

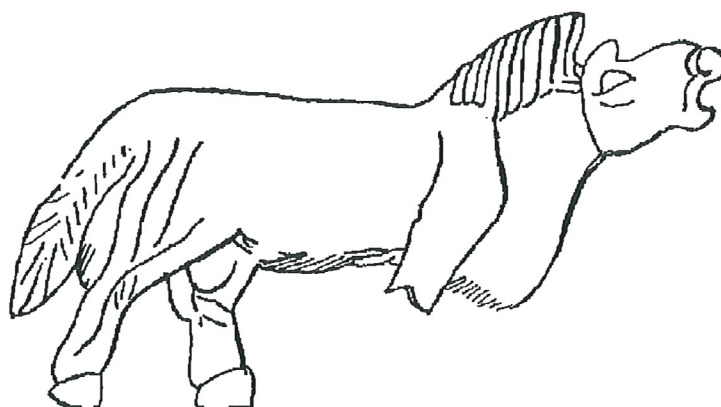


ARCHAEOZOOLOGY OF THE NEAR EAST IV A

Proceedings of the fourth international symposium on the
archaeozoology of southwestern Asia and adjacent areas

edited by

M. Mashkour, A.M. Choyke, H. Buitenhuis and F. Poplin



ARC - Publicatie 32
Groningen, The Netherlands, 2000

Cover illustration:

Przewalski from Susa (nacre – mother of pearl)

Dated to 2500 – 2000 BC, identified by F. Poplin

copyright:

Centre for Archeological Research and Consultancy

Groningen Institute for Archaeology

Rijksuniversiteit Groningen The Netherlands

Printing: RCG -Groningen

Parts of this publication can be used if source is clearly stated.

Information: Centre for Archeological Research and Consultancy

Poststraat 6, 9712 ER Groningen, The Netherlands

ISBN 90 – 367 – 1243 - 2

NUGI 644 - 134

Contents

VOLUME A

Preface	A
Deborah Bakken	11
Hunting strategies of Late Pleistocene Zarzian populations from Palegawra Cave, Iraq and Warwasi rock shelter, Iran	
Daniella Zampetti, Lucia Caloi, S. Chilardi and M.R. Palombo	18
Le peuplement de la Sicile pendant le Pléistocène: L'homme et les faunes	
Sarah E. Whitcher, Joel C. Janetski, and Richard H. Meadow	39
Animal bones from Wadi Mataha (Petra Basin, Jordan): The initial analysis	
Liora Kolska Horwitz and Eitan Tchernov	49
Climatic change and faunal diversity in Epipalaeolithic and Early Neolithic sites from the Lower Jordan valley	
Paul Y. Sondaar and Sandra A.E. van der Geer	67
Mesolithic environment and animal exploitation on Cyprus and Sardinia/Corsica	
Pierre Ducos	74
The introduction of animals by man in Cyprus: An alternative to the Noah's Ark model	
Jean-Denis Vigne, Isabelle Carrère, Jean-François Saliège, Alain Person, Hervé Bocherens, Jean Guilaine and François Briois	83
Predomestic cattle, sheep, goat and pig during the late 9 th and the 8 th millennium cal. BC on Cyprus: Preliminary results of Shillourokambos (Parekklisha, Limassol)	
Norbert Benecke	107
Mesolithic hunters of the Crimean Mountains: The fauna from the rock shelter of Shpan'-koba	
Hitomi Hongo and Richard H. Meadow	121
Faunal remains from Prepottery Neolithic levels at Çayönü, Southeastern Turkey: a preliminary report focusing on pigs (<i>Sus</i> sp.)	
Gulcin İlgezdi	141
Zooarchaeology at Çayönü: a preliminary assessment of the red deer bones	
Banu Oksuz	154
Analysis of the cattle bones of the Prepottery Neolithic settlement of Çayönü	
Nerissa Russell and Louise Martin	163
Neolithic Çatalhöyük: preliminary zooarchaeological results from the renewed excavations	
Alice M. Choyke	170
Bronze Age bone and antler manufacturing at Arslantepe (Anatolia)	
Ofer Bar-Yosef	184
The context of animal domestication in Southwestern Asia	
Cornelia Becker	195
Bone and species distribution in late PPNB Basta (Jordan) - Rethinking the anthropogenic factor	
Justin Lev-Tov	207
Late prehistoric faunal remains from new excavations at Tel Ali (Northern Israel)	
Daniella E. Bar-Yosef Mayer	217
The economic importance of molluscs in the Levant	
Daniel Helmer	227
Les gazelles de la Shamiyya du nord et de la Djézireh, du Natoufien récent au PPNB: Implications environnementales	
Maria Saña Seguí	241
Animal resource management and the process of animal domestication at Tell Halula (Euphrates Valley-Sria) from 8800 bp to 7800 bp	

Contents

VOLUME B

Chiara Cavallo, Peter M.M.G. Akkermans and Hans Koenis	5
Hunting with bow and arrow at Tell Sabi Abyad	
Caroline Grigson	12
The secondary products revolution? Changes in animal management from the fourth to the fifth millennium, at Arjoune, Syria	
Barbara Wilkens	29
Faunal remains from Tell Afis (Syria)	
Margarethe Uerpmann and Hans-Peter Uerpmann	40
Faunal remains of Al-Buhais 18: an Aceramic Neolithic site in the Emirate of Sharjah (SE-Arabia) - excavations 1995-1998	
Angela von den Driesch and Henriette Manhart	50
Fish bones from Al Markh, Bahrain	
Mark Beech	68
Preliminary report on the faunal remains from an 'Ubaid settlement on Dalma Island, United Arab Emirates	
Jean Desse and Nathalie Desse-Berset	79
Julfar (Ras al Khaimah, Emirats Arabes Unies), ville portuaire du golfe arabo-persique (VIII ^e -XVII ^e siècles): exploitation des mammifères et des poissons	
Chris Mosseri-Marlio	94
Sea turtle and dolphin remains from Ra's al-Hadd, Oman	
Hervé Bocherens, Daniel Billiou, Vincent Charpentier and Marjan Mashkour	104
Palaeoenvironmental and archaeological implications of bone and tooth isotopic biogeochemistry (¹³ C ¹⁵ N) in southwestern Asia	
Sándor Bökönyi † and László Bartosiewicz	116
A review of animal remains from Shahr-i Sokhta (Eastern Iran)	
Ann Forsten	153
A note on the equid from Anau, Turkestan, " <i>Equus caballus pumPELLii</i> " Duerst	
Alex K. Kasparov	156
Zoomorphological statuettes from Eneolithic layers at Ilgynly-depe and Altyn depe in South Turkmeniya	
László Bartosiewicz	164
Cattle offering from the temple of Montuhotep, Sankhkara (Thebes, Egypt)	
Louis Chaix	177
A hyksos horse from Tell Heboua (Sinai, Egypt)	
Liliane Karali	187
Evolution actuelle de l'archéozoologie en Grèce dans le Néolithique et l'Age du Bronze	
Emmanuelle Vila	197
Bone remains from sacrificial places: the temples of Athena Alea at Tegea and of Asea on Agios Elias (The Peloponnese, Greece)	
Wim Van Neer, Ruud Wildekamp, Marc Waelkens, Allan Arndt and Filip Volckaert	206
Fish as indicators of trade relationships in Roman times: the example of Sagalassos, Turkey	
Ingrid Beuls, Bea De Cupere, Paul Van Mele, Marleen Vermoere, Marc Waelkens	216
Present-day traditional ovicaprine herding as a reconstructional aid for understanding herding at Roman Sagalassos	

NEOLITHIC ÇATALHÖYÜK: PRELIMINARY ZOOARCHAEOLOGICAL RESULTS FROM THE RENEWED EXCAVATIONS

Nerissa Russell¹ and Louise Martin²

Abstract

The new excavations at Çatalhöyük have provided an opportunity to reassess the animal remains from this important Neolithic site. Both the excavations and the analysis are in a preliminary stage, but it is already possible to make some important observations. Judging from the animal bones recovered during the first three seasons of renewed excavations in two areas of the site, it seems clear that the dominance of cattle bones reported from the earlier excavations was likely to be due to biased collection methods. Sheep are by far the most numerous taxon at Çatalhöyük, and equids form a substantial part of the earlier assemblages. The symbolic importance of cattle remains clear, however, although issues of domestication of these and other ungulates remain to be resolved.

Résumé

Les nouvelles fouilles à Çatalhöyük ont offert l'occasion de réévaluer les restes animaux de cet important site néolithique. Aussi bien la fouille que les analyses sont à une étape préliminaire, mais il est désormais possible de faire quelques observations importantes. A en juger par les restes fauniques des trois premières campagnes de la nouvelle fouille dans deux parties du site, il apparaît que la prédominance des restes de bœuf observée lors des premières fouilles était due à un biais des méthodes de collecte. Le mouton est de loin le taxon le plus représenté à Çatalhöyük et les équidés constituent une part importante des assemblages les plus anciens. Cependant, l'importance symbolique du bœuf est incontestable, même si les modalités de la domestication de cet ongulé ainsi que d'autres restent à établir.

Key Words: Anatolia, Neolithic, Cattle, Zooarchaeology

Mots Clés: Anatolie, Néolithique, Boeuf, Archéozoologie

Introduction

The well-known Neolithic site of Çatalhöyük is located in the Konya Plain in Central Anatolia. The site was discovered and excavated by James Mellaart in the 1960s (Mellaart 1967, 1976). These excavations attracted international attention for many reasons; notably the spectacular reliefs, bucrania, and wall-paintings Mellaart uncovered at this large tell site.

One sample of animal bones from those excavations was studied by Perkins (1969) and was only very partially published, and another collection was fully reported on by Ducos (1988). Beyond presenting a species list for the site, Perkins' report focused on the status of the cattle, concluding through a metrical study that cattle became domesticated halfway through the occupational sequence, and constituted approximately 70% of the faunal remains. Since that time, some doubt has been cast on the validity of this metrical study (Grigson 1989: 87, 92-93, Figure 5). By contrast, Ducos' study found the cattle to be morphologically wild, but suggested that both they and the sheep had been subject to *proto-élevage*, on the basis of cull patterns.

From these claims, the site achieved fame as a possible centre of cattle domestication, and also led Sherratt (1982) to propose that the size of the site, and elaborate art, rested on a base of wealth derived from exporting cattle to surrounding settlements that had not yet domesticated their own.

¹ Cornell University, Department of Anthropology, Cornell University, Ithaca, NY 14853.

² Institute of Archaeology, University College London, 31-34 Gordon Square, London WC1H 0PY, UK.

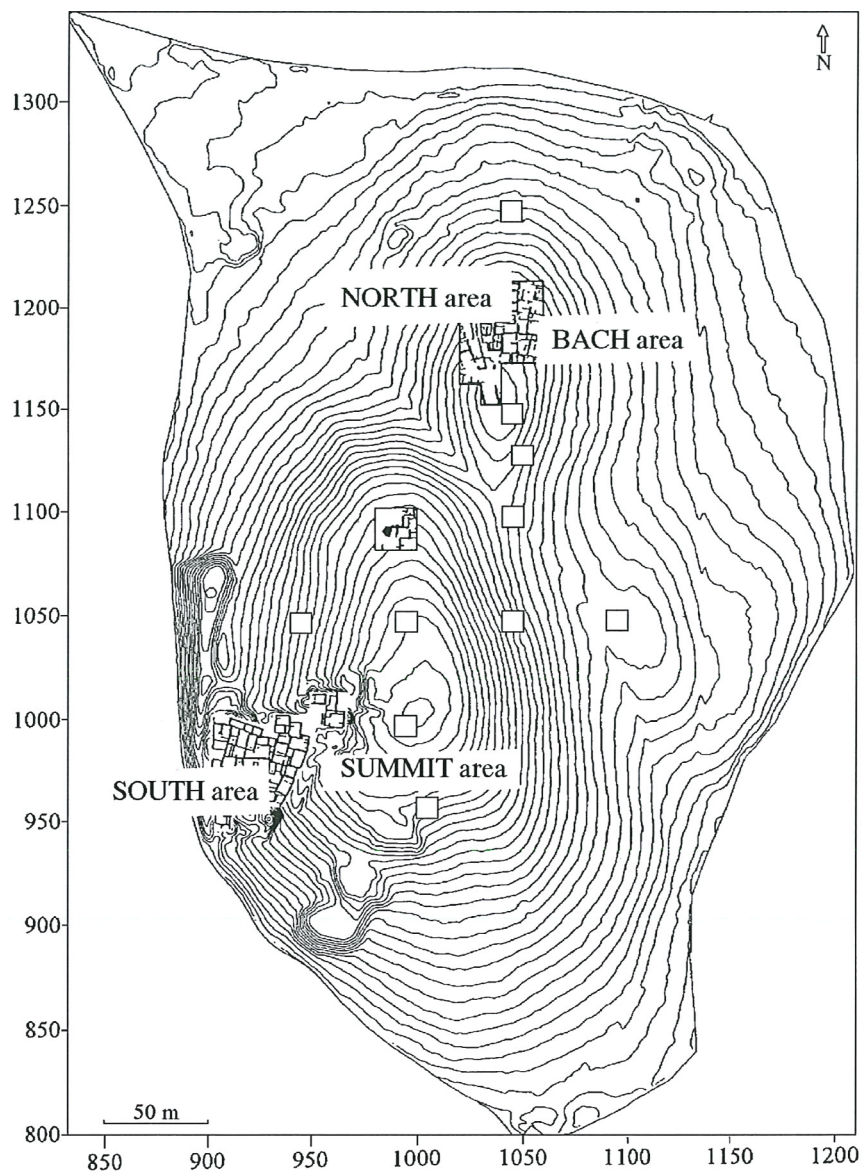


Fig. 1. A contour plan of Çatalhöyük (east) showing the excavation areas mentioned in the text (adapted from Hodder and Matthews 1998)

Unfortunately, the animal bones from the 1960's excavation do not seem to have survived for re-analysis, and it is only through the study of the material from the new project at Çatalhöyük, directed by Ian Hodder of the Cambridge University, that we can re-evaluate these ideas and seek new information about the Çatalhöyük fauna. We report here on the first three years of renewed excavation at the site (minor excavations in 1995, and two full seasons in 1996 and 1997; Hodder 1996, 1997, Hodder and Matthews 1998). While the analysis of the abundant animal bone from these three seasons is not yet complete, we have done sufficient work to offer some preliminary observations, although we expect these to be refined and revised with further work. So far, the new excavations have taken place in four areas of the site (Fig. 1):

1. continuing down from Mellaart's excavations (designated 'South')
2. directly to the east of this is designated 'Summit'
3. an area on the northern prominence of the tell is designated 'North'

4. immediately to the east of this is another excavation area designated 'BACH'.

Most of the fauna so far analyzed derives from the South and North excavation areas. Mellaart (1967, 1976) interpreted the stratigraphy as showing 12 major occupation levels (with level XII at the base), dating from the late 9th to the 8th millennia bp. The house excavated in the Summit area appears to correspond to Mellaart's level IV/V; the house in the North area seems to correspond to level VI; the areas excavated so far in the South area would correspond to levels VII-IX. Further chronological studies are presently in progress, so that these period assignments may change slightly.

New work

The aims of the new zooarchaeological work at Çatalhöyük are multiple. An obvious question remains concerning the domestic status of many of the taxa, such as cattle, sheep, goat and pig/boar. While this forms a major focus of our research and we can offer some impressionistic observations, we do not as yet have adequate metrical data to address the issue seriously; the bone material tends to be highly fragmented, resulting in relatively few measurable specimens. Another major focus of work is the spatial differences in faunal patterning on the site, both across the different excavation areas, and between and within different houses. We also feel that the bone assemblages and rich contextual information available offer a particularly good opportunity to explore how carcasses were treated, consumed and deposited, both as food and symbols.

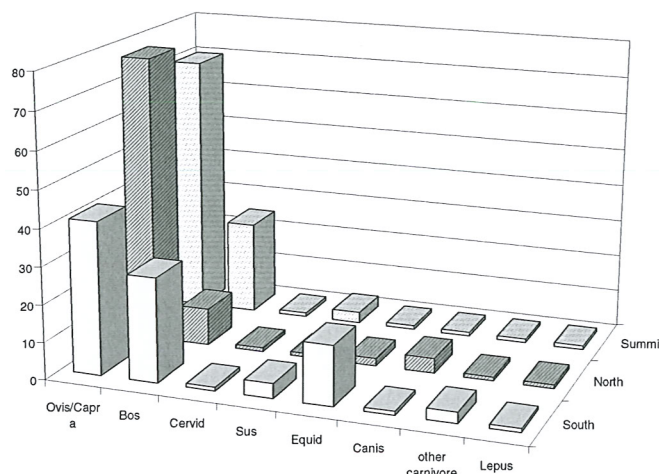


Fig. 2. Percentages of identified mammals at Çatalhöyük by excavation area (diagnostic zones)

Taxonomic representation

Perhaps the most fundamental revision to the picture of the Çatalhöyük fauna derived from the earlier excavations concerns the balance of taxa (Fig. 2). Results so far are based on the following sample sizes: 1644 NISP (Number of Identified Specimens) and 425 DZ (Diagnostic Zones) for the South Area; 1204 NISP and 115 DZ for the North Area; 754 NISP and 156 DZ for the Summit. A broad range of species appears at the site, including sheep, goat, cattle, equids, pig, deer, dog, wolf, fox, hare and small numbers of various wild carnivores. In all areas of current excavation, however, sheep and goat predominate. They range, for example, from over 40% in the South area to approximately 80% in the North area, as quantified by Watson's (1979) diagnostic zones method. The pro-

portions of cattle are far lower than indicated in the previous reports; they constitute less than 25% in all areas.

It therefore seems likely that the 70% of cattle reported by Perkins (1969) was a severe over-estimation. As was already evident to Ducos (1988), the retrieval method used in the 1960s' excavations, that of hand collection, was highly selective and would have favoured large pieces to the extent that cattle were substantially over-represented. In the present excavations, all deposits from the site are screened through a 4mm mesh, thus reducing retrieval bias.

Brief observations on the major taxonomic categories

Sheep/goat

In each of the areas studied, the majority of the identifiable sheep/goat bones are from sheep (Table 1). Although there are as yet insufficient metrical data to assess the sizes or size changes of the sheep and goat, the impression is that their bones sort into two distinct sizes that are probably beyond the expectations of sexual dimorphism. The majority of both taxa appear to be in the smaller size category. One morphologically wild sheep horn core has been recovered from the South area, and a number of wild goat horn cores are also present in the North area.

Thus, we suspect that both wild and domestic caprines are present, but this impression clearly requires further exploration when larger samples are available, both for metrical analyses and assessment of other domestication criteria. It would not be surprising if domestic sheep *were* present since there is fairly widespread acceptance that they were domesticated by the latter part of 9th millennium bp (mid-late PPNB), and had indeed been imported to regions beyond their natural habitat soon after (Garrard *et al.* 1996).

Table 1. Sheep : Goat Ratios (Based on diagnostic zones)

SOUTH area	7 : 1
NORTH area	8 : 1
SUMMIT area	11 : 1

Deer

Both red and roe deer have been recovered from the site, although fallow deer remains a possibility, given several fragments of antler that are somewhat flattened but too small to be clearly diagnostic. The cervids are represented almost entirely by antler, much of it worked. Thus their presence at the site may be largely due to the acquisition of antler by collection or exchange, rather than procurement and consumption of the whole body. This pattern is particularly interesting given the well-known depictions of deer being hunted or captured in the wall art.

Boar/pig

Few *Sus scrofa* remains have been identified, constituting less than 5% of the total bone remains. The impression so far is that the dentition is very large, maybe suggesting that the animals were morphologically wild. This forms an interesting contrast to the early Neolithic sites of Çayönü and Hallan Çemi in eastern Anatolia, where they are present in high proportions and it has been suggested that they may be domestic (Lawrence 1982; Rosenberg *et al.* 1995, but see also Hongo and Meadow 1998).

Equids

From the South area, equid bones constitute 17% of the assemblage, although they are lower elsewhere. Following the criteria given by Davis (1980), which are based on the enamel patterning in teeth, we have tentatively identified three species of equid (Fig. 3). The most numerous is *Equus hydruntinus* (European wild ass), while *E. hemionus* and *E. caballus* are present in smaller quantities. The equid teeth from the Summit area belong mainly to *E. caballus*, both in terms of their size and

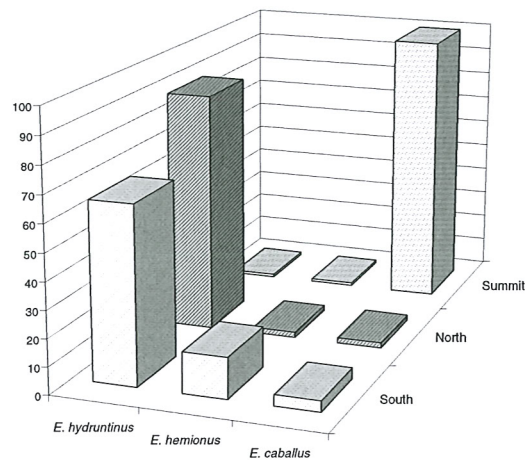


Fig. 3. Percentage of Identified Equid Species (NISP)

morphology. It is interesting to note that this larger equid still inhabits Central Anatolia during this period, since until recently it was assumed to be absent during the early Holocene (Clutton-Brock 1992: 56). Our identification therefore adds to the evidence recently reported by Buitenhuis from the nearby Aceramic Neolithic site of Aşıklı Höyük for *E. caballus* (Buitenhuis, pers. comm).

Cattle

The cattle from all the excavation areas appear to sort visually into two sizes, again beyond expectations of sexual dimorphism. Once more, the high degree of fragmentation of the bones means that the number of measured specimens is low. This size difference is intriguing, and will be pursued in future work.

We have recovered several morphologically wild horn cores, and as yet, no clearly domestic horn cores, but there is considerable variation in size and shape that may exceed that attributable to sexual and individual variation within a wild population, as will be discussed below (Table 2).

Symbolic aspects of the animal remains

The depictions of animals in the wall paintings and reliefs at Çatalhöyük, and incorporation of animal parts into architecture, is an unmistakable indication of the symbolic importance of animals, especially cattle. While sheep are the most common animal in the bone assemblages, they are rarely seen in representations. The deer on the other hand, while extremely scarce in the faunal assemblage, figure prominently in the art. The considerably more common equids are depicted in wall paintings, but their body parts are not used as architectural installations (the opposite to the treatment of sheep). The play-off between animals and their representations has great potential for providing insights into the value and meaning of animals at Çatalhöyük.

The new excavations have yielded further examples of cattle horn cores and skulls that may have been incorporated into the architecture of the houses. One, from House 1 in the North area, was still set in the wall. A single horn core with an attached frontal was found leaning against the outer side of a wall of this same house. It was unplastered, burnt and well preserved. The finds associated with this horn core might suggest that it was an unusual and special deposit: a large bird ulna with abundant cut marks, a complete dog skull with mandibles and atlas, and two wild goat horn cores.

Table 2. Cattle Horn Core Measurements (mm)

Area Specimen	South 2375.X1	North 1952.X1	North 1347.X1	BACH 2210.X11
Greatest Length	580	320	275	-
Greatest Length of Outer Curvature	730	426	343	-
Greatest Diameter at Base	114	104.5	58	94.5
Circumference at Base	299	-	180	-

In the BACH area, there is abundant evidence for the use of cattle horns in structural installations. A bucranium and several other horn cores were lying in a small room, where they appear to have fallen from a wall, recalling the stacks of horn cores set into walls from Mellaart's excavations. Nearby were fragments of a human skull and a large flint dagger with an elaborately carved bone handle in the form of the head of an animal, most likely a boar.

The largest horn core found as yet was on the floor of a Level IX house in the South area. This was lying on its side, dorsal face up, as if fallen from the house wall. It appears to belong to a morphologically wild male. It seems that the horn core was not part of a larger bucranium installation, since neither the greater part of the skull, nor the opposite horn core were found. Instead, it may have been a single horn placed in the west wall of the building.

In conclusion, while the economic importance of cattle may have been exaggerated in Perkins' 1960s' work on the Çatalhöyük fauna (Perkins 1969), it remains clear that cattle in particular, and animals in general, were highly valued in symbolic roles. We can also confirm that such symbolic behaviour was not confined to a small corner of the settlement, as Mellaart had suggested. Indeed, the elaborate buildings, including the placement of animal parts within the architecture, seem to characterize each excavation area. There is no support for the notion that the southwest area of the *tell* was a 'priestly quarter'. We expect that the careful recovery practiced in the new excavations, in combination with a full contextual analysis of the animal bone remains, will yield many more insights into the use and treatment of animals at what remains a remarkable Neolithic site.

Acknowledgments

We would like to thank the Turkish Ministry of Culture, Directorate General of Monuments and Museums for allowing us to carry out this work. The study was supported by a grant from the National Geographic Society. We are extremely grateful to Banu Aydinoğlu, Dušan Borić, Denise Caruthers, Afroditi Konstantinidou, Léola LeBlanc, Robert Symmons and Kathy Twiss for their valuable assistance with identification and recording during the field seasons.

References

- Clutton-Brock, J., 1992. *Horse Power: A History of the Horse and the Donkey in Human Societies*. Cambridge: Harvard University Press.
- Davis, S., 1980. Late Pleistocene and Holocene equid remains from Israel. *Zoological Journal of the Linnean Society* 70: 289-312.
- Ducos, P., 1988. *Archaeozoologie quantitative - Les valeurs numériques immédiates à Çatal Hüyük*. Les Cahiers du Quaternaire, No. 12.
- Garrard, A., S. Colledge and L. Martin, 1996. The emergence of crop cultivation and caprine herding in the "Marginal Zone" of the southern Levant. In: D.R. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*. London: UCL Press: 204-226.

- Grigson, C., 1989. Size and sex: Evidence for the domestication of cattle in the Near East. In: A. Milles, D. Williams and N. Gardner (eds.), *The Beginnings of Agriculture*. British Archaeological Reports, International Series, No. 496: 77-109.
- Hodder, I., 1996. Çatalhöyük. *Anatolian Archaeology* 2: 6-7.
- Hodder, I., 1997. Çatalhöyük. *Anatolian Archaeology* 3: 4-5.
- Hodder, I. and R. Matthews, 1998. Çatalhöyük: The 1990s seasons. In: R. Matthews (ed.), *Fifty Years' Work by the British Institute of Archaeology at Ankara*. Ankara: British Institute of Archaeology at Ankara: 43-51.
- Hongo H. and R.H. Meadow, 1998. Pig exploitation at Neolithic Çayönü Tepesi (Southeastern Anatolia). Masca Research Papers in Science and Archaeology, vol. 15: 77-98.
- Lawrence, B., 1982. Principal food animals at Çayönü. In: L. S. Braidwood and R.J. Braidwood (eds.), *Prehistoric Village Archaeology in South-Eastern Turkey*. British Archaeological Reports, International Series, No. 138: 175-199.
- Mellaart, J., 1967. *Çatal Hüyük: A Neolithic Town in Anatolia*. London: Thames & Hudson.
- Mellaart, J., 1976. A Neolithic city in Turkey. In: B. Fagan (ed.), *Avenues to Antiquity: Readings from Scientific American*. San Francisco: W. H. Freeman: 141-150.
- Perkins, D., 1969. Fauna of Çatal Hüyük: Evidence for early cattle domestication in Anatolia. *Science* 164: 177-179.
- Rosenberg, M., R.M. Nesbitt, R.W. Redding and T.F. Strasser, 1995. Hallan Çemi Tepesi: Some preliminary observations concerning early Neolithic subsistence behaviors in eastern Anatolia. *Anatolica* 21: 1-12.
- Sherratt, A.G., 1982. Mobile resources: Settlement and exchange in early agricultural Europe. In: C. Renfrew and S. Shennan (eds.), *Ranking, Resource and Exchange: Aspects of the Archaeology of Early European Society*. Cambridge: Cambridge University Press: 13-26.
- Watson, J.P.N., 1979. The estimation of the relative frequencies of mammalian species: Khirakitia 1972. *Journal of Archaeological Science* 6:127-137.