

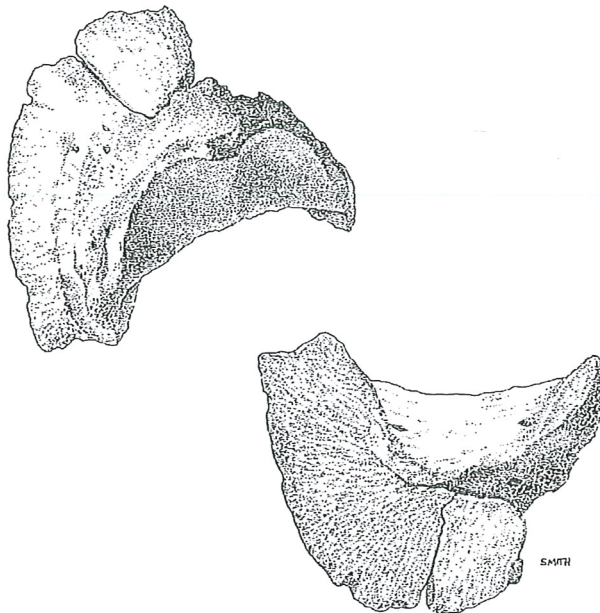


ARCHAEOZOOLOGY OF THE NEAR EAST III

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

edited by

H. Buitenhuis, L. Bartosiewicz and A.M. Choyke



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Cover illustration: Dorsal and palmar aspects of a
Bronze Age horse phalanx from Arslantepe, Turkey,
identified by Sándor Bökönyi.
Courtesy by the artist, Patricia Smith (Reduction: 64%).

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Preface

This publication is the result of the third international symposium on archaeozoology of southwestern Asia and adjacent areas, held in Budapest, Hungary from 2 - 5 September 1996. The editors would like to thank all colleagues of the Working Group who helped with the translation of abstracts. Financial support for the publication was given by the Acker Stratingh Stichting, Groningen, The Netherlands.



Participants of the 3rd ASWA Conference, Budapest 1996
(Photo: Péter Komjáthy, Aquincum Museum)

Standing, left to right: B. De Cupere (Belgium), G. Bar Oz (Israel), H. Buitenhuis (The Netherlands), R. Rabinovich (Israel), L. Leblanc (New Zealand), N. Benecke (Germany), H. Hongo (Japan), N. Russell (USA), J. Speth (USA), A. Patel (India), E. Stephan (Germany), C. Cavallo (The Netherlands), W. Van Neer (Belgium), A.T. Clason (The Netherlands), T. Dayan (Israel), L. Van Es (The Netherlands), C. Becker (Germany), R. Meadow (USA), M. Mashkour (France), F. Poplin (France), E. Vila (France), Mrs. Poplin (France), L. Bartosiewicz (Hungary), E. Pellé (France), P. Ducos (France).

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ANIMAL REMAINS FROM THE NEOLITHIC AND BRONZE AGE SETTLEMENTS AT KIRKLARELI (TURKISH THRACE)

Norbert Benecke¹

Zusammenfassung

Bei archäologischen Untersuchungen in Kirklareli (Türkisch-Thrakien) sind Kulturschichten aus dem Zeitraum vom Mittelneolithikum bis zur Hellenistischen Zeit aufgedeckt worden. Die bisherigen zoologischen Befunde werden dargestellt und in ihrer Bedeutung für die Entwicklung dieser region zwischen Europa und Asien diskutiert. Es erfolgen Vergleiche zwischen den Siedlungsphasen von Kirklareli und mit anderen Fundplätzen des Gebietes.

Introduction

Thrace is one of the areas in Turkey where archaeological research has only been carried out on a limited scale over the last decades. This is mainly due to the fact that before the collapse of the communist system in Eastern and South-Eastern Europe, this region located next to the Bulgarian border was a military security zone. As a consequence, large scale archaeological excavations could not be carried out there, especially in the northwest of this region. With the political changes in 1989, Thrace has become more and more attractive to archaeologists, not only because it is archaeologically still a blank spot in Turkey, but also because this region is of major importance for studying cultural relations between southeastern Europe and Asia Minor practically in all prehistoric periods. The latter was the main reason for starting excavation work around the provincial town of Kirklareli in Northern Thrace in 1993 (Fig. 1). These excavations were carried out as a joint project between the Archaeological Institute in Istanbul and the German Archaeological Institut in Berlin, under the direction of Mehmet Özdoğan (Istanbul) and Hermann Parzinger (Berlin). This contribution reports briefly on results of the archaeozoological research on the animal remains from the first three seasons of excavation (1993-1995) in Kirklareli.

The site

Excavations are taking place or have already been finished at three sites in an area on the southern outskirts of Kirklareli. These are the Middle Neolithic mound (B5/13), also called "Asagi Pinar" and two sites (B5/18 and B5/17) in the region called "Kanligeçit" (Fig. 2). On site B5/18 some soundings were carried out, leading to the discovery of pits from different cultures of the Late Neolithic and Early Bronze Age. Site B5/17 is a Bronze Age settlement, where systematic excavations began two years ago.

The faunal material

Table 1 contains information as to the size of the investigated samples from the different sites and their chronological positions. From mound Asagi Pinar, the animal remains derive from two periods. Most material comes from the Middle Neolithic tell site. These remains can be assigned to different settlement phases, called layers here, with layer 5 being the oldest and layer 1 the youngest.

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Figure 1. Location of Kırklareli and some of the prehistoric sites used for comparison.
 1= Kırklareli, 2= Goljamo Delçevo, 3=Anza, 4=Sitagroï, 5=Kastanas, 6= Achilleion, 7= Fikirtepe.

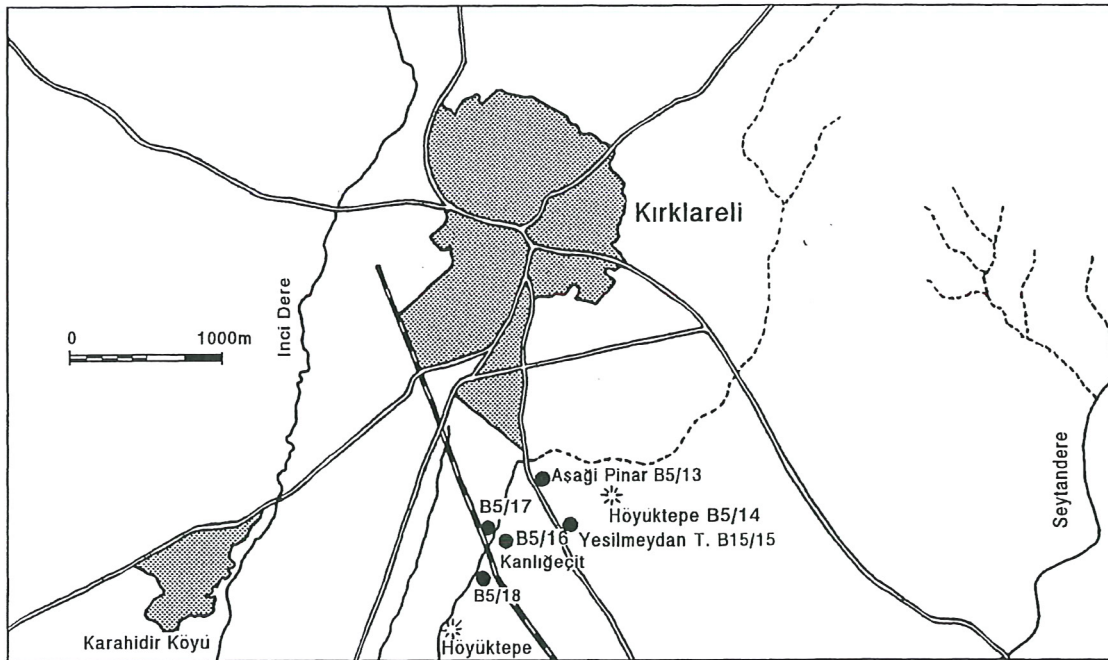


Figure 2. Location of the excavated sites by Kırklareli.

Kirkklareli - Asagi Pinar B5/13 (1993 - 1995).	
- Middle Neolithic Tell (Karanovo II - IV)	
layer 5	3018
layer 4	6144
layer 3	10064
layer 2	3054
layer 1	60
- Hellenistic pits	animal skeletons
Kirkklareli - Kanligeçit B5/18 (1994).	
- Pits (Precucuteni, Gumelnitza Ezero, Troy V)	
	c. 2000
Kirkklareli - Kanligeçit B5/17 (1995)	
- Middle Bronze Age settlement	
	1614

Table 1. Sites and archaeological features at Kirkklareli with numbers of identified remains.

eral phases of settlement. The main horizon belongs to the end of the Early or to the beginning of the Middle Bronze Age. It corresponds more or less with the period Troy V. Up to the end of last year's campaign about 1600 identified bones had been studied from this site.

After having given a brief overview of the chronology and the size of the different samples, the fauna itself will now be considered. Table 2 displays a list of the identified species from the different sites at Kirkklareli. Not included are the bird remains, which have not yet been identified. The fauna comprises seven species of domestic mammals, fifteen species of wild mammals, one tortoise species and three molluscan species. The rich wild mammal fauna is represented by hare, beaver, eight carnivore species including lion, wild pig, three deer species and aurochs. Table 2 presents the occurrence of the identified species in the different chronological units which are arranged as a time series. From the Hellenistic pits there are only remains from domestic animals. As has already been mentioned, these are mainly whole skeletons or their special parts. The occurrence of horse bones in the different chronological units is interesting. The earliest evidence of this species comes from an Ezero pit at Kanligeçit. As wild horse is completely missing in the large bone material from the neighbouring Middle Neolithic mound, we consider these bones as coming from domestic horses. Whether they really belong to the Ezero context still needs to be checked by ¹⁴C-dating. Of nearly the same age are the oldest horse bones from Kastanas (Macedonia), found there in the Early Bronze Age layer 25 (Becker, 1986, table 30). There are also horse bones in the younger Troy V pit, and they were found in larger quantities in the Middle Bronze Age settlement at Kanligeçit B5/17, which mainly dates to Troy V. Evidence for domestic cat comes only from the Hellenistic pits. If one compares the wild mammal fauna from the Middle Neolithic layers with the fauna of the Bronze Age settlement, it can easily be seen that most species occur in both periods. An interesting exception is the lion. Up to now, lion remains have been identified only among the bone remains from the Middle Neolithic period (AP4 and AP3 in Table 2).

Chronologically they belong to Karanovo periods II, III and IV. Altogether approximately 22,000 identified animal remains have so far been studied from the Kirkklareli tell site. Most material comes from layers 3 and 4. During this year's excavations settlement remains from the Early Neolithic Karanovo I period were also discovered, in different parts of the mound. A second group of archaeozoological remains coming from the mound are animal skeletons found together with sherds and other archaeological objects in Hellenistic pits. At that time, pits were dug into the mound to a depth of up to two meters. They were probably used for sacrificial purposes. For example, in pit 12R/1 the distal parts of fore and hind legs from at least 15 sheep were encountered. Another pit, 14H/16, contained pig skeletons from at least 10 animals, all of which were the same age.

Animal remains from several prehistoric pits have been investigated from the site Kanligeçit B5/18. They belong to different periods. These are Precucuteni, Gumelnitza, Ezero and Troy V. The Bronze Age site at Kanligeçit B5/17, where excavations began last year, exhibits sev-

Group/Species	AP5	AP4	AP3	AP2	AP1	Prec.	Gum.	Ezero	TV	MBA	Hell.
I. Domestic Mammals											
Cattle	■	■	■	■	■	■	■	■	■	■	■
Sheep	■	■	■	■	■	■	■	■	■	■	■
Goat	■	■	■	■	■	■	■	■	■	■	■
Pig	■	■	■	■	■	■	■	■	■	■	■
Horse	■	■	■	■	■	■	■	■?	■	■	■
Dog	■	■	■	■	■	■	■	■	■	■	■
Cat	■	■	■	■	■	■	■	■	■	■	■
II. Wild Mammals											
Hare	■	■	■	■	■	■	■	■	■	■	■
Beaver	■	■	■	■	■	■	■	■	■	■	■
Red fox	■	■	■	■	■	■	■	■	■	■	■
Wolf	■	■	■	■	■	■	■	■	■	■	■
Brown bear	■	■	■	■	■	■	■	■	■	■	■
Badger	■	■	■	■	■	■	■	■	■	■	■
Weasel	■	■	■	■	■	■	■	■	■	■	■
Wild cat	■	■	■	■	■	■	■	■	■	■	■
Lynx	■	■	■	■	■	■	■	■	■	■	■
Lion	■	■	■	■	■	■	■	■	■	■	■
Wild pig	■	■	■	■	■	■	■	■	■	■	■
Red deer	■	■	■	■	■	■	■	■	■	■	■
Fallow deer	■	■	■	■	■	■	■	■	■	■	■
Roe deer	■	■	■	■	■	■	■	■	■	■	■
Aurochs	■	■	■	■	■	■	■	■	■	■	■
III. Tortoise											
Iberian tortoise	■	■	■	■	■	■	■	■	■	■	■
IV. Molluscs											
River mussel	■	■	■	■	■	■	■	■	■	■	■
Common cockle	■	■	■	■	■	■	■	■	■	■	■
Common mussel	■	■	■	■	■	■	■	■	■	■	■

Table 2. Kirkklareli. Presence - absence of identified species (without birds) in the different chronological units: Asagi Pinar (layers 5-1, AP5 - AP1), Kanligecit B5/18 pits (Prec. - Precucuteni, Gum. - Gumelhitza, Ezero, TV - Troy V), Kanligecit B5/17 (MBA - Middle Bronze Age), Asagi Pinar (Hell. - Hellenistic pits).

In contrast to the species composition there are remarkable differences in the relative frequencies of single species or groups of species between the different chronological units from Kirklareli. First the domestic fauna will be considered. In Figure 3 the percentages of the domestic species in the various chronological units are presented. The ovicaprids are the most frequent species, followed by cattle in the Middle Neolithic settlements of Asagi Pinar. There is a tendency of a slight decrease of sheep and goat and a slight increase of cattle from the oldest to the youngest layer. Pig is a rare species at Asagi Pinar. This especially applies to the oldest settlement layer 5, where the frequency of pig bones is only 2%. In many features from this layer pig is totally missing. In the younger layers domestic pig reaches values of about 8%. The frequency of dog is more or less the same in the different layers of the Middle Neolithic tell. It never exceeds 3%. Only a few of the dog bones exhibit cut marks. This indicates that dogs were only occasionally exploited for their meat. The younger chronological units - the Precucuteni, Ezero and Troy V pits - display significant differences concerning the relative frequencies of the domestic mammals. Cattle is the most frequent species. In comparison to the Middle Neolithic there is a distinct decrease in the frequency of sheep and goat and a sharp increase in the frequency of the pig, which becomes the second most frequent domestic mammal. In the settlement of the Middle Bronze Age, cattle is once again the most numerous species, followed by pig and ovicaprids with nearly equal percentages. Bones of domestic horse represent a remarkable 5% of the domestic fauna. Figure 4 shows the ratio between sheep and goat in the different chronological units. As one can see, this ratio is quite the same in all units, sheep being four to five times as frequent as goats.

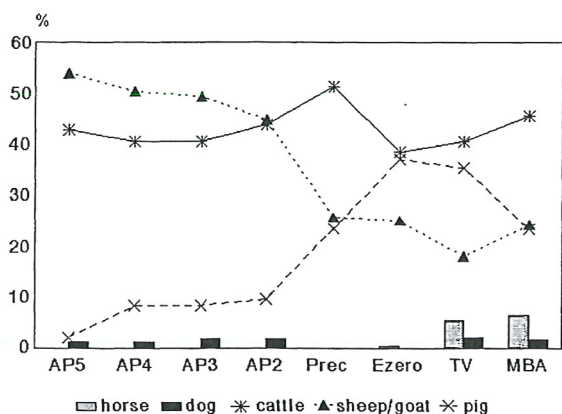


Figure 3. Relative frequencies of domestic mammals in the different chronological units at the Kirklareli sites (based on NISP). Abbreviations: see Table 2.

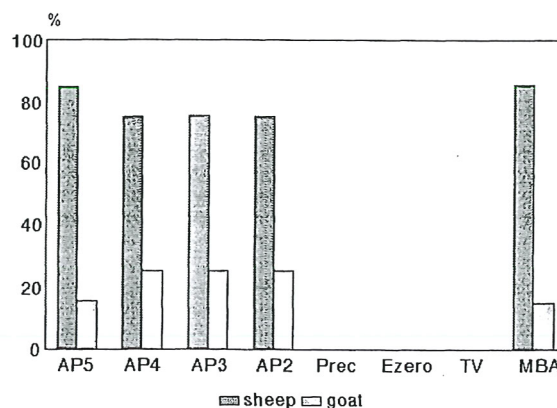


Figure 4. Ratio of sheep and goat at the Kirklareli sites.

Previous investigations have provided a large number of osteometric data which permit some conclusions concerning the size of the domestic animals kept here by Middle Neolithic and Middle Bronze Age farmers. As can be seen from Figure 5, the Middle Neolithic cattle encountered at Kirklareli were of a similar size as contemporaneous cattle populations from Anza, Sitagroi (Phase II and III) and Goljamo Delçevo (Phase III). Their withers heights varied approximately between 120 and 135 cm.

As far as sheep is concerned it can be concluded from the measurements that Middle Neolithic populations from Kirklareli attained withers heights between 52 and 63 cm. An osteometric comparison with other sites of this period indicates a relatively uniform size of sheep in southeastern Europe during the 6th and 5th millennium BC (Fig. 6).

According to metric data, the dog bones found at the Middle Neolithic mound Asagi Pinar come mainly from medium-size dogs.

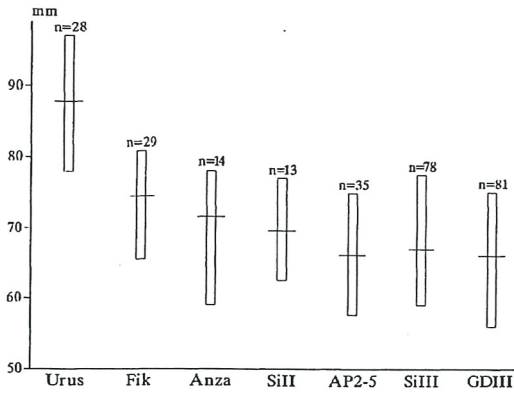


Figure 5. Size comparison between cattle from Kirkclareli (Asagi Pinar, phases 2-5) and other neolithic sites for the lateral length of the talus (range, mean). From left: Urus from Goljamo Delçevo III (Ivanov and Vasilev, 1975: 271), Fik - Fikirtepe (Boessneck and von den Driesch, 1979, tab. 4p), Anza (Bökönyi, 1976: 342), SiII - Sitagroi II (Bökönyi, 1986: 102f), AP5-2 - Kirkclareli, SiIII - Sitagroi III (Bökönyi, 1986: 102f), GDIII - Goljamo Delçevo III (Ivanov and Vasilev, 1975: 279)

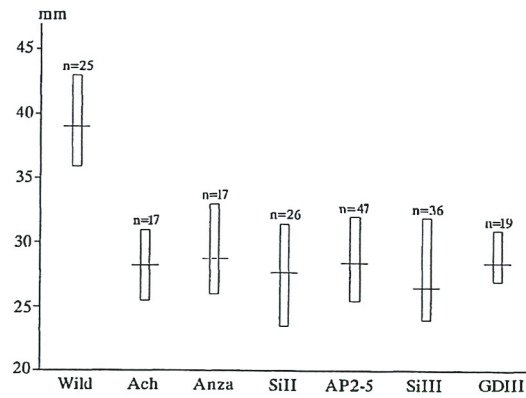


Figure 6. Size comparison between sheep from Kirkclareli (Asagi Pinar, phases 2-5) and other neolithic sites for the distal breadth of the humerus (range, mean). From left: Wild - Wild sheep from Bastam (Krauss, 1975, tab. 39e), Ach - Achilleion (Bökönyi, 1989: 328), Anza (Bökönyi, 1976: 345), SiII - Sitagroi II (Bökönyi, 1986: 107f), AP5-2 - Kirkclareli, SiIII - Sitagroi III (Bökönyi, 1986: 107f), GDIII - Goljamo Delçevo III (Ivanov and Vasilev, 1975: 275).

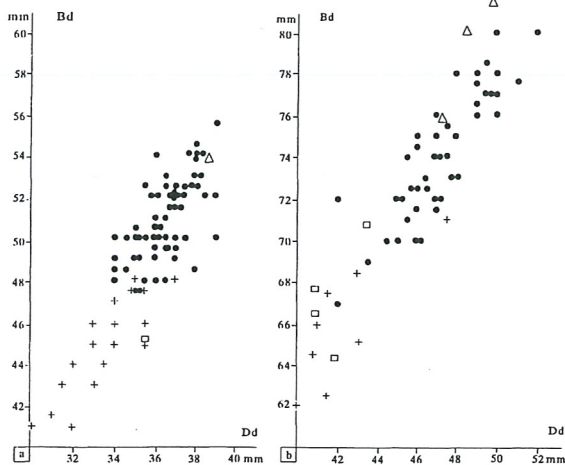


Figure 7. Size comparison between Middle Bronze Age horses from Kirkclareli and other horse groups for the correlation of distal breadth (Bd) to distal diameter (Dd) on the metacarpus (a), and on the tibia (b). Groups: Chalcolithic and Bronze Age horses from Hungary and Bulgaria (●), Bronze Age horses from Central and Western Europe (+), horses from Kastanas (□) and Kirkclareli (Δ); (Plots from Becker, 1986, fig.27).

The Middle Bronze Age horses from Kanlıgeçit B5/17 represent a large type of horse. Osteometrically they fall into the upper part of the size range for Chalcolithic and Bronze Age horses from Hungary and Bulgaria (Fig. 7). They are much larger than the Bronze Age horses from Kastanas. Morphologically, they seem to be similar to Bronze Age horses from Asia Minor, for example the domestic horses from Demircihüyük (Rauh, 1981, 106ff.) and Troy (Gejvall, 1946, table III). It may be that the horses encountered at the site of Kanlıgeçit B5/17 derive from Anatolian stocks.

In presenting the species list, the occurrence of various wild mammal species in the faunal assemblage of Kirkclareli has already been mentioned. We will now have a closer look at the ratio between domestic and wild mammals in the various chronological units. Figure 8 presents this ratio on the basis of NISP. In the oldest level of the Middle Neolithic tell (AP 5), which corresponds to the Karanovo II period, the percentage of wild mammals exceeds 40 % on average. From this, it appears that hunting

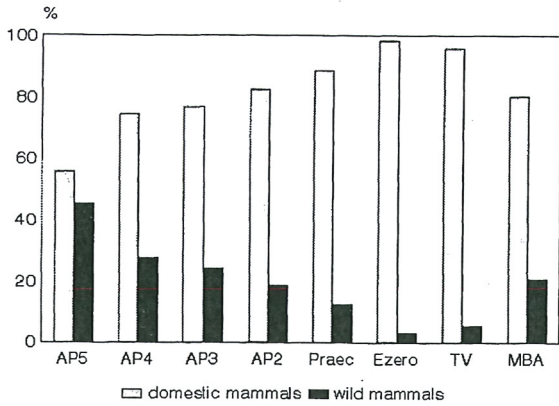


Figure 8. Ratio between domestic and wild mammals at the Kirklareli sites based on NISP (Abbreviations: see Table 2).

was of great importance in the economy of the Karanovo II settlement. In the following levels the ratio of wild mammals continuously decreases, reaching a value of about 20 % in level 2. The various pits do not contain many bones from wild mammals. Their percentages vary between 15 and 5 %. In the Bronze Age settlement the ratio of wild animals again is a little higher and reaches a value of about 20 %. Figure 9 shows the percentages of the most important species in the wild mammal fauna in the different chronological units. In this diagram the animal remains from the Precucuteni, Ezero and Troy V pits have not been considered because the samples were too small. As one can easily see, cervids played a major role as hunted animals, but their importance decreases already from the oldest to the youngest level of the Middle Neolithic tell.

In transition to the Middle Bronze Age there is a further decrease in this group, whereas the frequency of wild pig distinctly increases. In addition, remarkable changes in the relative frequencies of the deer species can be observed (Fig. 10). In the settlement layers of the Middle Neolithic tell, fallow deer is the most frequent species, but its percentage continuously decreases from 95 % in layer 5 to 50 % or less in layer 2. On the other hand, there is a slight increase in the frequencies of roe deer and especially of red deer. The deer fauna of the Middle Bronze Age settlement exhibits a quite different pattern. Here fallow deer is extraordinarily rare, whereas red deer is the dominant deer species. To sum up: Figures 9 and 10 display a dramatic shift from a wild fauna characterized by fallow deer in the Middle Neolithic to one that is dominated by red deer and wild boar in the Middle Bronze Age. Possible reasons for this shift include factors such as changes in climate and vegetation as well as overhunting and geographical isolation of Thracian fallow deer from the Anatolian population.

The Middle Neolithic fallow deer population at Kirklareli was exposed to intensive hunting pressure, especially in the oldest settlement layer 5. This is demonstrated by data concerning the age structure and sex ratio of fallow deer bones (Figs. 11). Mainly adult individuals were hunted in the younger layers 4, 3 and 2, as indicated by frequencies in this age group of 80 % and more. The ratio between females and males is nearly one to one. Compared with that, in the oldest settlement layer 5, in which hunting was of special importance - more than 40 % of the mammal bones are from wild animals (see above) - , a different pattern can be discerned. Nearly 60 % of the bones come from

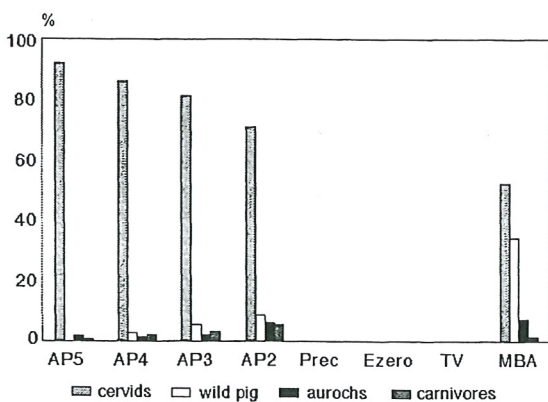


Figure 9. Percentages of the most frequent wild mammals at the Kirklareli sites based on NISP (Abbreviations: see Table 2).

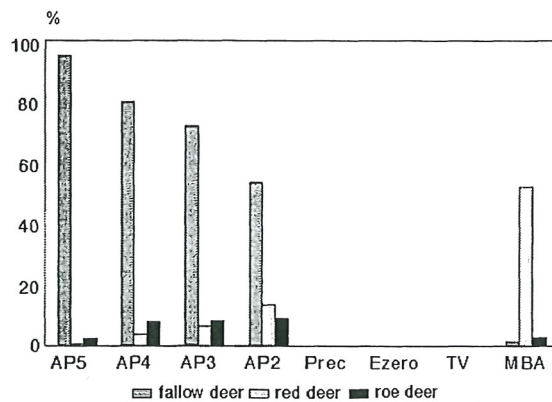


Figure 10. Relative frequencies of the deer species in relation to all wild mammals at the Kirklareli sites based on NISP (Abbreviations: see Table 2).

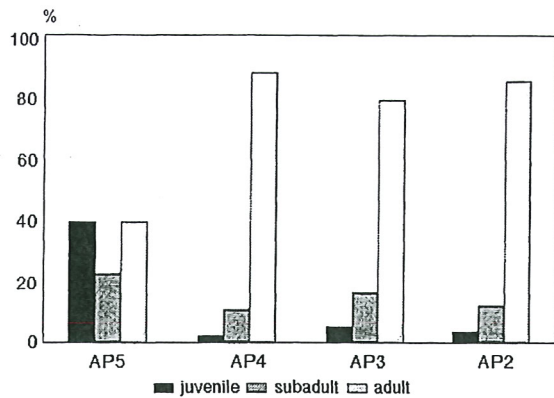


Figure 11. Age composition of fallow deer in the settlement layers 5 to 2 of the Middle Neolithic tell Asagi Pinar.

young animals, while within the adult group females clearly dominate. From those data it appears, that at that time hunting was mainly aimed at groups of females with their fawns.

The archaeological excavations at Kirkclareli will continue at least until 1998 and we have hopes, that they will also bring to light animal remains from those periods that are still missing, to finally complete the faunal sequence from the Early Neolithic to the Middle Bronze Age in northern Turkish Thrace.

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