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ANTHROPOLOGICAL APPROACHES
TO ZOOARCHAEOLOGY

COMPLEXITY, COLONIALISM, AND ANIMAL TRANSFORMATIONS

edited by

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ISBN 978-1-84217-390-9

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Animals and Complexity: How Zooarchaeologists Contribute to the Study of Complex Society in the New and Old Worlds

Justin Lev-Tov and Susan D. deFrance

Animals in complex human societies are often both meal and symbol, related to everyday practice and ritual. People in such societies may be characterized as having unequal access to such resources, or else the meaning of animals may differ for component groups. Here, in this book, 28 peer-reviewed papers that span 4 continents and the Caribbean islands explore in different ways in which animals were incorporated into the diets and religions of many unique societies. The temporal range is from the Neolithic to the Spanish colonization of the New World as well as to modern tourist trade in indigenous animal art. The first section is the most general, containing a variety of studies on the interaction of foodways with complex societies via themes such as status, stratification, feasting, and economics. The second section springs from the first, and in it authors all address one theme in particular, the interaction between diet and colonialism. Our final section explores the complex role that animals, and parts of animals, play in all human societies as religious, identity markers, or other types of symbols. Animals are not only passive actors but, as creatures living intimately with their human counterparts, are actively used by people to express beliefs about human interactions and beliefs.

This volume is organized according to these themes rather than according to geographic location or time period. We believe that – clearly – these issues crosscut both such divisions. In so doing, we hope that this book will present an opportunity for scholars divided by geography especially, but also by temporal period, to read about each other’s research and perhaps to bring these ideas into their own research, even if it is regionally and temporally divergent from the examples offered here. In other words, different archaeological settings can perhaps address the same problems cross-culturally.

Because the volume is arranged not along the lines of time and space demarcation, but rather as a series of case studies of revelations of diet for the study of social complexities, what follows are some general remarks about themes the essays address. Just as the papers presented here cover many of the subjects traditionally focused on

within the study of complex societies (cf. Crabtree 1990), it is also interesting that they address their subject matters in distinct ways.

Research themes that emerged prominently in this realm of zooarchaeology include the origin of state societies and the development of centralized control over agriculture and specifically meat distribution to urban, presumably non-food producing, residents. Other subjects treated quite a bit in the literature concern the internally divided populations that typify and even define complex civilizations. Populations in such societies are divided by group origin or identification, that is to say ethnicity, by access to power and wealth, in other words status and class, as well as gender roles. Arguably, an offshoot from the study of status and wealth relations through diet has been the employment of zooarchaeology in the study of colonialism. Colonialism, since it is ultimately about relations of power and the negotiation of identity between intrusive and indigenous groups, or even two intrusive groups, lends itself well to the study of animal use and diet. Food is a locus of culture at once public and private, shared at the community level and held private within the family. As well, food has often been a means by which dominating groups have tried to complete their cultural conquests, consciously or not. Building on the theoretical chapter by Campana, the case studies by De Nigris et al. examine the role of hunger in a Spanish colonial setting in Tierra del Fuego. Elsewhere in the Spanish Empire, studies by Tarcan and Driver and Pavao-Zuckerman address the indigenous response to Spanish colonization of the American Southwest and northern Mexico. The paper by Gifford-Gonzalez provides an interesting critique of the questions being addressed by zooarchaeologists researching the American Southwest.

At times, the processes that shape diet in complex societies are woven closely together. Within the archaeology of colonialism, Dietler (2007) has argued that “goods, and especially foods, have not only been appropriated and indigenized, but they have also been used by both parties in colonial situations to attempt to control the other.” Several

authors in this volume examine ancient Roman colonialism in Europe and North Africa, seeking to separate indigenous from native carnivory. Crabtree as well as Lyublyanovics set out to study the effects of Roman colonialism on diet in different parts of Europe, but along the way wind up considering questions of identity, what is native and what is Roman, rather than purely economic and political questions. MacKinnon demonstrates the remarkable dietary changes which took place in ancient Carthage at the time of the Roman conquest, and how those trends waned as the Roman hold on the city weakened. In these colonial situations, subordinate groups may resist such actions by retaining pre-existing foodways or even cooking up a creole of traditions.

Other papers in this volume examine the intersection of diet and empires from alternative perspectives. Lev-Tov's paper examines the effects the Neo-Assyrian Empire's conquest of the Levant had on the diet of Philistines there, wherein the local people's diet was changed to accommodate the commercial interests of the colonizers. A similar issue of the role of empire expansion on the local use of animals is addressed in the paper by Capriles *et al.* in their examination faunal remains in pre and post-Inka contexts from the site of Yoroma in Bolivia. Despite evidence from surrounding sites to the contrary, the latter authors demonstrate that Inka political dominance at this site did not lead to dietary changes. DeNigris *et al.* present the sole study of a failed colonial adventure, this one in southern Argentina, where a Spanish settlement failed after only a few years, despite – or because – the colonists out of necessity had taken to hunting some of the wild animals that native hunter-gatherers had also pursued.

The animal link between many societies that were colonized, and the colonizers, has been, more than the dietary staples brought with them on the hoof and consciously, the commensal fauna that sometimes preceded but always accompanied such efforts. O'Connor discusses commensal animals, their importance and their categorization. These fauna occupy a gray zone between the wild and domestic, and therefore, escape our attention despite the key role such animals have played. Vretemark and Sten address another sort of companion to humans, dogs. They study how that animal played multiple societal roles, as pets, actual and symbolic guardians, and ritual food in their study of Neolithic canid remains from a Hungarian Bronze age fortified site.

While our conceptions of some animals are almost nonexistent, with others we entertain nearly uniformly negative views. In this volume Gonzalez demonstrates how sharks in Brazil formerly held special status, as seen in the frequency of different species' skeletal elements as they occur in settlements vs. burial mounds. The implication, of course, is that rather than feared and loathed, certain shark and other elasmobranch species were instead sacred. If human societies of all kinds have complex and non-economic relationships with various species, certain animal body parts also have special status outside of food considerations. Similarly, Cooke and Jiménez address the

cultural attitudes that ancient Panamanians had toward varied tropical animals and how animals and their products were used to establish hierarchy and status.

Clearly, one such arena of belief would be animal sacrifice, whether the custom involved is the selection of species to ritually slaughter and how to preserve the magic of the act, or which portions of the body might have more power than others. Two papers in this volume touch on these subjects, as Daróczy-Szabó examines a pagan Hungarian practice, continued into the Christian era, of burying sacrificed animals in upside down pots, while MacKinnon's examination of side preference in ancient sacrificial portions focuses on ancient Greece. In the latter paper, the author draws an interesting parallel to human handedness that may have influenced sacrificial preferences. Morris addresses the ways people used Associated Bone Groups (ABGs) in distinct contexts in Neolithic to medieval period sites in southern Great Britain to create meaning including changes in animal use following "Romanization" of the region.

Gumerman (1997, 106, 114, 116) pointed out that food is intrinsically social, in that people choose to eat or avoid certain foods and base their decisions on concerns such as the status or identity values it connotes. Part of the reasons for this has to do with the fact that consumers are not always, the producers in such societies. Here, contributing scholars use different case studies from Europe to assess the extent to which studies of animal bones may help us understand the identity of the Celts in Europe. Stallibrass draws on evidence of articulated and burned bones deposited within pits at a Hellenistic period site in Bulgaria, to argue that the Celts were at least one component of the city's population. In another study of identity and animal bones, Bartosiewicz and Gál draw on both unworked and worked bone data from multiple sites in a border area of Hungary to attempt to sort out which ethnic groups inhabited certain sites. The relative abundance of steppe animals within an earlier sample suggests that so-called Scythian peoples occupied the area at least in part, while the later collection, with higher amounts of pig bones, has more of a settled, Celtic character to them. The authors nonetheless argue that the assemblages do not provide profiles completely compatible with either group showing that the frontier area was typified by interaction rather than rigid cultural borders.

Other papers in the volume tread more familiar, but no less intriguing, ground, covering the important themes of provisioning, how urban residents obtained their food, whether through independent means or via governing officials, often elites, who distributed animals or meat to non-food producing classes of workers. The development of these types of distributive hierarchies is one of the general defining characteristics of the state, and it is therefore interesting that the two papers that explore that theme, both using datasets from the Near East, come to opposing conclusions regarding their sites. Redding examines the diet of the workers who built one of the pyramids of Egypt, and argues that the status of different workers is

visible in the types of meats they were provided. Status is not only visible in the (zoo)archaeological record, the state identified certain peoples' statuses by prescribing a diet for them. Allentuck and Greenfield, however, found no visible link between status and diet based on their study of faunal remains from a similarly early state-level site, this in Turkey. While these two papers come to different conclusions, they both take a bottom-up approach to the study of diet.

The archaeological delineation of status has long occupied archaeologists and zooarchaeologists studying the sites of complex societies, deFrance's recent (2009) review of zooarchaeological approaches to status highlights the challenges of the subject, perhaps the most critical being that class-based dietary choices vary highly from one time and place to another. In Mid-Continental North America Kelly examines how birds, or parts of them, were transformed from beasts to powerful symbols as a part of communal feasts that involved many segments of society at Cahokia. In the present volume, deFrance illustrates the difficulty in discerning high status food and animals that might have been used in feasts by an emerging Puerto Rican chiefly society. Although it is widely recognized that a stratified society existed in that study area, social differentiation evidently was not symbolized via access to different animals incorporated into the population's diet.

State religion(s) and elaborate rituals are of course a hallmark of societies throughout time, so it is only natural that such worldviews would extend also to the realm of animals in culture. Not only what people ate, and sacrificed, but certain animals or even skeletal elements can themselves become ritual objects derived from cultural beliefs about the biological animals in which they originated.

Taking up these themes, a number of papers in this volume address the transformation of animals, and bones, into objects of special interest and/or devotion for past peoples. Choyke presents an overview of the topic, demonstrating how societies past and present have imbued various animals with magical properties. In addition, Choyke discusses bone amulets found in Hungarian early medieval graves as examples of the transformative process, from living animal, to bone, to carved object with prophylactic powers. Other examples presented here include the significance of the quetzal bird to the former state societies of central

Mexico (Aguilermo) and the transformation of bird feathers and skeletal elements into powerful material symbols for Mississippian elites (Kelly). Using artwork from Bronze Age Armenian sites as a basis for discussion, Manaseryan demonstrates that the depiction of animals using metal and other materials was done in such a way as to emphasize certain species' behavioural or physical characteristics esteemed by ancient societies there.

The material and symbolic transformations through time of tupilaks, that is, items carved from whale ivory by the native population of Greenland (Sims and Yates) has relevance both to understanding the indigenous Inuit but also modern economics of trade in endangered animals. Thus, during the Neolithic period of southeastern Europe, as Trantalidou's paper details, it was the skulls of cattle, both real and imitated in clay that held some kind of special, symbolic significance for those peoples.

The chapters that follow take up the above and other diverse themes, all in the pursuit of the ways in which past societies manipulated animals, meat, and the products derived from animals as raw materials, to give expression to a number of social processes. Zooarchaeology, however, is not an end in itself, but rather a subfield that contributes to the overall picture of past lives and societies unravelled through archaeological study. These essays demonstrate the utility of animal bone studies in aiding the understanding of past hierarchical and multiethnic social systems.

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4. Body Parts, Placements, and People in an Iron Age Town in Bulgaria

Sue Stallibrass

A preliminary study of animal bones from an Iron Age town in Bulgaria compares three archaeological contexts in an attempt to understand Who? did What? in the past and Why? and How? they did it. The deposits comprise one surface layer and two clay-lined pits. Archaeological evidence from masonry structures, industrial waste and prolific coins and imports of ceramics demonstrate that the town was a place of commerce and long distance trade, and also a center for metalworking. Spatial organization indicates urban planning, and the town was densely occupied. With such a range of activities, archaeozoologists should expect the animal bones to reflect a similar degree of complexity. The dumping of bone refuse at the back of the town wall can be interpreted as rubbish clearance or territorial definition. In this instance, the content of the deposit is unremarkable, while the location may be significant. The deposits in two clay-lined pits combine restricted locations with selected contents, but while the structures of the pits are very similar, their contents are very different. One had butchered, cooked and defleshed remains of several sheep/goat carcasses in its basal deposit, while the other had a layer containing butchered but refitting bones from three lower legs of cattle. A new methodology uses surface color to investigate the deposition of articulated but defleshed body parts. The specific treatment and selection of cattle lower limbs has parallels in Western and Central Europe and is very different to the 'Olympian' style illustrated by archaeological deposits and literary references in nearby Greece. The possibility is raised that the observed different styles of treatment of animals and their remains may reflect differences in activities or belief systems, which may in turn relate to cultural or ethnic affiliations, but full treatment of this aspect is beyond the scope of this paper.

Keywords: animal bones, scorching, color, Iron Age, Associated Bone Groups

Introduction

The paper uses some preliminary work on animal bones from an Iron Age town in Bulgaria to investigate past human behavior. It concentrates on the need to look for, and identify, different modes of deposition, and to consider these in relation to what people were doing, thinking, and feeling. The site provides a good challenge: architecture, artifacts, and written evidence all suggest that the site provided a range of social, economic, and ritual functions, and that a variety of people may have inhabited or visited the town. This period in Europe's prehistory has been described by Cunliffe (2008, 317) as 'States in collision: 500–140 BC' due to the complex interactions of expanding empires, mobile warrior groups, and migrating refugees. Can we identify the people who created the animal bone deposits? This paper employs the Whodunnit model (Stallibrass 2007a) which uses a detective system to ask explicit questions about people's past behaviour.

The structured deposition of selected body parts ('Associated Bone Groups' or ABGs *sensu* Hill 1995) in Iron Age deposits in Europe has been noted by several animal bone specialists whose analyses provoked considerable debate in the 1980s and 1990s (Grant 1991, Lambot *et al.* 1996, Wilson 1992). At the time, processual archaeology was the principal paradigm, and the main arguments concentrated on distinguishing deliberate placement (viewed as sacred ritual) from routine discard behavior (viewed as secular functionalism). Currently, there is renewed interest in these (Morris this volume; 2010) and a greater awareness that this apparent dichotomy may be a construct of modern observers (Brück 1999).

The site

The animal bones were recovered by various international teams excavating at an Iron Age town in central Bulgaria

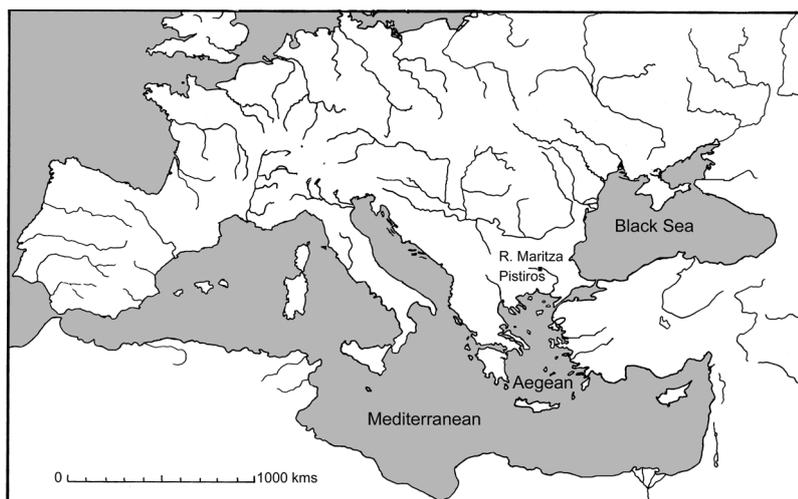


Figure 4.1. Location map of Pistiros (near Vetren in modern Bulgaria) on the Maritza River, which drains from the Thracian plain into the Aegean Sea.

(see Stallibrass 2007b). The town, near Vetren in the municipality of Septemvri, may be the Greek *emporion* ‘Pistiros’ mentioned in an inscription found nearby. It is located on the River Maritza, about 100 km upstream of Plovdiv (Philippopolis) and close to the western edge of the Plain of Thrace, which was ruled over by the Odrysian kings (Archibald 1998). North-south routes through mountain ranges cross the river here, which was navigable this far inland. Upstream to the west, a gorge has probably always posed a barrier to boats but the river follows a pass through the low mountains towards Sofia, where other rivers and their valleys offer routes to the Hungarian Plain and the River Danube. This is a well-used east-west route from Asia to Europe, via the Bosphorus and avoiding the Iron Gates Gorge on the Danube (see Fig. 4.1). Downstream, the river flows east then south (as the Hebros) and enters the Aegean Sea at Aenos (Enez), an important Iron Age port for Greek trade.

The site was occupied from the fifth to second centuries B.C. and flourished in the fourth and third centuries, when it enjoyed the benefits of considerable trade with Macedonia and the Aegean islands (Archibald 2002). It had a monumental town wall, paved streets and some substantial buildings. There is considerable evidence for iron working inside the town, many hearths or altars (the features are called ‘altar-hearths’ in Bulgarian) and areas with many pits. Some of these are clay-lined, presumably to facilitate repeated access.

The artifacts derive from many sources, although the architecture and many ceramics clearly indicate Greek influence alongside local products and imports from the Black Sea (see Fig. 4.1). The area was affected by the wars between the Persian and Greek empires, the expansion of Macedonia, and the movements of the Scythians (Archibald 1998). Two phases of destruction, *circa* 300 B.C. and 278 B.C., have been linked by the excavators to movements of people from Central Europe. This is based on the findings of artifacts and weaponry of La Tène type in the top of

destruction layers, and the coincidence of the later date with that noted by Pausanias for the invasion of Greece by Celts (Bouzek 2005). While these findings might indicate the actual presence of people from Central Europe rather than imports of luxury items, there is no consensus as to whether they represent transient raids or the beginnings of more long term influence or occupation (Barford 1991). By analogy with other towns with evidence for commerce, industry and long distance contacts, we can speculate about who might have been active in the town. Besides local inhabitants and the people living and farming in the surrounding countryside, the town would have attracted merchants (both local and foreign), tradespeople, craftsmen (again, variously indigenous, immigrant or transient), boat crews, scribes and administrators, people who looked after warehousing, and secular as well as religious leaders amongst others. Some individuals or groups may have had military affinities or have been freelance mercenaries. Besides indigenous Thracians, we can hypothesise that people with Greek or Aegean origins might have been present, and possibly some from Central or Western Europe and elsewhere although the potential numbers of non-indigenous occupants are unknown.

The prolific finds of animal bones and ceramic sherds throughout all of the excavated areas indicates that consumption levels of both were quite high. We do not have human skeletal remains from the site so cannot test directly for the proportions of protein contributed to their diet by meat, but the circumstantial evidence suggests that meat was not a scarce commodity.

There is very little comparable faunal material from excavations of contemporaneous settlements in Bulgaria. Most sites investigated have been Thracian tombs, renowned for their opulent artifacts. The report (Beech 2007) on the substantial faunal assemblage from the considerably later Roman and Byzantine site at Nicopolis ad Istrum in northern Bulgaria does not mention any special deposits similar to those described here.

	Sample 1	(Sample 2)	Sample 2	Sample 3	comparison
Grid Square:	B23	A9	A9	D 19	B21
Context:	VI planum	[952]	[952] K/1960	Pit 19/02 [1021]	48, 58, 122, 146, 151
Context Type:	Horizontal Layer	Pit	Basal layer in pit [952]	Pit layer	Horizontal Layers
Cattle <i>Bos</i>	95 50%	35 12%	8 4%	70 43%	135 44%
Sheep/goat <i>Ovis/Capra</i>	57 30%	181 61%	127 69%	69 43%	123 40%
Pig <i>Sus</i>	22 12%	52 17%	28 15%	5 3%	33 11%
Dog <i>Canis</i>	12 7%	-	-	7 4%	9 3%
Horse <i>Equus</i>	2 1%	3? 1%	3? 2%	-	1 ~
Red Deer <i>Cervus</i>	-	2? 1%	2? 1%	-	2 + ?1 1%
Hare <i>Lepus</i>	-	4 1%	1 1%	1 1%	2 1%
Bird <i>Aves</i>	3 2%	21 7%	15 8%	11 7%	3 1%
Total identified	191	298	184	163	309
Others	49	448	209	214	685
Total recovered	240	746	393	377	994

Table 4.1. Fragments recovered by hand from three selected contexts at the Iron Age town of Pistiros, near Vetren, Bulgaria. Sample 1 is B23 planum VI, a dump of material against the inner face of the town wall. Sample 2 is the basal, ashy, deposit K/1960 in a clay-lined pit (A9 [952]) behind a substantial town house fronting the town's main street. Sample 3 is a layer [1021] in another clay-lined pit (D19/02) elsewhere in the town. Contexts 48, 58, 122, 146 and 151 in grid square B21 are general layers and are provided as examples of 'normal' refuse deposits.

The faunal material

This paper examines three selected groups of animal bones deposited in different parts of the town. They illustrate some of the main types of deposition seen at the site, and demonstrate that similar types of features may contain a range of deposits. The various teams excavating at the site all employ the same workforce and equipment, and the animal bones considered here were all recovered by hand during excavation. Sieved samples prove that the relative proportions of bones are biased against those from smaller species, immature individuals and small skeletal elements.

The analytical methodology utilises the Whodunnit model described by Stallibrass (2007a). This model considers questions often asked in detective stories: *What Happened?*, *Where?*, *When?*, and *How?* These four questions address the forensic-style reconstruction of past events. In addition, a detective has to consider *Who?* did it and *Why?* This paper fails to answer all six questions satisfactorily, but does raise many of the issues that concern archaeologists. In particular, it seeks to identify the variability in past activities and events which, in turn, may help to remind us of the complexities of human behaviour and the range of motives and beliefs that people may hold.

The first sample comes from a deposit immediately adjacent to the inside face of the town wall. The second

sample formed the basal layer in a lined pit at the back of a well-constructed building that fronted onto the town's main street. The third sample comes from another lined pit, from an area further away from the town center. This third area contained many pits, lined and unlined, but any associated structures have been destroyed by recent agricultural practices.

Results

Sample 1

A deposit adjacent to the inner face of the town wall was examined in detail because it contained an interesting metal artifact, possibly associated with a horse harness. The excavators wanted to know if the deposit (grid square B 23 planum VI) contained the remains of a horse as well.

In fact, only two of the 191 fragments identified to species level are from equids (see Table 4.1), and these are a very well worn incisor tooth and a phalanx. Both of these could be incidental finds, particularly when the other bones are considered. Most of the remains derive from the common domestic species of cattle, sheep and goats, and pigs. These show many signs of butchery and almost certainly derive from food preparation and consumption activities. Assemblages of this nature have been recovered from many different deposits throughout the excavated

areas (and some are included in Table 4.1 for comparison: see contexts from grid square B21). In addition, Sample 1 contained some dog bones and a few bird bones. The two aspects of note from a faunal perspective were the slightly higher than usual (50% rather than ~40%) proportion of cattle bones and the slightly higher than usual contribution (7% rather than ~2–3%) of dog bones. Rather than a deposit associated with the burial of a horse with its harness, this collection of animal remains appears to reflect dumping practices of unwanted refuse in a peripheral part of the settlement. Another area close to the inside of the town wall contained a concentration of metal-working slag, which may be a similar instance of waste disposal.

Some of the cattle metacarpals, metatarsals and mandibles, and some of the sheep metacarpals had been scorched in either their midshaft or in the diastema regions. One of the 241 fragments (a sheep/goat pelvis) has a mottled gray color, indicating contact with ashy matrix.

Summary Interpretation

At the moment, an application of the Whodunnit model suggests that refuse was deposited at the edge of the densely occupied area of the town, away from the main thoroughfare and behind the buildings. The motive was probably the desire to get rid of noxious waste from the densely occupied areas of dwellings and other structures. While sensibilities regarding smells and flies vary considerably, ethnographic studies indicate that items that impede movement are often cleared away, and refuse is also sometimes used to reinforce boundaries (Brück 1999). The people who took material and dumped it against the town wall probably lived inside the town. The scorched metapodials and mandibles *might* indicate a cooking method. These bones have sparse coverage of soft tissue and can become scorched when a whole carcass is roasted. The lack of gray staining or ash in the matrix suggests that spent cooking fuel and the remains of food consumption were deposited separately.

Sample 2

One of the buildings on the main street (Northern Building No. 1) had stone footings and a portico along the street frontage. It was a substantial structure in size and style, and the findings of a balance and weights as well as numerous coins might indicate that it was occupied by a merchant or utilised for commerce. At the back of the building were a few pits. One of these, a lined pit (grid square A 9 context [952]) was chosen for preliminary faunal analysis as it had produced some unusual metal and ceramic artifacts. The stratigraphic matrix of the pit indicates that deposition occurred in a series of events. The method of excavation precludes any direct observation of how bones were distributed spatially within the pit, apart from by depth.

The animal bones comprise a mixture of 'ordinary' refuse (butchered bones of domestic sheep, goats, cattle and pig similar to those in Sample 1) with items that may have been placed in the pit after specific activities. The basal layer contained much ash and the animal remains were

dominated by the butchered, defleshed and heated bones of several sheep. Apart from the mandibles and maxillae that could be refitted from two complete (but butchered) sheep heads there were no articulating joints although several of the long bones and pelvis appear to form pairs. All parts of the sheep/goat skeletons are represented in approximately equal numbers, except for the toes, carpals and tarsals, which are much scarcer. Due to the lack of sieving, the paucity of these small bones has to be treated as absence of evidence. The bones were definitely not deposited as articulated skeletons nor as complete carcasses, since many of the bones have been butchered or broken and very few are complete.

Most elements give estimated Minimum Numbers of Individuals (MNIs) of four or five, although the tibia and mandible both give slightly higher MNIs of seven each. At least one of these individuals was a goat, and at least five were sheep. The five skulls have horn cores that range from non-existent (naturally polled) through vestigial bumps to full horn cores. Clearly they were not selected to all look exactly the same. The pelvis derive from four sheep, one of which was female. One of the three males was so young that its acetabulum was still in the process of fusing when it died. Most of the long bones have unfused later-fusing epiphyses. The mandibles indicate that three animals were mature (all permanent teeth erupted and in moderate wear) but another three were juveniles whose third lower molars were still in the crypt or only half erupted. It is probable that these three individuals were from a single cohort, and were slaughtered in their second summer or autumn. Several of the sheep mandibles and metapodials and some of the pelvis have been locally scorched or heated at some point on their shafts. Sometimes the bones have broken through the scorched location (usually the diastema of the mandible), but some of the metapodials have only received slight heat alteration and are still complete. The evidence for heating takes two forms: a slight discoloration and a textural alteration. The affected bone surfaces tend to have multiple very fine linear cracks parallel to the long axis of the bone, sometimes associated with surface flaking. In addition, nearly all of the fragments in this pit (identified and unidentified) have a gray mottled surface color, presumably stained by the ashy matrix.

The relative frequencies of identified species (by fragments) in this pit are slightly unusual, mainly due to the contents in the basal layer (see Table 4.1). There are no dog bones at all, there are very few cattle bones (4%) and a high number of sheep/goat bones (69%).

Evidence from surface color

I am attempting to investigate whether or not elements went into the deposits still articulated by examining the colors of the external surfaces of each bone fragment. Many of the deposits at the site, particularly (but not exclusively) in some of the pits, contain ashy material and many of the bones' surfaces have a mottled gray coloration. It is very noticeable that some articular surfaces, in contrast, have a yellow color, even though the shafts of the bones

are grayish. My interpretation of this phenomenon is that the yellow parts were protected from direct contact with the ashy deposits when they first went into the sediment. Although there are differences in surface texture that might relate to the observed variations in color (the articular surfaces are denser and smoother than the outer surfaces of the shafts and may be more resistant to uptake of staining), this remains to be tested. That idea is, however, refuted by the evidence provided by unfused epiphyses. When re-fitted, the outer surfaces of the metaphyses and epiphyses are uniformly gray, but the porous fusion surfaces themselves are yellow. Whether the yellow-colored articulations were covered simply by cartilage or whether they were physically still joined to their adjacent skeletal element cannot be ascertained, but the evidence does suggest that some bones went into the ashy matrixes still relatively fresh (*i.e.* the cartilage or articulations had not been destroyed) although their shafts had been defleshed.

Summary Interpretation

The material from the base of pit [952] at the back of the imposing building in the town center seems to contain two types of faunal material: apparently normal domestic waste and remains of butchered carcasses. The similar surface staining from the ashy matrix suggests (but does not prove) that they may have been deposited simultaneously. An understanding of exactly how the material entered the pit (placed, contained, thrown in?) requires a change to more detailed excavation methods using hand tools and three-dimensional recording with careful attention to recovery methods, *i.e.* sieving of all material.

While these aspects address the forensic questions of the Whodunnit model (*What? Where? When? and How?*), we still do not know the answers to the anthropological questions of *Who?* and *Why?* Much further work is required examining the associated finds in the pit itself, including the ceramics, the metalwork and the 'ordinary' bone refuse found at the same level as the sheep carcass remains. This basal deposit may contain the remains from a particular consumption event, when several sheep (and one goat) were slaughtered, cooked and butchered. Presumably several people would have taken part in this activity, as a handful of sheep provides a considerable quantity of fresh meat. These people might have come into the town especially to take part in the activity or, conversely, may have been residents. The scorching of the metapodials and mandibles seems to follow a common pattern for the town and suggests that the participants were familiar with local practices. The ash in the matrix may be waste fuel from the cooking fire(s). If that was the case, it appears that people were concerned with clearing up the leftover bones and ash and deliberately placed them together in the base of the lined pit, together with remains from previous activities.

Sample 3

The third sample is layer [1021] from another lined pit (grid square D19 pit 19/02) further away from the main

street in an area of several lined and unlined pits. Like the pit in Sample 2, this contained a mixture of material that looks like ordinary domestic refuse and selected body parts that rearticulate, including a sheep's head (butchered in a similar manner to those in Sample 2) and three cattle lower limbs (possibly from a single animal: see Fig. 4.2). The two hind feet are very similar in size and conformation, and the front foot is compatible. All of the bones are fully fused. One hind foot is complete from the distal tibia downwards, the other from the naviculo-cuboid and the right front foot from the metacarpal down. In each instance there is a single phalange missing (possibly missed during recovery). Each metapodial has been scorched quite severely on its midshaft and broken through the scorched location (see Fig. 4.3). Fine knife cutmarks on the metapodials indicate that the hide(s) had been removed from the carcass(es). Whether the lower legs are waste from butchery or hide working, refuse from a major meal, or a sacrificial deposit, it is curious that there are not four 'matching' legs. Although there are other cattle bone fragments in this layer, none of them derive from a lower leg and it is not possible to suggest whether or not any of them might have derived from the same individual. The butchered cattle skull and mandible fragments cannot be assumed to derive from the same individual(s). The skull had thin horns and might derive from a castrated male while the mandibles are from a mature adult with well worn teeth. They possibly form a pair, and both have been scorched beneath the diastema/anterior cheek teeth. The species ratios are typical for the site except that there are rather few pig bones (3% see Table 4.1).

Summary Interpretation

This pit appears to have similar contents to the pit in Sample 2 in that it combines 'ordinary' (*i.e.* common types of domestic waste) with 'extraordinary' parts of an identifiable animal. But these parts are not the meaty parts. The contrast between 'several butchered (and possibly cooked and eaten) whole medium-sized animals' (Sample 2) and 'the skinned non-meaty parts of one single large animal' (Sample 3) seems distinctive enough to indicate different circumstances or intentions, although sheep heads were found in both. In addition, the absence of ash or gray staining on the cattle bones reinforces the impression that they were not treated in the same way as the sheep carcasses. Although it is certainly possible that a similar act of cooking and consumption did take place with the rest of the cattle carcass(es), the remains of this activity must have been deposited (or placed) elsewhere. The scorching of the mandibles and metapodials is a pattern observed in all three samples and the same people (or sub-sets of one cultural group) may have been involved with the activities leading to both pit deposits (not necessarily at the same time). The *Who?* may have been the same, but the *Why?* appears to have differed.

Discussion

This paper is very preliminary. Most of the animal bones are



Figure 4.2. Re-articulated cattle lower leg bones (possibly from one single individual) from context [1021] in an Iron Age pit (Grid square D19 pit 19/02) at Pistiros, Bulgaria. Note how all three metapodials have been scorched midshaft. The arrows indicate breaks through the scorched areas. The lack of one phalange from each foot is possibly due to recovery methods.

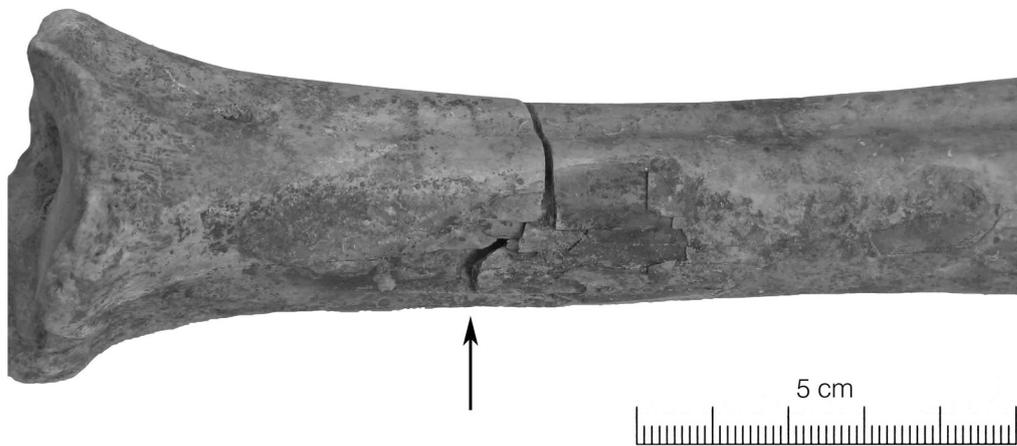


Figure 4.3. Scorched cattle metatarsal from Iron Age pit at Pistiros, Bulgaria. Note discoloration and flaky, brittle texture of affected area of bone. Arrow indicates break through bone in scorched area.

unstudied and the records need to be united in a common database with the other finds and stratigraphic data. But analysis and interpretation are iterative processes and this is a useful stage to pause and review the aims, objectives, and methodologies of the project. The basic premise of this paper is that the animal bones from this Iron Age town in Bulgaria should reflect a complexity of activities and that this will only be apparent if data are analysed at the context level rather than by period group.

The species recovered are unremarkable, although without assemblages from comparable settlement sites the species ratios cannot be evaluated at the site level (are equal proportions of cattle and sheep/goat bones to be expected?). At the context level, it is clear that the lined pits are receiving atypical proportions of species (*i. e.* some of the bones that go into the lined pits are not random samples of bones deposited at the site but are selected). This selection is apparent in individual layers as well as in individual pits. Further work is required to compare the animal bones with ceramics and metalwork to look for any patterning, *e.g.* are sheep/goats associated with pots, and cattle bones with metalwork?

The pits also received atypical groups of bones. Some of the bones in the pits (but, importantly, not all) appear to have been placed there shortly after a particular activity, whereas the usual process of deposition entails the discard, disposal or placement of apparently random bits and pieces that have become dissociated from their anatomical neighbors. Presumably this dissociation occurs due to time lapses between activity and final deposition, during which other processes intervene. The consideration of surface color, texture and butchery marks has been useful in demonstrating that deposition was not always immediate, even when parts of the same carcasses were placed in a pit. This implies that a conscious effort was made to gather up related parts so that they could be 'recombined' in the deposit, and this impression is reinforced by the presence of spent fuel that could have been associated with cooking fires in Sample 2.

Even though the material in the basal deposit of the Sample 2 pit appears to be the remains of a large meat consumption event, the remains of which needed to be kept together for some reason, the articulating cattle bones in Sample 3 have no direct indication of meat consumption. Rather, they are reminiscent of primary butchery waste since they comprise elements with little or no meat cover. But if these lower legs were removed prior to food preparation and consumption, why are the metapodials heavily scorched on their midshafts? Were the bones from the rest of the carcass placed somewhere else? Clearly, while it is very useful to analyze sample contexts to obtain an initial impression of an assemblage and to prompt hypotheses, these can only be tested by further work to see if features complement each other, form repeated patterns, or contain random contents.

The lined pits appear to be a particular type of receptacle for animal remains. In an initial scan of approximately 25–30% of all of the animal bones that had been excavated

from the site by 2000 (Archibald 2002), it was noted that the unlined pits and general layers did not contain any refitting skeletal elements or partial skeletons. The Associated Bone Groups (ABGs) were confined to the lined pits. It is clear that other finds in these pits are also unusual. Some have more metal artifacts in them than is usual in horizontal deposits, including broken metalwork that may have been deliberately placed there, as found at several Bronze Age and Iron Age sites throughout Europe (Benecke 2006). Others contain (nearly) complete ceramic vessels of unusual types. A thorough consideration of all of the finds (regardless of whether organic or inorganic, artifactual or ecofactual) is required in order to investigate potential associations. The slight bias towards the recovery of bones of birds (mainly domestic fowl, *Gallus domesticus*) and hare (*Lepus* sp.) in the lined pits needs to be checked by systematic sieving of all deposits.

One aspect of the treatment of the animal bones that is constant in all three samples and may be typical of the site is the heating (sometimes to a high temperature that leaves scorch marks) of the midshaft regions of metapodials and mandibles of cattle and sheep/goat. Is this typical for Thrace, and how does it compare with practices common in the area to the south of Pistiros, *i.e.* in the Hellenistic region of the Aegean? Here, there was a well-documented practice of body part deposition in religious ceremonies, but the parts and the practice were distinctly different (Sherratt, 1990). In Olympian rites, the part of a sacrificed animal that was given to the gods was a thigh bone (usually the right femur) wrapped in fat, and the whole bundle was burned. Archaeological examples or variations of this practice have been found in some Greek and Mycenaean sites and Greek colonies from the Bronze to Iron Ages (Benecke 2006; Forstenpointner 2003; Halstead and Jones 1992). At Pistiros, the hearth-altars were kept clean and they were reused, with several layers of burned clay surfaces having accumulated on top of each other. They appear to be an indigenous development in Thrace. We do not know how they were used. Nor can we directly associate any animal bones with their uses, but it is possible that the pits, (possibly only the lined pits), were designated receptacles for material cleared away after an event, prior to the next surface being applied.

The deposition of rearticulating lower limbs of cattle (with or without head bones) is also unusual for Greece, but is common in Western and Central Europe. Indeed, when the author first saw them in the initial scan in 2000 she was struck by their similarity to material found in Britain (Stallibrass 1988). Does this indicate any cultural or ethnic links, or is it simply a coincidence? Džino (2008, 59) argues that complex movements of people, customs and artifacts in Southeastern Europe led to hybrid identities. He suggests that, rather than indicating 'ethnic elements', new practices or artifacts could indicate local people expressing their identities in different ways. Further discussions of how to tell *Who?* undertook various activities involving the deposition of animal bones at Pistiros are required but are beyond the scope of this paper.

Why? people undertook these practices also requires detailed consideration. Here are some preliminary thoughts. Motives can be simple and utilitarian. For instance, people are often motivated to take large amounts of decomposing rubbish away from their homes, in order to keep it out of the way and to distance unpleasant smells and animal pests from their dwellings. But it is simultaneously a good way of defining boundaries and liminal areas, or ‘marking territories’, such that a single practice (rubbish dumping) can have functional utilitarian motives combined with social and conceptual implications. Other motives can be much more complex or subtle, and include conscious motives and habitual ‘sub-conscious’ motives that are difficult to confirm with empirical data. Conscious motives might be an intention to keep supernatural beings well-disposed towards the actors by presenting them with gifts. It is possible that the manner in which gifts are deposited can become a ritual or habit in which the original intention of the action becomes less obvious than the direct effects of the habit. Routine habits can reinforce social, cultural or ethnic cohesion (Bourdieu 1977).

The deposition of articulating or associated body parts (ABGs) of sheep and cattle in lined pits at Pistiros may simply be the disposal of noxious butchery or consumption waste, but it probably had much greater significance. The deposition of ABGs is a common occurrence at Iron Age sites in Western and Central Europe and does appear to be structured in terms of what is deposited, how it is treated, and the type of context in which it is deposited. The deposition of ceramics and metalwork in the lined pits is extremely similar to that of animal remains. All three types of material include complete or near complete items (ceramic vessels, metal artifacts, animal carcasses). In the case of the ceramics and the animals, the similarities are even more marked: the assemblages combine ‘special’ items (ABGs and whole vessels) with ‘ordinary’ material (sherds and broken bones). In both cases, the ‘ordinary’ material does not appear to be either incidental or residual material incorporated into the backfill of the pits. Clearly, we must distinguish between casual discard, deliberate disposal, and careful placing. Sometimes the manner of placement is important (keeping associated items together: ABGs), sometimes it is the locus of placement (the limits of the town, a lined pit) that has significance. In Sample 1, it seems that the material placed and the manner of its deposition were not special, but the location was. For the two lined pits in Samples 2 and 3, the material *and* how it was deposited *and* where it was placed were all important.

These deposits can be regarded as parts of *chaine operatoires*, which involved considerable planning. They required access to resources (possibly involving local production), through various activities involving the slaughter, butchery, skinning, preparation, cooking and consumption of large quantities of meat, the collection of material produced by these activities (animal bones, ceramics, sometimes the spent fuel ash: often combining ‘immediate’ refuse with material created by previous

activities), and the deliberate placement of these materials in specific locations (lined pits, especially basal deposits). Although the placement of the material in the pits may have provided a sense of closure, the knowledge that they remained placed there would have been long-term. Unlike the unlined pits, these lined pits provided possibilities for later access, either to revisit the basal deposit, or to add subsequent deposits. Future work aims to ‘unpick’ a complete sequence of a lined pit.

Conclusion

This paper describes a preliminary aspect of the analysis of over one metric ton of animal bone from a complex Iron Age site that demonstrates multiple lines of contact across a wide geographical area. Trying to investigate specific questions such as ‘*Who?* deposited these groups of animal bones?’ and ‘*Why?* did people do this?’ has demonstrated that the excavation and analytical methods are flawed or incomplete. There is still time to improve the excavation techniques, in particular to ensure that small bones are recovered and that any spatial layout of bones (*e.g.*, body parts) can be observed *in situ*. The post-excavation techniques employed have identified some useful practices, particularly that of looking at individual contexts and deposits. This slows down the analyses by requiring them to be undertaken and reviewed in stages, but it gives far more detail and understanding than any phase groups would have produced. In addition, the use of surface color has been demonstrated to aid identification of defleshed but still fresh bone deposits. The other factor highlighted as being extremely important is the integration of all archaeological evidence. The potentially significant associations of particular species, metal artifacts, animal body parts and ceramics demands an integrated database plus iterative discussions amongst the specialists and excavators. These preliminary results indicate that animal bones do have the potential to be used in investigations of who was active at a site. The articulating cattle legs may suggest links between some of the people at Pistiros on the Plain of Thrace at the far eastern edge of Europe with people who lived much further west. Considerable amounts of further work are required to see if these people were a minority population, new arrivals, or the long term ‘locals’. The town may have been a thriving cosmopolitan port, and the animal bones have a part to play in investigations of just how cosmopolitan it may have been.

Acknowledgements

Jeff Speakman drew the map and edited the author’s original photographs. I am indebted to the international teams excavating at Pistiros led by Alexey Gotzev (Sample 1), Gavrail Lazov (Sample 2) and Zofia Archibald (Sample 3) who invited and encouraged me to work on their faunal material, and to Valentina Taneva and the Septemvri Museum team for wonderful support in the field. Laszlo Bartosiewicz, Susan deFrance, Justin Lev-Tov and an

anonymous reviewer made very helpful comments on earlier drafts. Thanks to all.

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