ARCHAEOZOOLOGY OF THE NEAR EAST VI

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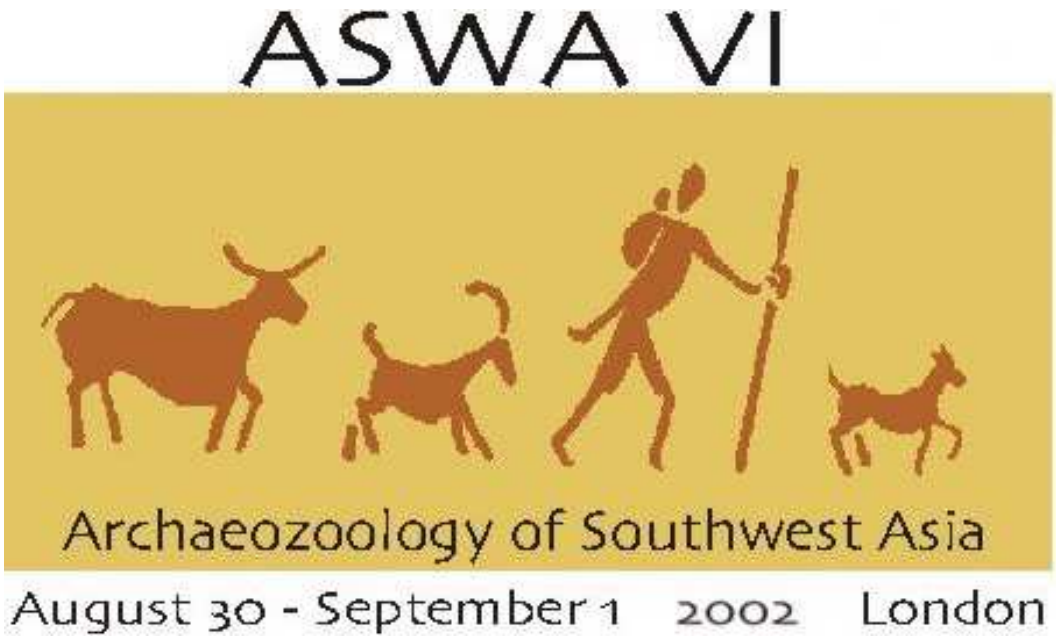

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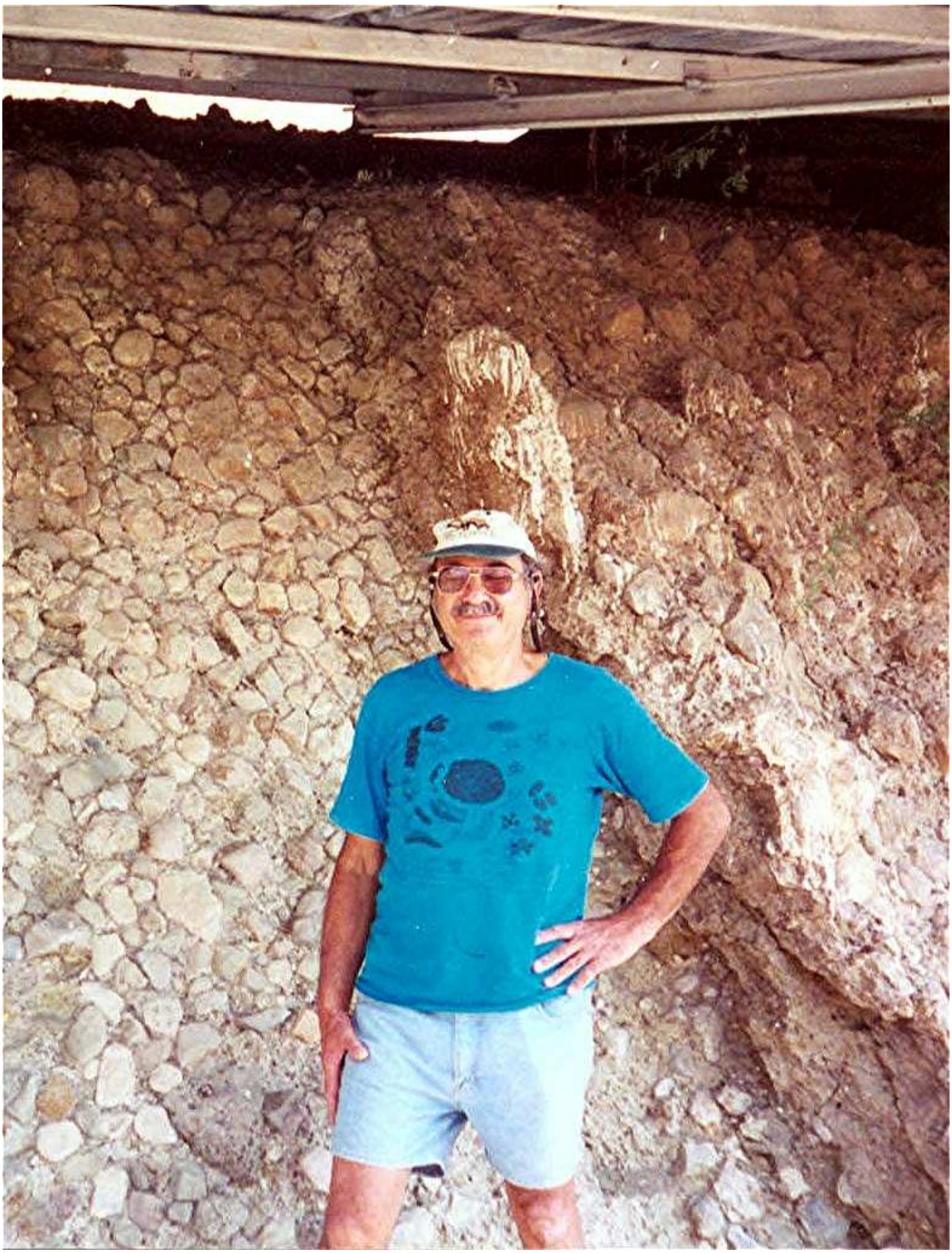

Prof.Dr. Eitan Tchernov

This volume is dedicated to the memory of Prof. Dr. Eitan Tchernov, in fond memory of his enthusiasm and support to many in the field of archaeozoology**.**

Preface

The ASWA VI meeting was held at the Institute of Archaeology, University College London, from 30th August-1st September 2002, timetabled to follow on the heels of the ICAZ meeting in Durham, UK. Over 55 participants attended the meeting, travelling from 13 countries, bringing the latest research results from our field. As usual, it was a pleasure to see so many doctoral students presenting their research – a sign for a very healthy future for zooarchaeology in south west Asia. It is still unfortunate, however, that colleagues from some Middle Eastern countries were unable to attend due to financial and political constraints.

Presentations were organized into the following six themes, which highlight the scope of the ASWA membership: Animals in Palaeolithic and Epipalaeolithic Levant; Neolithic Patterns of Animal Use; Animals in Neolithic Anatolia; Animals in the Chalcolithic and Bronze Ages; Iron Age, Nabatean and Roman Patterns of Animal Use; Animals in Ancient Egypt. There was also a poster session, and contributors were invited to submit papers to this volume.

As always with the ASWA forum, the meeting served to welcome new scholars to the group, but was also very much a reunion of old friends and colleagues who have been sharing new information and discussing issues of joint interest for many years now. In this vein, it is a great sadness that ASWA VI was the last international meeting attended by Prof. Eitan Tchernov, an original founder of the group and mentor and inspiration to so many. For many of us, it was the last time we saw Eitan, and experienced his usual incisive comment, unstoppable enthusiasm for the subject, and warm friendship. He will be greatly missed.

ASWA VI was supported by the Institute of Archaeology, UCL, who provided facilities and financial and administrative help. In particular, the organizing team was aided greatly by the administrative assistance of Jo Dullaghan at the Institute. ARC bv (Archaeological Research and Consultancy, Groningen, The Netherlands) once again shouldered the finances of the publication of the proceedings, and we are extremely grateful for their continuing support. Many thanks are also due to the postgraduate student helpers from the Institute of Archaeology who made the meeting run so smoothly: Banu Aydinoğlugil, Jenny Bredenberg, Chiori Kitagawa, Peter Popkin, and Chris Mosseri-Marlio (who also produced the logo reproduced on the frontispiece of this volume).

Many thanks to all the participants for making the meeting such a success!

Louise Martin
London 2005

Participants of the 6th ASWA Conference, held at the Institute of Archaeology, University College London.

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Contents

Preface

HUNTING AND HERDING IN CENTRAL ANATOLIAN PREHISTORY: THE SITES AT PINARBAŞI

Denise B. Carruthers[1]

Abstract

This paper examines the faunal remains from Pınarbaşı Sites A and B located in Central Turkey, dated from the 9th to the 6th millennium cal BC. Results from examining Pınarbaşı Site A's faunal data indicate that hunting and broad spectrum subsistence was practiced at 8500 cal BC in Central Anatolia. Pınarbaşı B's faunal assemblage reveals subsistence practices characteristic of a herd based economy. Sheep and goat remains dominate the assemblage in addition to the continuation of seasonal hunting of larger wild taxa.

Resumé

Ce papier examine les vestiges fauniques des sites Pinarbafli A and B, situés en Anatolie centrale et datés du 9em au 6em millénaires BC. Les résultats d'analyses de Pinarbasi A indiquent dans cette partie de l'Anatolie que la chasse accompagnée d'une économie de subsistance a large spectre avait cours en 8600 cal BC. L'assemblage de Pinarbafli B révèle pour sa part une économie de subsistance caractérisé par l'élevage. Les restes de moutons et de chèvres sont dominants dans l'assemblage en plus de la chasse saisonnière de grands herbivores.

Key Words: Central Anatolia, Early Neolithic, rock shelter, open-air site, hunting, herding.

Mots Clés: Anatolie centrale, Néolithique récent, abris sous roche, site de plein air, chasse et élevage.

Introduction

The archaeological sites at Pınarbaşı are comprised of an open air settlement named Site A, which is presently the earliest dated[2] site in Central Turkey and a rock shelter named Site B, which is contemporary with the latest sequence at Çatalhöyük[3] (Watkins 1996, 1998). Pınarbaşı's faunal assemblages therefore allow for the investigation of subsistence practices of Central Anatolia's first settlers and whether they arrived with domestic animals or were hunter-gatherers, in addition to revealing the character of smaller settlements that are contemporary with Çatalhöyük.

Pınarbaşı Location and Site Description

The archaeological sites of Pınarbaşı are located at the southern edge of the Konya Plain in Central Turkey (Fig. 1). The sites are located within a ridge of limestone hills that are the result of volcanic up-thrusting. Immediately below the limestone hills is a spring that feeds a permanent shallow lake that extends northwards into seasonal waters and reed-marshes. Pınarbaşı's sites consist of an open air settlement, Site A, and a rock shelter, Site B. The open air settlement is located on a peninsula directly in front of the limestone cliff (Fig. 2). The rock shelter Site B is located on the easternmost side of the limestone cliff facing west (Fig. 2).

Pınarbaşı's Open Air Settlement Site A

Site A produced 942 animal bones for analysis from 552 litres of processed soil material. There have been 162 bones identified to taxon and 780 are classified as unidentifiable fragments. Table 1 lists the

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[2] Site A context dates: ABR (9290±80 BP), ABU (9140±80 BP) and ABJ (9050±80 BP) (Watkins 1996).

[3] Three contexts from Site B were dated: BAI 5725±65 BP, BAT 7145±70 BP and BBA 4550±70 BP (Watkins 1996).

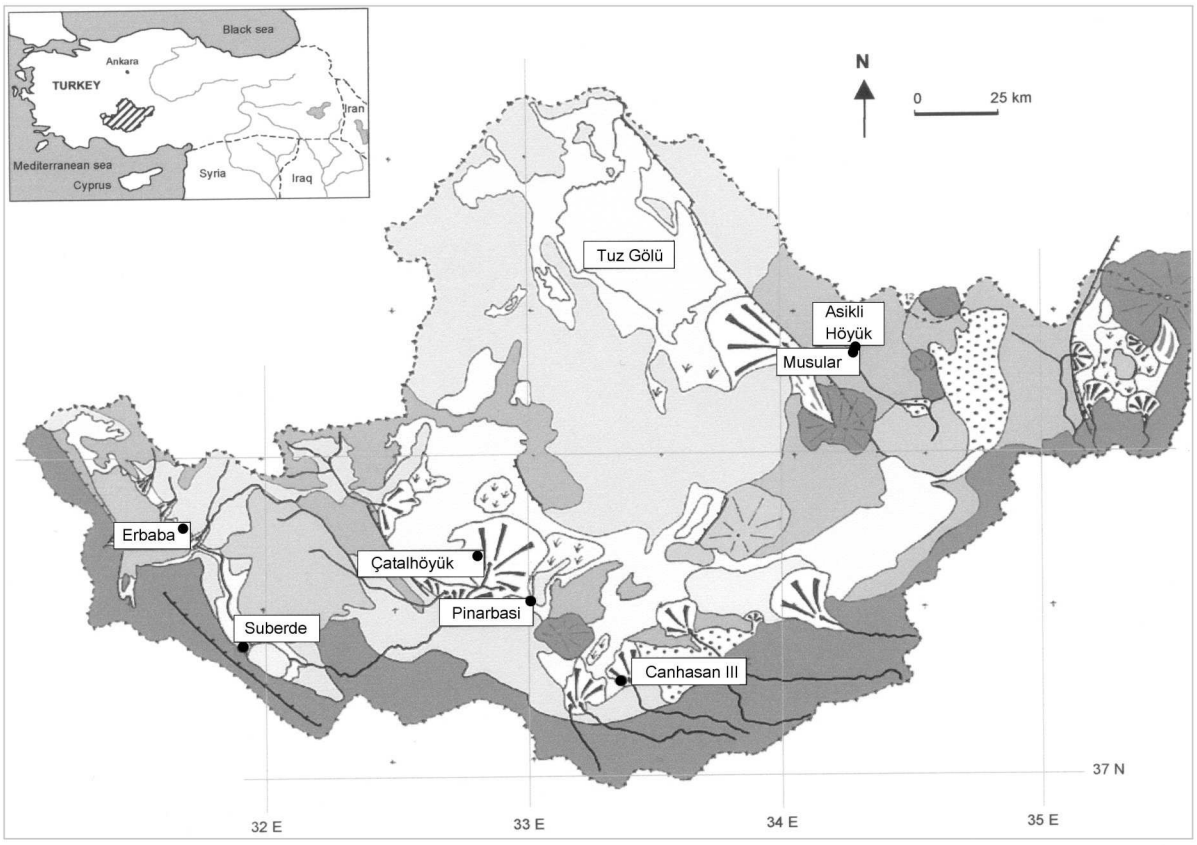

Fig. 1. Regional map of Central Anatolia with location of Pınarbaşı (Map taken from Kuzucuoğlu 2002).

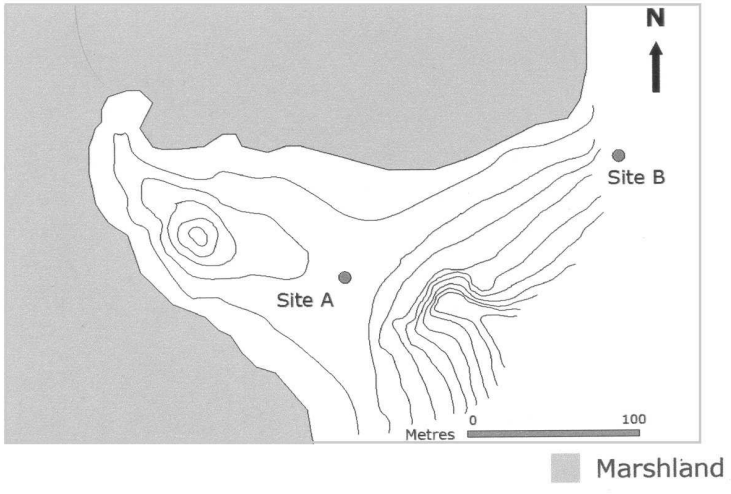

Fig. 2. Location of Sites A and B at Pınarbaşı.

Table 1. Site A taxa NISP (N) by context with weight of bone (W) in grams and litres of soil processed.

Taxa		ABR				ABU				ABJ				Total			
		N	**%**	**W**	**%**	**N**	**%**	**W**	**%**	**N**	**%**	**W**	**%**	**N**	**%**	**W**	**%**
wild cattle	*Bos primigenius*	-	-	-		7	7	276.4	62	4	11	82.9	57	11	7	359.3	58
equid	*Equus* sp.	-	-	-		1	1	27	6	1	3	12.5	9	3	2	59.5	10
	Equus hydruntinus					1	1	20	5					1			1
sheep	*Ovis* sp.	-	-	-		10	10	72.7	16	2	6	11.6	8	12	7	84.3	14
sheep/goat		2	10	2.1	10	25	24	8.85	2	-		-		27	17	11.0	2
cervid	*Cervus elaphus*	-	-	-		2	2	13.5	3	1	3	2.6	2	3	2	16.1	3
Pig	*Sus scrofa*	3	14	2.5	12	5	5	3.4	1	5	14	13.2	9	13	8	19.1	3
Fox	*Vulpes vulpes*	7	33	8.4	40	32	30	8.8	2	11	31	5.5	4	50	31	22.7	4
Hare	*Lepus* sp.	3	14	0.5	2	4	4	2.1	0	3	8	6.7	5	10	6	9.3	2
Bird	Aves	5	24	7.35	35	17	16	14.9	3	7	19	10.4	7	29	18	32.7	5
beaver	*Castor fiber*	1	5	0.2	1	-		-		-		-		1	1	0.2	0
Fish	Pisces	-	-	-		1	1	0.05	0	2	6	0.1	0	3	2	0.2	0
Total		***21***		***21.1***		***105***		***447.7***		***36***		***145.5***		***162***		***614.2***	
Liters of soil processed per context				140				280				132				552	
NISP per soil volume (NISP/L)		0.15				0.38				0.27				0.29			
Bone weight per soil volume (g/L)				0.15				1.60				1.10				1.11	

NISP of identifiable taxa within each context with weight of bone and litres of soil processed. Since the site only produced 162 identifiable animal bones, quantitative treatment of this assemblage beyond species identification will be limited until a much larger faunal assemblage is recovered from future excavations.

The overall condition and preservation of the 162 identifiable bones was very good. The bones do not appear to have sustained extensive bone weathering features and prolonged surface exposure prior to burial. In addition, the bones recovered are not as highly fragmented as would be expected from a site with such early dates.

Analysis of the faunal material from Pınarbaşı Site A reveals an assemblage that includes sheep, wild cattle, horse, boar, fox, hare, tortoise, fish and fowl. Avifaunal remains were identified into family type categories only (Cohen and Serjeanstson 1996). The bird bones identified include game birds (Phasianidae) such as grouse and partridge, water birds (Anatidae) such as duck, and song birds (Passeriformes). In addition, the remains of a large bird of prey (Accipitridae), possibly a vulture, were recovered. One beaver bone was recovered from context ABR. The small number of fish remains recovered was surprising given the probable large local water resource close to the site.

All of the taxa from the site are wild, although a more extensive analysis was performed on the sheep and pig bones in order to see if the inhabitants from Site A had domestic taxa at this early occupation date.

Sheep

Sheep mortality analysis indicates that 89% of the bones come from animals killed before 2.5 years. The less than 10 month age category also contains astragalus and calcaneus bones that are foetal in morphology. Sheep body part representation indicates that butchery and discard of non-meat bearing bones occurred at the site.

Only one bone measurement could be taken from a sheep atlas bone (Table 2). The atlas measurement from Site A was compared with a standard sheep using Meadow's (1999) log size index method (Table 3) and the atlas GLF measurements from Musular and Güvercinkayasi (Table 4). Site A's GLF

atlas measurement is smaller than those from Musular and comparable in size to those from Güvercinkayasi, which are considered domestic (Table 4) (Buitenhuis forthcoming). The atlas log size index measurement from Site A was then compared to log size index measurements of sheep bones from proto-domestic sheep at Musular and Aşikli and domestic sheep from Yumuktepe, Tepecik and Güvercinkayasi (Buitenhuis forthcoming) all located in Anatolia (Fig. 3). The sheep from Site A fall within a wild population size spectrum similar to those produced by Musular and Aşikli. It appears that the one sheep bone measurement recorded from Site A is comparable in size to those from a domestic population but on a broader log size index comparison, the Site A atlas measurement falls within a wild population percentile.

Following criteria to distinguish between a wild and domestic population, the assemblage could possibly indicate management where culling was taking place as young animals prevail, their bone size appears smaller than comparative wild material, and caprines represent a large portion of the overall assemblage. However, very few measurements could be taken that could be used as a primary source of evidence in determining domestication. The assemblage could also be argued to reflect a hunting strategy whereby a female nursing herd comprised of young individuals and pregnant females was killed. Until more quantitative material is recovered, the sheep bones from Site A are interpreted as wild.

Pig

Thirteen pig bones were recovered from Site A. Based on tooth wear and bone fusion stages, pigs between 6 months - 2.5 years and above were killed. The high percentage of pig within the assemblage raises the possibility of the taxon being domesticated. Any investigation of domestication is restricted and this is compounded by a very small sample size. However, inferences can be extrapolated from the recovered material. The proportion of juvenile animals in the sample is extremely high (92%) and almost all of specimens died before the age of three years, indicating that the taxon was used predominantly for meat and for their primary products. Selective culling of domestic swine is focused on age ranges between 6 to 18 months of age (Zeder 1996). The age profile at Site A could, theoretically, fit a domestic profile. However, the location of the site must also be taken into consideration. The excavation of the site has not revealed any evidence of long-term structures with regard to settlement and houses. Pigs are not animals that can be easily driven to external seasonal sites. It is not outside the realm of possibility that piglets were transported to the site given the presence of domestic pigs at Hallan Çemi and Çayönü (Hongo *et al* 2002). However, both these sites are large settlements and there is no cultural data from Site A to suggest it was anything more than a seasonal site. Piglets would have been easily hunted at Site A, as they would have inhabited the marsh area close to the site. Given the early date, the location of the site and the lack of semi permanent structures, the pig remains from Site A are probably representative of a wild boar population.

Seasonality

Occupation of Site A can be inferred from animal bone data derived from fusion and tooth eruption data, and animal life cycle behaviour (Davis 1995). Within context ABU, sheep astragalus and calcaneus bones that were very porous and not yet fully developed indicate a foetal individual. The rutting season of wild sheep is during October and November with young being born in April and May (Geist 1971). Based on the foetal morphology of these bones, human activity would have been taking place at the site in late February to late March in order to butcher a pregnant female sheep. Context ABR, ABU and ABJ had pig teeth which appear unworn and with no roots or wear which are dated to approximately one month of age. Sows generally give birth approximately three months (110-115 days) after the rut which takes place between November and January indicating a March to May occupation.

The presence of juvenile fox bones in context ABU indicates a late fall/early winter occupation as fox bones begin to fuse between 6 to 10 months of age (Davis 1977). As with all seasonality analyses, evidence of occupation between February and May, and then again in the early fall and late winter, based on age at death does not mean that occupation did not occur at other times during the year. It only means that the animal bones recovered indicate activity during these two periods.

Table 2. Measurements in mm of fused sheep bones from Pınarbaşı Site A.

Bone	**Atlas**				
Measurements	**BFcd**	**GL**	**GLF**	**H**	**GB**
Data	60.5	55.7	48.7	44.4	68.9

Table 3. Log differences in sheep bones at Pinarbasi Site A compared with standard sheep (Buitenhuis forthcoming).

		Pınarbaşı Site A		**Log 10**	**Log 10**	**Log Difference**
Element	**Dimension**	**sheep bone measurement**	**standard skeleton**	**Pınarbaşı *sheep***	**Standard skeleton**	**Pınarbaşı - standard skeleton**
Atlas	GLF	48.7	49.4	1.687	1.693	-0.006

Table 4. Measurements in mm of sheep atlas GLF from Pınarbaşı Site A, Musular and Güvercinkaya (Buitenhuis forthcoming).

Atlas	**Pınarbaşı Site A**	**Musular**	**Güvercinkaya**
	GLF	**GLF**	**GLF**
N	**1**	**6**	**4**
Min	**48.7**	**50.1**	**46.3**
Max	**48.7**	**57.0**	**50.8**
Mean	**48.7**	**54.5**	**47.9**
Data	48.7	50.1	46.3
		50.5	47.3
		56.0	47.3
		56.7	50.8
		56.8	
		57.0	

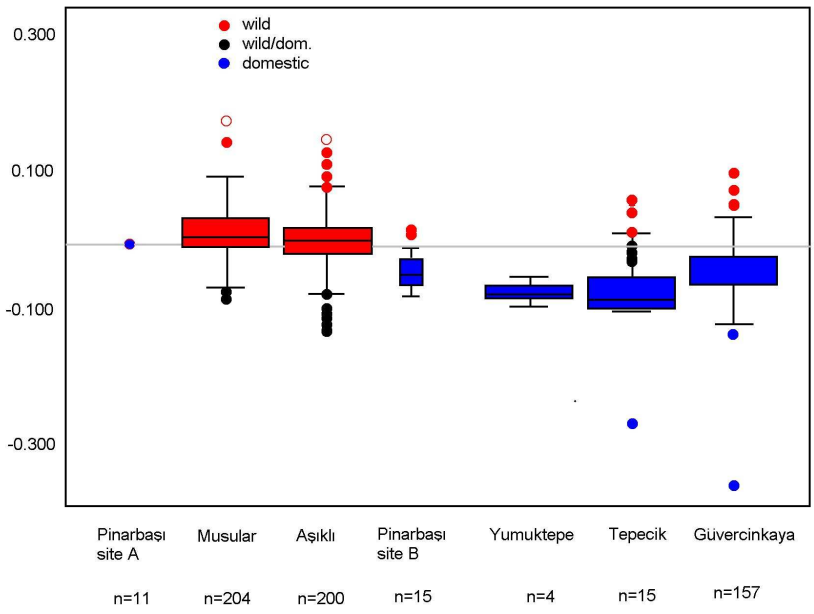

Fig 3. Boxplots of the variation of size indices (SI) for *Ovis* sp. compared to a standard individual from Pınarbaşı Site A (Table 4) and other Central Anatolian sites (Buitenhuis forthcoming).

Pınarbaşı's Rock Shelter Site B

Pınarbaşı's Rock Shelter Site B produced 63,306 animal bones for analysis. Of these, 2385 bones were identified to taxon and 60,921 bones were classified as fragments. The 60,921 unidentifiable fragments represent 96% of the animal bone assemblage. These fragments have been subclassified as 60,208 unidentifiable fragments, 713 large mammal sized fragments and 457 medium mammal sized fragments. The 2385 identifiable animal bones weighed 32,621 grams and were recovered from 5183 litres of dry sieved and floated soil material.

The range of taxa found at Site B (Table 5) is very broad given the size of area excavated. Sheep, goat, two species of wild cattle, three species of wild equids, red deer, wild boar, wolf, fox, wild cat and hedgehog were recovered. Non-mammalian taxa include bird, frog, and tortoise. Due to the implementation of flotation at the site, bird and microfaunal remains were recovered from every sample processed. Tortoise remains were limited to carapace fragments. Of particular note is the absence of fish from the assemblage considering the location of the site at a spring, and environmental indications of large fresh water lakes being common during the occupation period.

Of the mammalian fauna, sheep and goat remains dominate the assemblage at 56% with the majority being comprised of sheep. Their presence is relatively continuous throughout all of the contexts along with cattle, horse, fox and bird.

Table 5. NISP counts from Site B all contexts.

Taxa		**NISP**	**%**
cattle	*Bos primigenius*	330	14%
	Bison bonasus	2	<1%
horse	*Equus* sp.	254	10%
	Equus hydruntinus	16	1%
	Equus hemionus	2	<1%
	Equus ferus	1	<1%
goat	*Capra* sp.	15	1%
sheep	*Ovis* sp.	1027	43%
sheep/goat		277	12%
deer	*Cervus elaphus*	39	2%
pig	*Sus scrofa*	14	1%
wolf/dog	*Canis* sp.	22	1%
fox	*Vulpes vulpes*	175	7%
carnivore		70	3%
hedgehog	*Erinaceus sp.*	2	<1%
wild cat	*Felis silvestris*	3	<1%
hare	*Lepus* sp.	47	2%
bird	Aves	64	3%
turtle	Testudo	25	1%
Total		2385	100%

Cattle

Two distinct species of cattle were recovered from Site B, the aurochs *(Bos primigenius)* and bison (*Bison bonasus)* (Balkwill and Cumbaa 1992). Measurement and kill-off pattern data indicate the cattle were wild (Table 6 and 7).

Caprines

Sheep and goat bones represent 67% (NISP) of the major taxa from Site B. Sheep measurement data indicate they were domestic (Table 8 and Fig. 3); however, the goat bones produced a measurement that indicates they were still wild (Table 9). The caprine kill-off pattern established by bone fusion

and teeth analysis reflects a high kill-off of young animals within the first and third years, with a smaller population of mature animals killed between 3-10 years. Body part representation indicates that all body parts are represented at the site.

Horse

Three distinct wild equids have been identified at Site B: *Equus hydruntinus, Equus hemionus and Equus ferus* based on teeth enamel patterns (Payne 1991). Body part representation indicates the equids were killed and dismembered at Site B. As with the other major taxa, feet and cranial elements dominate the body part distribution. Meat bearing elements such as long bones are under-represented.

Pig

A very small number of pig bones were recovered from the site which makes the determination of their wild versus domestic status difficult. Similar to Site A, tooth age, size, wear evidence and bone fusion indicate that piglets were primarily butchered at the site. Until more pig bones are recovered from Site B, they have been classified as a wild population, *Sus scrofa*.

Birds

Analysis of bird bone material from Site B is in a preliminary stage. Five different groups were identified based on the type of bones recovered. These are Pelecaniformes which include cormorants and pelicans; Ciconiiformes which include herons and storks; Anseriformes which include waterfowl such as duck, geese and swans; Galliformes which include fowl and game birds such as partridge and grouse. Of particular note is the identification of a Dalmatian Pelican (*Pelecanus crispus)* which was identified[4] based on size and morphological characteristics of a right proximal tarsometatarsus.

Seasonality

Seasonal activities can be determined by reviewing the age of the animals at their time of death. The rutting season for wild goats and sheep is primarily during October and November and young are born in March/April. Foetal sheep/goat bones were recovered, a metapodial III or IV diaphysis fragment along with other very porous bones. The diaphysis of metapodials III and IV fuse at birth (Silver 1969). As this metapodial III or IV shaft is unfused, an occupation in March and early April is suggested for the site. An unfused sheep/goat acetabulum was also recovered placing the age less than 6 - 10 months old (Silver 1969). The bone shows signs of starting to fuse, which suggests a fall and early winter occupation at the site. Sheep and goat first and second phalanges were also just beginning to fuse, supporting a March/April presence at the site. In addition, the majority of phalanx elements recovered are unfused or just beginning to fuse. These elements fuse within age ranges of 13-16 months (Silver 1969), again suggesting a spring/summer occupation of the site. The cull of these animals also indicates a reduction in the flock just after the arrival of new lambs. It remains unclear if these animals were primarily male, but based on herding strategies (Binford 1981) it would be logical to cull male caprines, which at 13-16 months would have attained a maximum meat capacity and leave grazing resources to the next generation within the flock. Based on the age of caprine bones, March/April and November/December periods of occupation occurred at Site B.

The identification of *P. crispus* which migrates through central Anatolia in late March early April and then again in late September early November, supports the caprine data presented above for occupation in March/April and November/December periods. An unfused fox calcaneum bone also supports a winter occupation as this bone would have fused before one year, and the bone appeared to be from a juvenile. Based on the data presented above, occupation was detected in the spring and early winter.

[4] Identification was made by Joanne H. Cooper in April 1997 at the Natural History Museum, Hertfordshire as this one bird bone was brought back to the UK.

Table 6. Measurements in mm of fused cattle bones from Pınarbaşı Site B.

	Phalanx 2				Metatarsal
	Bp	**GL**	**SD**	**Bd**	**Bd**
Data	37.1	46.9	31.3	31.4	60.4

Table 7. Log differences in cattle bones at Site B, compared with the wild *Bos primigenius**
*Measurements of wild *Bos* taken from Grigson (1989).

Element	**Pınarbaşı Site B**	**Bos primigenius**	**Log 10**	**Log 10**	**Log Difference**
Measurement	**cattle bone measurement**	**Standard skeleton**	**Pınarbaşı cattle**	***Bos primigenius***	**Pınarbaşı *Bos primigenius***
Metatarsal (Bd)	60.4	68	1.781	1.830	-0.048
Phalanx 2 (GL)	46.9	35	1.671	1.544	0.127

Table 8. Log differences in sheep bones at Site B compared with standard sheep.

		Pınarbaşı Site B		**Log 10**	**Log 10**	**Log Difference**
Element	**Dimension**	**sheep bone measurement**	**standard skeleton**	**Pınarbaşı *sheep***	**standard skeleton**	**Pınarbaşı – standard skeleton**
Atlas	GLF	48.9	49.4	1.689	1.693	-0.004
Radius	Bd	28.8	35.3	1.459	1.547	-0.088
		28.2	35.3	1.450	1.547	-0.097
Astragalus	GL	27	32.9	1.431	1.517	-0.086
		28	32.9	1.447	1.517	-0.070
		27.8	32.9	1.444	1.517	-0.073
		29.2	32.9	1.465	1.517	-0.052
Calcaneus	GL	57.9	68.2	1.762	1.833	-0.071
		69.6	68.2	1.842	1.833	0.009
		57.9	68.2	1.762	1.833	-0.071
Metatarsal	Bp	18.1	23	1.257	1.361	-0.104
		19.9	23	1.298	1.361	-0.063
Phalanx 1	GL	37.6	40.4	1.575	1.606	-0.031
		36	40.4	1.556	1.606	-0.050
Phalanx 2	GL	21	24.7	1.322	1.392	-0.070

Table 9. Log differences in goat bones at Pınarbaşı Site B compared with standard goat.

		Pınarbaşı Site B		**Log 10**	**Log 10**	**Log Difference**
Element	**Dimension**	**goat bone measurement**	**standard skeleton**	**Pınarbaşı goat**	**standard skeleton**	**Pınarbaşı-standard skeleton**
Tibia	Bd	26.4	22.2	1.422	1.346	0.075

Synthesis of Pinarbaşi Site A and B faunal material

Site A is typical of an early Neolithic site as it is located in the open, yet still close to a major rock shelter (Bar-Yosef 1995). Architectural remains indicate that the site was used for prolonged periods as a seasonal settlement. The major taxa from Site A represent less than 50% of the total assemblage indicating "broad spectrum" subsistence (Fig. 4). The broad spectrum of Site A's assemblage is therefore interpreted as opportunistic hunting in the various environments that surrounded the strategic location of the site. All of the taxa recovered are interpreted as being wild. However, the status of the sheep remain inconclusive as there is morphometric data suggesting a smaller sized sheep was present at the site compared to other sheep recovered from Central Anatolia. Whether this represents hunting of pregnant female herds or a proto-domestic relationship with sheep during the transition from hunting to herding still remains unanswered. A proto-domestic/domestic relationship existing before 8500 cal BC in Central Anatolia is not inconceivable as it would mark the transition from a small hunting site to the larger sedentary occupation of Aşikli (Buitenhuis 1996, 1997) a century later.

Pınarbaşı Site B is interpreted as a caprine herding site where occupation can be confirmed in March/April and November/December. The animal bone assemblage is dominated by isolated teeth and dense bones such as carpals, tarsals, sesamoids and phalanges. The high number of unidentifiable bone fragments, primarily from medium sized mammals, suggests that all skeletal elements were originally present during initial deposition and their analytical absence is due in part to post-depositional destruction, but primarily from intensive human butchery and processing of the bone. This fragmentation pattern indicates complete skeletons of medium sized animals were killed and butchered at the site.

There is inferred evidence of structures existing within the rock shelter from the recovery of shed deciduous molars from lambs that might indicate a penning wall existed at one time. In addition, deposits with stone uprights that have been interpreted as tent foundations have been recorded (Baird 2002). Spatial analysis indicates cattle, horse, deer and foxes were hunted at particular times, rather than scattered throughout the contextual sequence. Wild taxa appear to have been targeted for meat when domestic sheep and goat yields were not at their highest return, and could therefore mean possibly a more permanent occupation of the site where differentially available resources were acquired

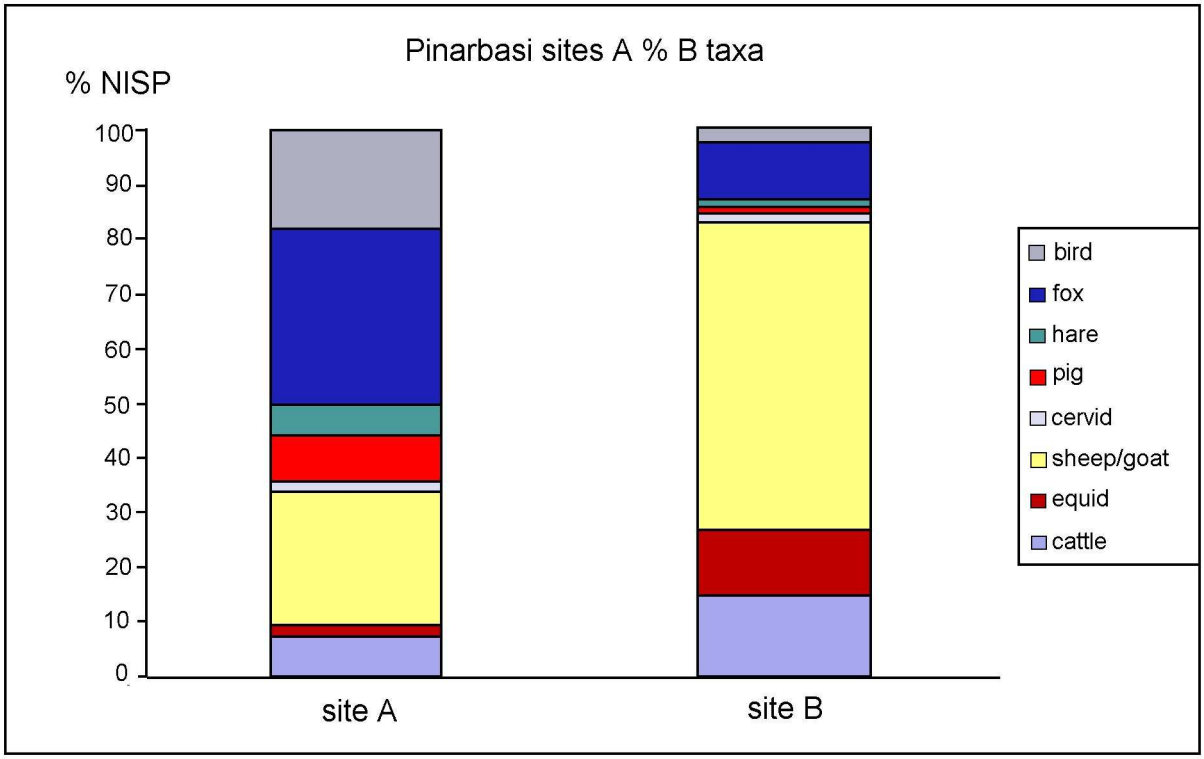

Fig. 4. The relative proportions of selected taxa from Pınarbaşı A (NISP=162) and B (NISP=2385).

throughout the year. The continuation of hunting indicates wild taxa were not abandoned in favour of domesticates. On the contrary, they appear to be as important within the diet of both periods of occupation. The continued presence of small game animals such as fox, hare and bird within a 6th millennium assemblage at Site B is unique within Neolithic faunal assemblages. The relative abundance of small game dramatically decreases prior to and during the early stages of the transition to agriculture (Munroe 2002). Munroes' (2002) research reveals a decrease and at times elimination of low-ranking game within caprine herders' diets throughout the Zagros foothills of Iran and Iraq. Whether this is a result of settlement type, i.e. urban centres versus the excavation of smaller herding camps, has not been addressed. It does, however, appear that at Site B, despite caprine domestication, small game animals continue to play a large role within the herders' diet.

The term "hunting and herding" in the title reflects the diversity in behaviour that was taking place at Central Anatolian sites from the mid 9th to the late 6th millennium cal BC. The initial evidence suggests that during the mid 9th millennium cal BC there were communities that relied primarily on hunted resources. Faunal data from Pinarbasi Site B reveals subsistence strategies of hunter-gatherers were not abandoned in the process towards domestication. Early Neolithic communities within Central Anatolian devised subsistence strategies that combined hunting traditions in addition to pastoralism in order to fulfil the needs of a sedentary lifestyle well into the late Neolithic.

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