into the EBA levels with 4.1% of bones being butchered in caprines, 4.4% in cattle and 9.4% in fallow deer (preliminary information on Early Bronze Age butchery at Çukuriçi Höyük c.f.: Emra et al. 2020, 4-5).

In addition, a small sample of faunal remains from the initial EBA 1 (ÇuHö Va) is presented in Table 1. Few conclusions can be drawn from this limited number of specimens, but generally, the range and rough relative percentage of species is similar to that of the preceding Late Chalcolithic as well as the preceding EBA levels (Emra et al. 2020, 3, Fig. 3.1). Similar to the Late Chalcolithic levels, the percentage of burnt remains is quite high (55.3%) which is consistent with the interpretation that this settlement subphase, like the preceding Late Chalcolithic subphases, was destroyed by fire (Schwall 2018, 164.)

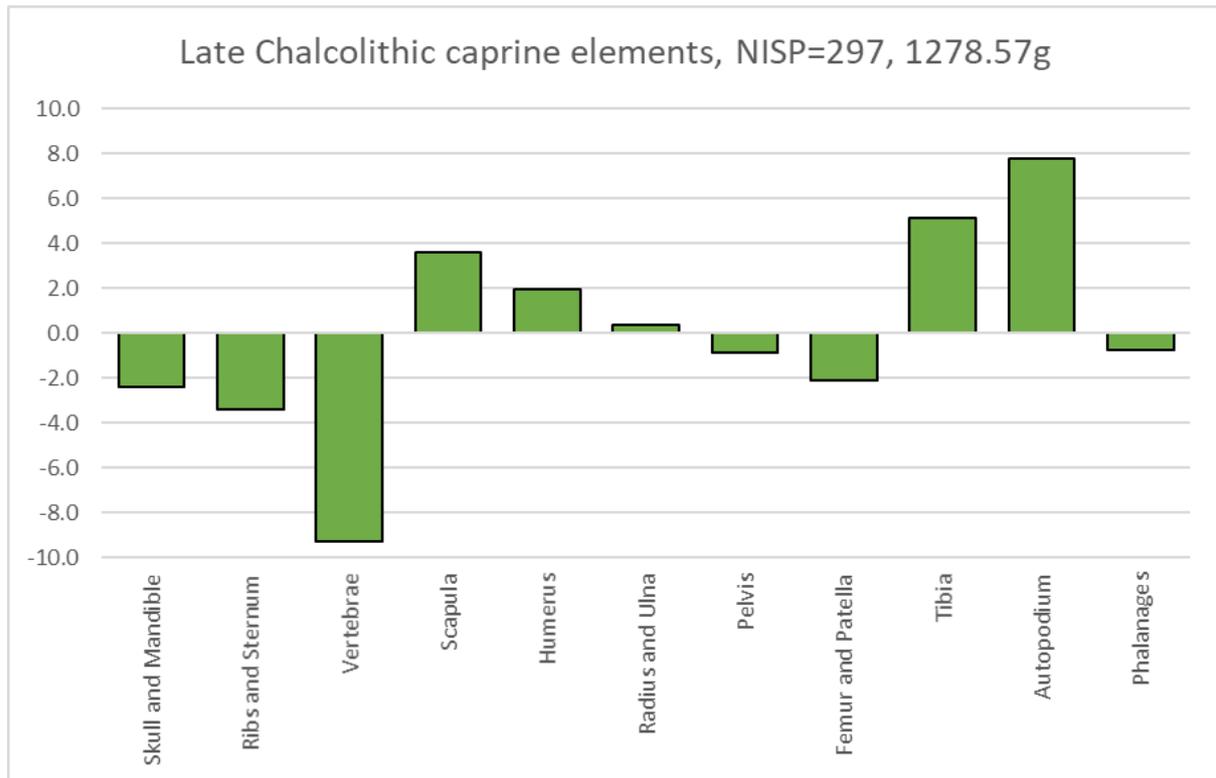


Fig. 2: Caprine element representation by percentage of weight against a modern standard sheep as the zero line.

ÇuHö Va	NISP	Weight (g)	NISP %	Weight (g) %
Cattle	2	18.4	2.7	7.2
Large mammal	14	43.9	18.7	17.1
Sheep/Goat	6	9.9	8.0	3.9
Sheep				
Goat	1	6.9	1.3	2.7
Pig	1	1.8	1.3	0.7
Medium sized mam- mal	17	36.3	22.7	14.2
Fallow deer	2	32.8	2.7	12.8
Cervidae	1	6.4	1.3	2.5
Dog	1	7.2	1.3	2.8
Birds				
Molluscs	19	83.2	25.3	32.4
Fish				
Unidentified	7	2.9	9.3	1.1
Other	4	6.7	5.3	2.6
Total	75	256.4	100	100

Table 1: Summary of faunal remains from the initial Early Bronze Age 1 (ÇuHö Va) of Çukuriçi Höyük by phase.

#### 4 Discussion of archaeozoological results

The relatively small number of specimens identified down to a species level means that only general conclusions can be drawn. This smaller sample size is no doubt partially related to the high percentage of fragments that were burnt. This high level of burnt faunal remains is in accordance with the archaeological evidence, which suggests that at the end of each phase within the Late Chalcolithic period the settlement burnt down. Overall, however, the archaeozoological remains from the Late Chalcolithic levels at Çukuriçi Höyük demonstrate that the main subsistence activities for this period was sheep and, in particular, goat herding as well as cattle herding and shellfish collecting. Other activities that also contributed to subsistence included game hunting, largely for fallow deer, although red deer and boar are also attested. Hunting or trapping for hare and fox also took place and at least some fishing is evidenced. Some low levels of carnivore gnawing on bones (1.7%) as well as four dog bones confirms their presence on the site. The percentage weight of caprine elements matching relatively closely with the modern standard suggests that caprines lived close to the settlement, with either carcasses being carried whole on site, or the livestock were brought there for slaughter.

The Late Chalcolithic levels, as well as the initial EBA phase (ÇuHö Va) of Çukuriçi Höyük are very similar to that of the subsequent EBA phases ÇuHö IV-III (Emra et al. 2020, 2) with molluscs making up a sizable percentage in both periods, although slightly higher in the EBA (Late Chalcolithic = 36.4%, EBA = 47.3%). Any percentage difference between the two periods in regards to molluscs are however going to be heavily influenced by disposal patterns. This is starker than in the case of mammal remains as dozens or even hundreds of mollusc shells may represent only single meals.

Caprines, cattle, and fallow deer were the most important mammal species in both the Late Chalcolithic and EBA periods, and when counted by NISP, in that order. One small difference observed between the two periods is that cattle makes up a higher percentage than caprines when counted by weight (Late Chalcolithic: Cattle: 37.8%, Caprines: 34.8%), whereas in the EBA caprines still dominate (Cattle: 32.7%, Caprines: 40.6%). Percentage of bone weight might be considered a very rough proxy for contribution to diet, but whether this shift is really related to a change in subsistence strategy or more related to issues of sample size is hard to tell. Overall, from what is suggested by the relative proportion of species, it appears that there is a great deal of continuity in subsistence strategy between the Late Chalcolithic and EBA period at Çukuriçi Höyük.

#### 5 Regional Comparison

Whilst the faunal remains from the Late Chalcolithic levels of Çukuriçi Höyük is of an only limited sample size, it is nonetheless a valuable result as there is a general lack of published faunal remains from this period in western Anatolia. Additionally, where there is published comparison material available it is often of inconsistent recording and publication style due to altering scientific methods in history making comparison between sites difficult. The data from western Anatolian and East Aegean Late Chalcolithic sites (Aphrodisias-Pekmez LC 1-4, Emporio VII-VI, Kuruçay Höyük 6A-3, Kumtepe IB, Küllüoba 6-3, and Barcın Höyük V) summarised here is in many cases slightly modified compared to what was originally published. This has been done in order to make comparison between sites easier. Percentage NISP was worked out only using identified mammal remains, with unidentified remains, specimens only identified to a size-category level, and antlers removed. Additionally, in rare cases that a specimen was recorded as being potentially either wild or domestic, a domestic status has arbitrarily been assumed. Four sites with published NISP data are compared to the Late Chalcolithic remains of Çukuriçi Höyük in Table 2, a more complete summary of data from published Late Chalcolithic sites can be found in Appendix 2, with the exception of Barcın Höyük as a precise breakdown of the domestic mammals was not published.

The levels of Late Chalcolithic Aphrodisias-Pekmez (LC 1-4), which is located further inland up the Büyük Menderes valley from Çukuriçi Höyük, provides the geographically closest site available for comparison. A NISP of 2792 was recorded, 901 recorded to a species level, no weights were however published (Crabtree & Monge 1986, 181, Table 9). Whilst similarly the largest proportion, by NISP, of identified mammals belong to the caprines (32.1%) they are somewhat less important than that at Çukuriçi Höyük where they make up 60.0% (Crabtree & Monge 1986, 181, Table 9). Cattle are found in similar levels in both settlements, however fallow deer (24.3%) hunting and pig (23.6%) raising instead seem to play a much more significant role at Aphrodisias-Pekmez than at Çukuriçi Höyük (Crabtree & Monge 1986, 181, Table 9). In Aphrodisias-Pekmez the authors note a clear contrast in the number of cutmarks observed between the Late Chalcolithic and EBA contexts, and a shift in the relative proportion of cutmarks found on different species (Crabtree & Monge 1986, 187-88). As previously discussed, such a shift is not recognised at Çukuriçi Höyük with butchery technique and emphasis not seeming to undergo a change during over time. In contrast to Çukuriçi Höyük few molluscs remains have also been recorded at Late Chalcolithic Aphrodisias-Pekmez (n=5; Reese

	Çukuriçi Höyük (n=497)	Aphrodisias (NISP=910)	Emporio (NISP=266)	Kuruçay Höyük (NISP=51)	Küllüoba (NISP=462)
Cattle	14.5	11.5	34.2	35.3	22.9
Caprine	54.3	27.7	54.5	15.7	44.2
Sheep	1.4	1.6		0.0	5.0
Goat	4.2	2.6		0.0	3.0
Deer	7.8	30.8	3.4	0.0	1.5
Pig	10.5	23.5	7.9	23.5	17.3
Dog	0.8	1.8		0.0	1.5
Rodents	0.0	0.0		0.0	0.2
Other	6.4	0.4		25.5	4.3

Table 2: Percentage NISP of Late Chalcolithic sites. Late Chalcolithic Çukuriçi Höyük, Aphrodisias-Pekmez (Crabtree & Monge 1986, 181, Tab.9), Emporio (Clutton-Brock 1982, 679, Fig. 300), Kuruçay Höyük (Deniz & Şentuna 1988, 172, Table 2), and Küllüoba (Gündem 2003, 84, CII-2).

1986, 192, Table 29), it is unclear whether this is due to if molluscs not being an important food source, or due to an issue of sampling. It is however unsurprising that Çukuriçi Höyük would be more dependent on molluscs, as the Aphrodisias-Pekmez is up-river, much further from the coast. Of those from the Late Chalcolithic however, both marine and freshwater molluscs are recorded as present with both lagoon cockle and a freshwater snail (*Melanopsis praemorsa*), that is likely to be used for foodstuff, being found (Reese 1986, 192, Table 29).

In the immediate region, there is also the site of Ulucak Höyük III, whilst although a good-sized assemblage of faunal remains was initially published as being from the Late Chalcolithic (Gündem 2010, Tables 4-10), these phases are now thought to be dating to the Middle Chalcolithic (Schwall 2018, 55).

From the site of Emporio on Chios, 266 specimens from the Late Chalcolithic phases VII-VI were published (Clutton-Brock 1982, 679, Fig. 300). Of these approximately just over half were caprines, a third were from cattle and the rest being pig and fallow deer.

The late Chalcolithic phases of Kuruçay Höyük (6A-3), located by Lake Burdur, has only a small sample size published giving NISP data (n=215), the majority of which is not identified down to a species level (Deniz & Şentuna 1988, 172, Table. 2). A larger sample has since been published (n=1040), but only a species list is given (Deniz 1996, 87-88).

In the Troad, additional data is available from the site of Kumtepe (Uerpmann 2003, 252-54; 2006). Kumtepe A belongs to the Middle Chalcolithic and Kumtepe B to the Late Chalcolithic period. Unfortunately, no NISP

or exact weights were published for this material, but the relative weights presented show that pig makes up around 50% of the assemblage, followed by cattle with around a third of the sample by weight (Uerpmann 2006, 285, Fig. 1). Caprines, and in particular hunted mammals, played a relatively minor role.

The site of Küllüoba located further inland, provides data of the transitional Late Chalcolithic/EBA phase (FB 0: Küllüoba 5-3; Gündem 2003, 70, 77; Gündem 2012, 253, Table 1). A NISP of 462 (5.4kg) of identified mammals was recorded from the FB 0 phases (Gündem 2003, 84, Table CII-2). The relative percentage of species is similar to that found at Çukuriçi Höyük. Just over half of the assemblage, by NISP, in both cases are made up of sheep and goat, although in the case of Küllüoba sheep outnumber goat 2.6:1, which likely reflects the more highland environment (Gündem 2003, 84, Table CII-2). Cattle is the next most common species at both sites being 22.9% by NISP at Küllüoba and 14.5% at Çukuriçi Höyük. Pigs however constitute a much more significant part of the diet at Küllüoba (17.3%) compared to at Çukuriçi Höyük (7.8%). Fallow deer are however far less common (Küllüoba: 0.6%, Çukuriçi Höyük: 10.5%) and red deer being rare that both settlements (Küllüoba: 0.9%, Çukuriçi Höyük: 0.2%). Similar to Çukuriçi Höyük however, cattle by weight make up just under half, whilst caprines make up around one third.

Lastly, a more detailed comparison of the Late Chalcolithic levels of both Çukuriçi Höyük and Barcın Höyük has already been published (Galik 2014) and despite the increased sample size presented here the conclusions are still appropriate. Like in the case of Küllüoba 5-3, at Barcın Höyük V, sheep outnumber goat which is likely due to sheep being better adapted to the local cli-

matic conditions (Galik 2014, 391). Also, as in the case of Küllüoba, fallow deer, and deer in general, play a comparatively minor role which is likely also due to the unfavourable local environment for this species (Galik 2014, 386, 388, Pl. 1).

The inconsistent nature of the publication of results in Late Chalcolithic western Anatolia makes comparison of faunal assemblages difficult. But some general observations can however be made. Where weight data is published, in the case of Çukuriçi Höyük, Küllüoba, Kumtepe and Barcın Höyük, cattle are making up a third to a half of assemblages by weight. It is also noticeable that more northerly or inland sites like Kumtepe, Barcın Höyük, and Küllüoba are more sheep dependant than goat, and in the case of the latter two sites, the lack of deer may be due to the local environmental conditions. Otherwise, there is a deal of variability in subsistence strategy across the region, particularly when it comes to reliance on pig, which varies from being the most important resource (Kumtepe) to making up under 10% by NISP such as at Çukuriçi Höyük. Moving into the more securely EBA dated levels in these sites, where published data is available, some degree of homogenisation can instead be seen, with a general trend towards more caprine herding being recognised at several sites like Kumtepe C (Uerpmann 2006, 285, Fig. 1), Aphrodisias (Crabtree & Monge 1986, 181, Table 10), and Küllüoba 2-1 (FB 1: Gündem 2010, 76, Table 4-13; Gündem 2012, 85, Table CII-3). In contrast, at Çukuriçi Höyük the relative proportion of mammal species remains remarkably stable from the Late Chalcolithic to EBA with an already high proportion of caprine herding. This might be considered consistent with, despite the periodic episodes of settlement burning, the relatively smooth and continuous transition into the EBA phases as already indicated by studies of the material culture of the settlement (Röcklinger 2015; Schwall 2018, 232-36).

## 6 Conclusion

Whilst the faunal remains from the Late Chalcolithic levels of Çukuriçi Höyük is of an only limited sample size, it is nonetheless a valuable result due to general lack of published faunal remains from this period in western Anatolia. Additionally, where there is published comparison material available it is often of inconsistent recording and publication style making comparison between sites difficult. The similarity in the species from the Late Chalcolithic through to the EBA remains suggests a great deal of continuity in animal husbandry practices at the site. These practices primarily being a mixture of goat and cattle herding. However, the herding of sheep, and keeping of pigs, hunting of deer, and mollusc collecting also play a significant role. Less well understood is the role of fishing and bird

catching, as few remains were recovered from these species, but this is likely due to flotation remains being left unexamined. Whilst at Late Chalcolithic Çukuriçi Höyük there is already a great reliance on caprine herding which continues into the EBA, looking in the wider region, we see a great deal of variability in strategies. Cattle appears to be relatively important at all sites, but pig keeping appears to be far more important in particular in the more northerly sites. In a number of sites this appears to shift, going into the EBA, towards a more caprine based subsistence strategy.

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ÇuHö Vb	NISP	Weight (g)	NISP %	Weight (g) %
Cattle	11	198	2.0	9.3
Large mammal	54	239.5	9.6	11.2
Sheep/Goat	60	220.9	10.7	10.3
Sheep	3	27.8	0.5	1.3
Goat	7	35	1.2	1.6
Medium sized mammal	107	198.3	19.0	9.3
Pig	9	39.6	1.6	1.9
Fallow deer	6	48.3	1.1	2.3
Cervidae	1	11.6	0.2	
Dog	4	19.3	0.7	0.9
Birds	1	0.9	0.2	
Molluscs	254	915.6	45.1	42.8
Fish	2	0.7	0.4	
Unidentified	34	42.5	6.0	2.0
Other	10	140	1.8	6.5
Total:	563	2138	100	100
ÇuHö VIa	NISP	Weight (g)	NISP %	Weight (g) %
Cattle	1	18.3		
Large mammal	5	25		
Sheep/Goat	4	11.8		
Sheep				
Goat				
Pig	1	6.2		
Medium sized mammal	14	19.7		
Fallow deer	2	18		
Cervidae				
Dog				
Birds				
Molluscs	49	98.9		
Fish				
Unidentified	3	2.1		
Other				
Total:	79	200		
ÇuHö VIb	NISP	Weight (g)	NISP %	Weight (g) %
Cattle				
Large mammal	2	13.2		
Sheep/Goat	4	11.6		
Sheep				
Goat				
Pig				
Medium sized mammal	6	7.2		
Fallow deer	2	14.5		
Cervidae				
Dog				
Birds				
Molluscs	3	39.5		
Fish				
Unidentified				
Other				
Total:	17	86		
ÇuHö VII	NISP	Weight (g)	NISP %	Weight (g) %
Cattle	13	312.5	6.3	31.6
Large mammal	24	103	11.7	10.4
Sheep/Goat	38	151.6	18.4	15.3
Sheep				
Goat	2	12.5	1.0	1.3
Pig	7	35	3.4	3.5
Medium sized mammal	86	140	41.7	14.2
Fallow deer	1	8.5	0.5	0.9
Cervidae				
Dog				
Birds				
Molluscs	34	224.5	16.5	22.7
Fish				
Unidentified				
Other	1	0.5	0.5	0.1
Total	206	988.1	100	100

Appendix 1: Summary of faunal remains from the Late Chalcolithic levels of Çukuriçi Höyük by (sub)phase.

	Aphrodisias		Emporio		Kuruçay Höyük		Küllüoba				Kumtepe
	NISP	NISP %	NISP	NISP %	NISP	NISP %	NISP	Weight (g)	NISP %	Weight %	Weight %
Cattle	105	11.5	91	34.2	18	35.3	106	2325.9	22.9	43.5	32.0
Caprine	252	27.7	145	54.5	8	15.7	204	1010.9	44.2	18.9	
Sheep	15	1.6					23	377.7	5.0	7.1	16.0
Goat	24	2.6					14	141.2	3.0	2.6	4.0
Deer	280	30.8	9	3.4			7	179.1	1.5	3.3	
Pig	214	23.5	21	7.9	12	23.5	80	933.8	17.3	17.4	48.0
Dog	16	1.8					7	55.6	1.5	1.0	
Rodents							1	0.4	0.2	0.0	
Other	4	0.4			13	25.5	20	327.4	4.3	6.1	
Total	910		266		51		462	5352			

Appendix 2: Percentage NISP of Late Chalcolithic sites. Aphrodisias-Pekmez (Crabtree & Monge 1986, 181 Table 9), Emporio (Clutton-Brock 1982, 679, Fig. 300), Kuruçay Höyük (Deniz & Şentuna 1988, 172, Table 2), Küllüoba (Gündem 2003, 84, CII-2), Kumtepe (Uerpmann 2006, 285).

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