

# Interactions between hunting and economic, social and cultural relations in two large prehistoric sites of southwest Asia

*Sándor BÖKÖNYI\**

## RÉSUMÉ

Selon le témoignage de nombreux vestiges animaux découverts à Arslantepe, à côté de Malatya, en Anatolie (environ 3000-1200 avant J.-C.), et à Kamid el-Loz, dans la vallée de la Bekaa, Liban (environ 1800-900), l'objectif principal de la chasse dans les établissements préhistoriques et protohistoriques était sans aucun doute le complément d'autres aliments d'origine animale. Mais à part cela, la chasse a également joué un rôle dans la domestication (Arslantepe), dans les conceptions religieuses, notamment dans les sacrifices d'animaux (Kamid el-Loz). En outre, on a pu démontrer à Kamid el-Loz – ce n'est qu'une supposition à Arslantepe – que la chasse était une occupation très prisée de l'élite régnante, ayant, de plus, l'avantage de rendre possible la consommation du gibier. Enfin, il a été déterminé que les hommes avaient chassé les animaux de tous les types d'habitats se trouvant aux alentours de ces deux établissements.

## ABSTRACT

Evidenced by the large animal bone samples unearthed in Arslantepe, near Malatya, Anatolia (ca. 3000 till 1200 BC), and in Kamid el-Loz, in the Bekaa Valley, Lebanon (ca. 1800 till 900 BC), the main aim of hunting in prehistoric and early historic settlements was undoubtedly to complete the foodstuff of animal origin. Besides, however, hunting played a part in local domestication (Arslantepe), in cultic (religious) concepts, e. g. in animal sacrifices (Kamid el-Loz). Furthermore, there could be proved in Kamid el-Loz – though only suspected in Arslantepe – that hunting was the pastime of the ruling elite and was also connected to preference for venison. And finally, it could also be determined that the hunters exploited all habitat types existing around the two sites.

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\* Archaeological Institute, Hungaria Academy of Sciences, 1250 Budapest 1, Uri u. 49, Hongrie.

In an earlier paper of mine on the role of hunting-fishing-gathering in the early Neolithic Koros culture, I called hunting (along with fishing and gathering) « the hidden face of a culture » relying essentially on food production (Bökönyi, in print). I based this on the fact that food production, particularly animal husbandry and plant cultivation, determines the way of life of the inhabitants in a Neolithic or post-Neolithic settlement much more than hunting, that only surfaces and reaches greater importance in special emergencies like natural catastrophes, climatic or environmental deteriorations, economic switchovers or simply domestic animals' epidemics.

Nevertheless, hunting has been practised in well-functioning food producing societies as well. It is true, however, that the part it played was rather different from the one which could be observed in cases of emergency. In highly developed and organized societies the main aim was far from providing an enormous amount of meat for the inhabitants, *e. g.* in case of killing one or more aurochs. In such cultures the role and aims of hunting were more delicate and refined, and the purpose of this paper is to try to elucidate some of them at least.

The two sites drawn into these studies are Arslantepe near Malatya, Anatolia, close to the upper Euphrates, excavated by a team from the university of Rome, under the directorship of the late professors Salvatore Puglisi and Alba Palmieri. The other site is Kamid el-Loz in the Bekaa Valley of Lebanon, excavated by Professor Rolf Hachmann of the University des Saarlandes, Saarbrücken. Both sites have yielded considerable amounts of animal remains. In Arslantepe ca. 50 000 animal bones have so far been identified (Bökönyi, in print), and the number of identified animal remains from Kamid el-Loz was 13 301 (Bökönyi, 1990 : 27 ff).

Arslantepe and Kamid el-Loz have an essential similarity : both of them were regional and administrative centres. This means that the animal remains found in them represented the domestic and wild faunas of a wider area, and that at the same time their inhabitants lived a comparatively more civilized life, in which animal husbandry versus hunting obviously played a more important part than in an obscure provincial settlement, and finally that in such a centre there existed certain technological activities and social differences that might influence the use and/or distribution of meat, and particularly of venison.

Besides these similarities, there can also be observed decisive differences between the two sites. They crystallize around two main points, one being the difference in the environments, the other being the difference in the times of habitation.

The main environmental difference between Arslantepe and Kamid el-Loz was that the first site lay in a wide, open, hilly, dry farmland that was delimited by the upper Euphrates to the north and by low, though rocky and bare, mountains to the east. Nevertheless, these mountains could be easily forested in prehistoric times because Erinç determined that in the postglacial period of southeastern Anatolia the climate was more humid than at present (Erinç, 1980 : 80). And since the annual hydrological balance was markedly positive, one can suppose that forests covered much larger areas, first of all along the rivers but in other regions as well. One should not forget that Boessneck and von den Driesch described bison, a typical forest species from the other side of the Euphrates, in the Keban Dam area (Boessneck, von den Driesch, 1976 : 91 ff).

Besides forest, the following other habitat types were also exploited by the

inhabitants of Arslantepe : forest steppe (including agricultural land), grass steppe, semi-desert and light forest (*Parklandschaft*).

The other settlement, Kamid el-Loz, lies in the wide valley between the Lebanon and Anti-Lebanon (Hermon) mountains. It was also a rather dry, somewhat hilly, farmland, maybe drier than Arslantepe was. At any rate, it had a lake nearby, a small river (Lithani) crossed through the region heading to the south, and finally the sea was only ca. two days walking distance from the site, resulting in seafood and seabird import for at least part of the population.

In the immediate area of Kamid el-Loz, the dense forest covering the slopes of the Lebanon Mountains obviously played a decisive part. Besides that, treeless mountain meadows were also important, but more for transhumance pastoralists. For wild animals, light gallery forests and swampy areas along the river and around the lake were more important, while steppes and semi-deserts were the home of gazelles, hemionies and hyaenas. In fact, one can even determine the desiccation of the area between LBA and EIA : in the first period the ratio of animals preferring wet habitat to « dry » animals was 43 : 6, in the second one only 22 : 5.

The time-spans of the habitation levels were overlapping. These extended in Arslantepe from the Late Chalcolithic through the Early and Late Bronze Age till the Neo-Hittite period, thus from ca. 3000 till 1200 BC (Palmieri, 1978 : 315, tabelle I) Kamid el-Loz was inhabited from the Middle Bronze Age through the Late Bronze Age till the Iron Age, thus from ca 1800 till 900 BC (Bökönyi, 1990 : 13).

As table 1 shows, quite a large number of wild mammals were killed in the two sites. The number of wild mammal species found in Arslantepe was 19, and 15 out of them occurred also in Kamid el-Loz. The species found in Arslantepe, but missing in Kamid el-Loz, were the wild sheep, the lion, the leopard, and the beaver. The most frequently occurring species were the ungulates, first of all ruminants, plus hare in Arslantepe. (It

	Arslantepe	Kamid el-Loz
aurochs - <i>Bos primigenius</i> Boj.	+	+
wild sheep - <i>Ovis orientalis</i> Gm.	+	-
bezoar goat - <i>Capra aegagrus</i> Erxl.	+	+
gazelle - <i>Gazella</i> sp.	+	+
red deer - <i>Cervus elaphus</i> L.	+	+
fallow deer - <i>Dama mesopotamica</i> Brooke	+	+
roe deer - <i>Capreolus capreolus</i> L.	+	+
wild swine - <i>Sus scrofa</i> L.	+	+
hemione - <i>Hemionus hemionus</i> Pall.	+	+
lion - <i>Panthera leo</i> L.	+	-
leopard - <i>Panthera pardus</i> L.	+	-
weasel - <i>Mustela nivalis</i> L.	+	+
badger - <i>Meles meles</i> L.	+	+
hyaena - <i>Hyaena hyaena</i> L.	+	+
brown bear - <i>Ursus arctos</i> L.	+	+
red fox - <i>Vulpes vulpes</i> L.	+	+
wolf - <i>Canis lupus</i> L.	+	+
beaver - <i>Castor fiber</i> L.	+	-
brown hare - <i>Lepus europaeus</i> Pall.	+	+
wild birds - <i>Aves</i>	+	+

**Table1.** The occurring wild species

was uncommon in Kamid el-Loz.) This fact clearly demonstrates that the main aim of hunting was meat (the meat of practically all carnivores was also eaten, and particularly bear meat was a delicacy in those times).

The list of frequencies started with the red deer in Arslantepe and with the fallow deer in Kamid el-Loz, but wild swine and wild caprovines (sheep and goat) also played a leading part in Arslantepe, and wild swine plus bezoar goat in Kamid el-Loz.

Besides getting meat, the increase of domestic stock was another main aim of hunting in Arslantepe, though it was missing in Kamid el-Loz. In Arslantepe the local domestication of wild sheep and bezoar goats was evidenced by the selective hunting of these two wild forms (mainly the males and generally adult individuals were killed) ; among the wild sheep (mouflon) horn cores the male to female ratio was 6:1, and also among bezoar horn cores only males (9 specimens) occurred) and by the overlapping size variations of the wild and domestic forms, supposing a larger number of « transitional » individuals (fig. 1, 2). In this way a process happened in Arslantepe that was similar to that of Asiab, West Iran, around 7000 BC (Bökönyi, 1973, 69 ff ; 1977, 14, 16 ff).

Sheep and goat domestication goes back in Anatolia to at least 7000 BC. Its best proof originates from Çayönü (Lawrence, 1980 : 304), nevertheless sheep domestication happened in all probability in Suberde too. In spite of Perkins and Daly's negative opinion (1968 : 97-106), I completely agree with Ducos (1978 : 35) and Uerpmann (1978 : 43) that in Suberde domesticated sheep existed (Bökönyi, 1976 : 21, fig. 1). Thus, the sheep and goat domestication is only a secondary process in its kind in Arslantepe, but it proved to be a useful practice to increase the number of domestic caprovines.

As for the local domestication of the remaining three domesticable wild species – aurochs, wild swine and wolf –, there is a slight possibility of local aurochs domestication but no proof of swine or wolf domestication at all (fig. 3 at 5).

Strangely enough, there was not even the slightest evidence of goat domestication in Kamid el-Loz (fig. 6), in spite of the fact that wild bezoar goats were common in the hunter's prey there (Bökönyi, 1990 : 60). Aurochs, swine and wolf domestication cannot be found either.

This interesting difference in the presence and absence of local domestication between the two sites cannot be the result of the time difference, because only the earliest layers had a large difference of time, the difference between the latest layers of the habitation being only 300 years.

Therefore, one has to suppose that the basis of this difference lay in the more civilized life and more developed and consequently more successful animal keeping practices of the inhabitants of Kamid el-Loz in comparison to those of Arslantepe. One should not forget, *e. g.*, that among the domestic cattle of Kamid el-Loz three constitutional types (*Wuchsformen*) were parallel, existing as well as two sheep types and a miniature horse among oriental horses, of ca. 138 cm withers height (Bökönyi, 1990 : 33 ff, 48 ff, 93). As a result, the inhabitants of Kamid el-Loz were not forced to carry out local animal domestication in order to increase the number of their domesticates, the offspring of their domestic animals were enough for that.

As for the importance of hunting in comparison to animal husbandry, one could discover an interesting change in Arslantepe from the Late Chalcolithic and Early Bronze Age (Bökönyi, 1988 : 593 ff). (In Kamid el-Loz there was no chance for such observations

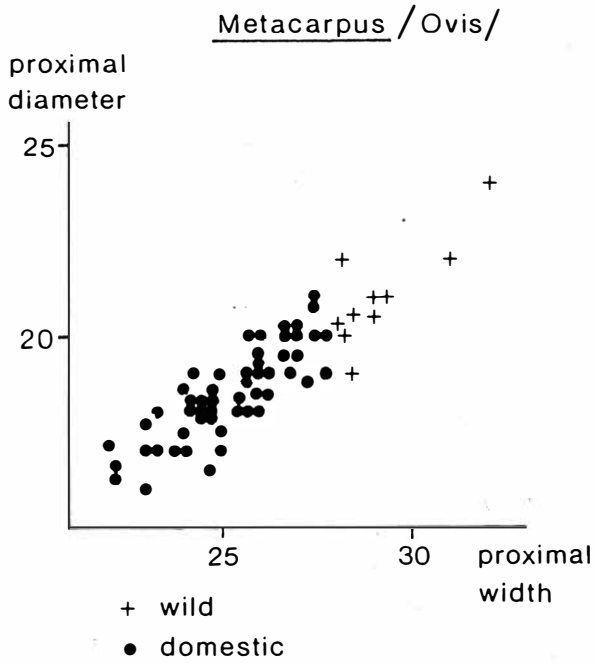


Fig. 1. Scatterdiagram of wild and domestic sheep metacarpals. Arslantepe.

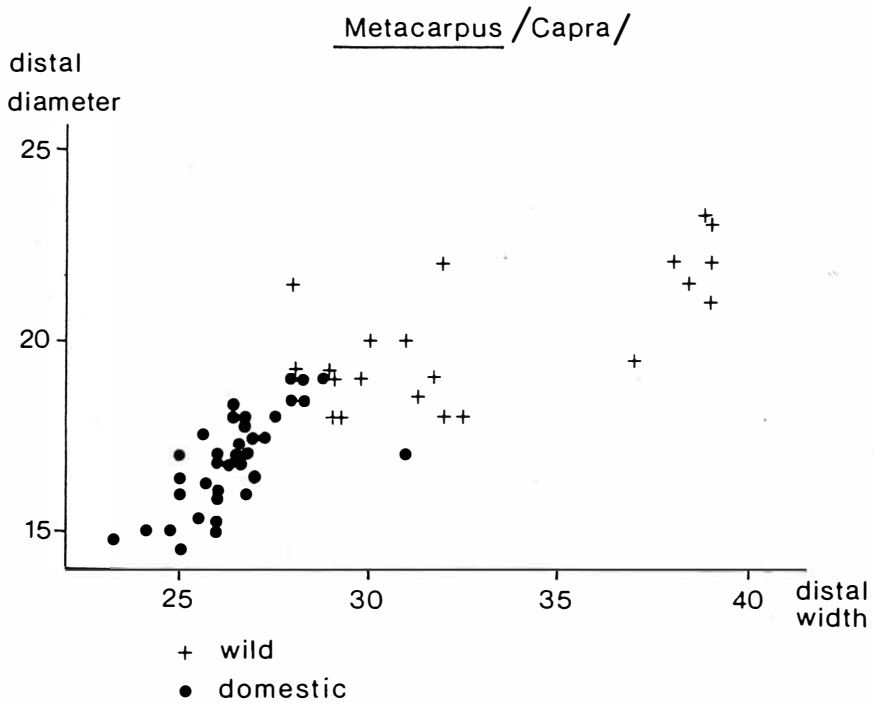


Fig. 2. Scatterdiagram of wild and domestic goat metacarpals Arslantepe.

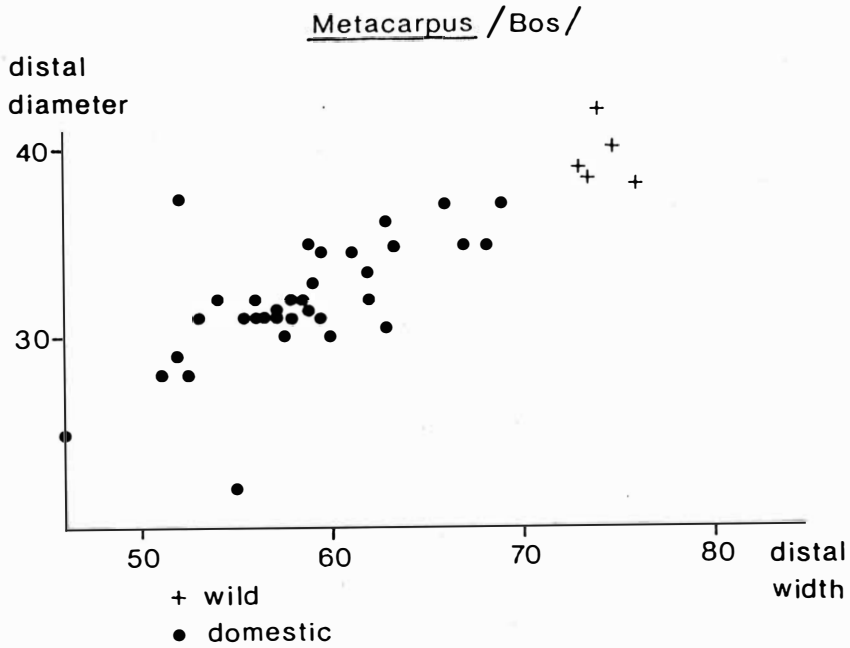


Fig. 3. Scatterdiagram of wild and domestic cattle metacarpals. Arslantepe.

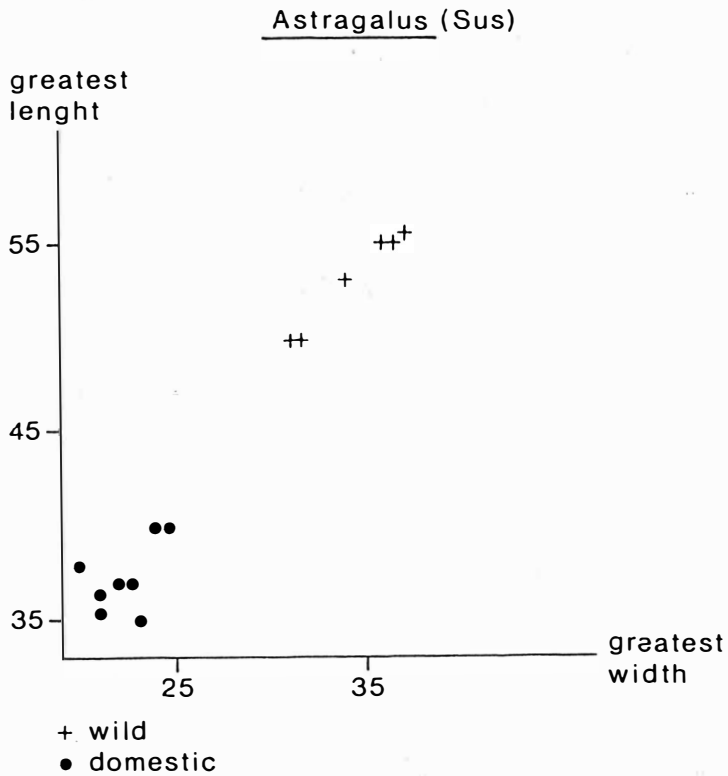


Fig. 4. Scatterdiagram of wild and domestic swine astragali. Arslantepe.

because those two phases were missing.) The importance of hunting, which had been a supplementary food source in the Late Chalcolithic (when its frequency was 11.4 %, but in fact it was even higher because this ratio was determined on the basis of the number of bone fragments ; the calculations based on the number of individuals would have surely been higher), decreased well below 10 %, and at the same time there also appeared a shift in animal husbandry : instead of cattle and goat, sheep became the leading domesticate. Along with the increase of the sheep ratio, their size grew, and supposedly the quality and quantity of their wool also improved. Interestingly enough, this change signalled the advent of early State formations with centrally organized food production and acquisition in which hunting had a reduced importance. The economic importance of hunting was, however, somewhat stronger than the frequencies of wild animals reveal : since it was connected with local domestication of caprovines, it was a non-negligible source in the increase of the domestic stock.

Besides the aspects discussed above, hunting had another role in these sites. In Arslantepe, it is not yet fully clear because the complete evaluation of the animal bone sample is still far from its end ; however, in Kamid el-Loz one could positively observe that hunting had been a favorite pastime of the ruling elite (Bökönyi, 1990 : 99 f). There, in the place whose oldest period goes back to the middle of the 2nd mill. BC, and the four younger ones can be dated till the 11<sup>th</sup> cent. BC (this period is contemporaneous to the end of the reign of Thotmes III and that of Ramses II in Egypt), besides remains of five domestic species, those of thirteen wild ones, mainly birds, have been collected.

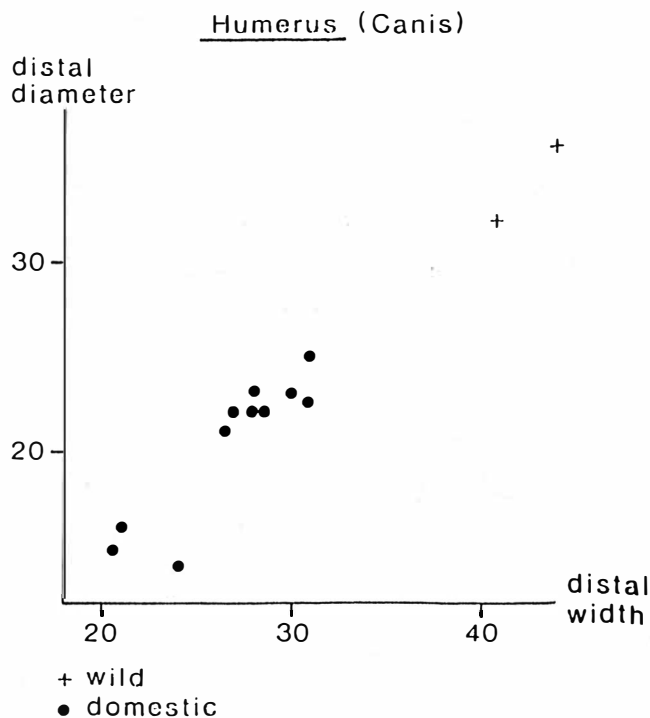


Fig. 5. Scatterdiagram of wolf and dog humeri. Arslantepe.

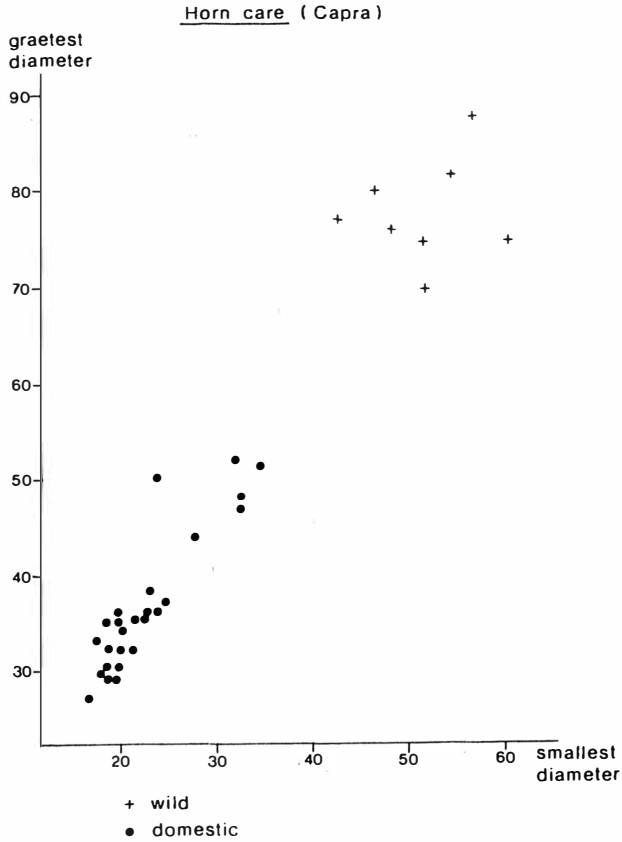


Fig. 6. Scatterdiagram of wild and domestic goat horn cores. Kamid el-Loz.

This fact also shows that venison was highly appreciated by the ruling elite and indicates the new role of hunting in the social life of the settlement.

Hunting and hunted animals also played a part in the cultic (religious) life of the inhabitants of both settlements. In fact, some wild animal species were used as sacrifices at special occasions, and this practice was supposedly archaic in certain cases, possibly going back to the times previous to domestication and keeping of domestic animals.

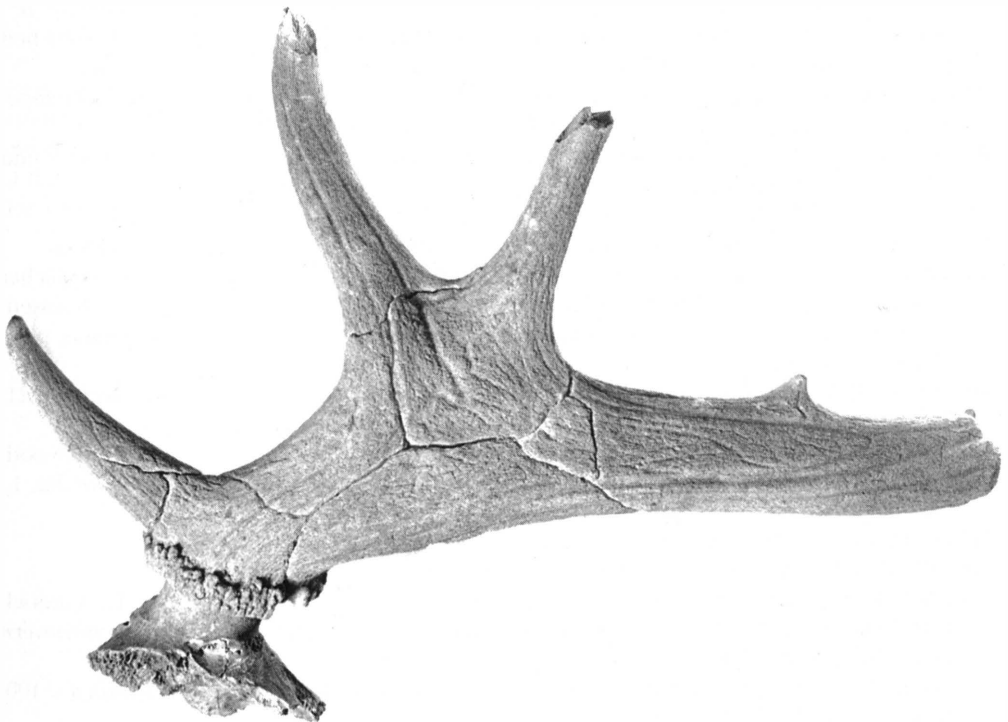
In Arslantepe, aurochs, wild sheep, red deer and wild swine, thus ungulate meat game species, were found besides domestic cattle, and sheep and possibly also goat, thus meat-producing ungulates again in a sacrificial place where seemingly meat was the subject of the sacrifices in the Early Bronze Age (Bökönyi, 1988 : 596). (At another sacrificial site of Arslantepe brain-skulls of domestic goats were sacrificed.)

In Kamid el-Loz the animal sacrifices are particularly interesting (Bökönyi, 1985 : 201 ff). There, in the industrial area of the town, the more or less complete skeletons of seven to nine sheep and of two goats were found in a sacrificial pit, and another pit contained bone fragments of some other domestic species (that could originate from the walking surface, hence probably were no sacrifices) and a brain-skull fragment with a



practically complete antler (fig. 7) of a Mesopotamian fallow deer (*Dama mesopotamica* Brooke). The sheep skeletons certainly did not originate from carrions of animals died in the site, because several cervical vertebrae (atlases) show horizontal cut marks on their ventral surface, suggesting that these sheep and goats were slaughtered by cutting of the throats. Further butchering marks could not be observed on the skeletons ; thus their carcasses were thrown in one piece into the pit, and this fact undoubtedly speaks for animal sacrifices all the more because in the concerned area metallurgy was practiced ; this activity was often in connection with animal sacrifices in prehistoric and early historic times. In this respect, the occurrence of a fallow deer antler is not surprizing either. From central and southeastern Europe we know a lot of occurrences of red deer antlers in sacrificial contexts, the best example of it being the famous Epipaleolithic site of Lepenski Vir, in the Iron Gate gorge of the Danube, where in shrine structures not less than 13 red deer skulls with antlers were found (Bökönyi, 1970, 1704). This role went over already in the southeastern Balkans (in Bulgaria and Greece) to the fallow deer ; this is suggested by the frequently occurring complete fallow deer antlers of Kastanas, Greece (Becker, 1986 : 127), and of Drama, southeastern Bulgaria (Bökönyi, 1989 : 125 f), and one is tempted to consider the case of Kamid el-Loz as a continuation of the European usage.

The main aim of hunting was undoubtedly to complete the meat supply for the human population in prehistoric and early historic times. Nevertheless, it can



**Fig. 7.** Mesopotamian fallow deer skull fragment with part of the antler. Kamid el-Loz.

certainly be useful to look at the biological side of hunting when one studies the list of hunted animal species, their frequencies, thus their importance as food sources, the exploited habitat types, their sex ratios, age group proportions, size variation, etc. But it can also be useful to look, even sketchily – as the above example demonstrates –, beyond the biological aspects and try to throw some light on the anthropological (economic, social, cultural, etc.) side of hunting, this archaic relationship between man and animal.

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## Discussions

*M. Teichert* : In your faunal list of hunted wild animals, I do not find the bison. I wonder if the bison lived or not in the Southwest Asia region, or if it was not hunted ?

*S. Bökönyi* : Bison bones are extremely rare in Southern Asia. In fact, they have only been identified from Norsun-Tepe and Tepecik of the Altinova Plain, Anatolia (Boessneck and von den Driesch, 1976 : 95, 98) and possibly from Qalat Jarmo, Northeast Iraq (Stampfli, 1983 : 441f.). Bison remains have not been found either in Arslantepe or in Kamid el-Loz.

*N. Benecke* : What is the status of the horses in Arslantepe ? What is the ratio domestic-wild animals in both sites under investigation ?

*S. Bökönyi* : Boessneck and von den Driesch found 60 horse bones among the ca. 9 000 animal remains of Norsun-Tepe, and smaller amounts of horse bones also in Tepecik and Tülintepe (1976 : 81ff.). All three sites lie in the Altinova Plain, in fact not far from Arslantepe but on the other side of the Euphrates river. They considered them as remains of wild horses, based on their stockiness, strong structure and the fact that in the small EBA bone sample of Norsun-Tepe no horse bones had been found. I have always thought that the possibility of the domestic nature of these horses should not be excluded. I have based this supposition on the following (1978 : 55 ; 1988 : 587) :

- a) Despite the small amount (though lately steadily increasing) of archaeozoological researches carried out in Anatolia, one conspicuous fact is that no single wild horse remain is known from the earlier period of the Holocene.
- b) There are no data on the extension of Przewalsky horses into southern Anatolia.
- c) On the basis of the large sample of early domestic horse bones of East Europe and the Carpathian Basin, it is clear that these horses were stocky and close to the proportions of the wild form.
- d) Measurements of the Norsun-Tepe horses fit the size variation of the early domestic horses coming from the east-European domestication Centre.