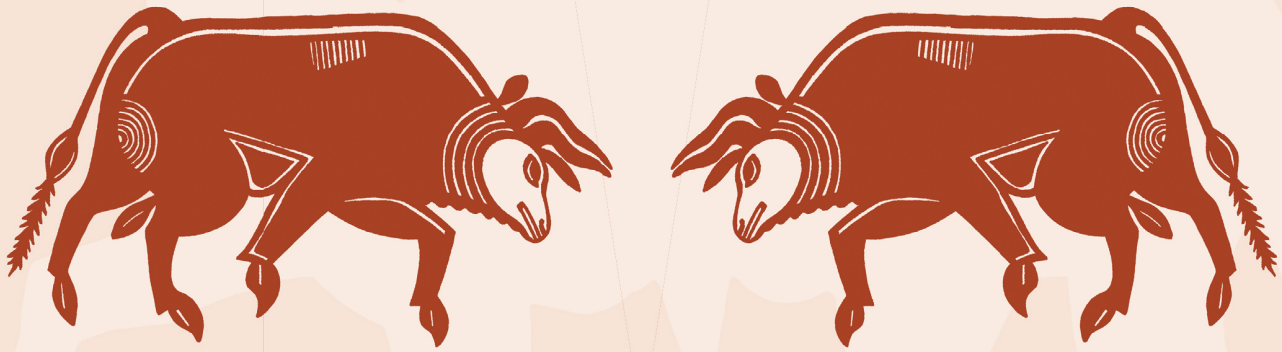
Archaeobiology 3

ARCHAEOZOOLOGY OF SOUTHWEST ASIA AND ADJACENT AREAS XIII



Proceedings of the Thirteenth International Symposium, University of Cyprus, Nicosia, Cyprus, June 7–10, 2017

edited by

Julie Daujat, Angelos Hadjikoumis, Rémi Berthon, Jwana Chahoud, Vasiliki Kassianidou, and Jean-Denis Vigne

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Group photo of the 13th ASWA[AA] meeting June 8th 2017
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CONTENTS

Part 2: Subsistence Economies of Early and Late Complex Societies in Southwest Asia and Adjacent Areas

Part 3: Beyond Subsistence: Animals in the Symbolic World of Southwest Asia and Adjacent Areas

FOREWORD

The 13th ASWA conference was hosted by the University of Cyprus, one of the youngest of Europe's universities. In 2019, it was only thirty years since its foundation. Nevertheless, this is a thriving academic institution, which currently consists of eight faculties, twenty-two departments, and eleven research units.

In 1991, and just two years after the university's foundation, the Archaeological Research Unit (ARU) was founded by decree from the Government of the Republic of Cyprus, following the issuance of the dependent legislation by the House of Representatives. The decision to establish the ARU was based on the recommendation of the Interim Steering Committee of the University of Cyprus, which stated the following:

1. Cyprus is offered for primary research in the field of archaeology thanks to its distinctive cultural signature and history, as well as due to the fact that Cypriot archaeology and archaeological research on the island already has a distinguished tradition and international reputation;

2. The subsequent international recognition of the importance of archaeological research in Cyprus should comprise one of the first incentives for choosing the University of Cyprus as a center for postgraduate studies, and will pave the way for the exchange of students and academics between the University of Cyprus and academic institutions overseas.

The faculty members of the ARU, who are also part of the Department of History and Archaeology academic staff, have contributed immensely over the past 28 years to the achievement of the aforementioned objectives for the study and promotion of Cypriot cultural heritage through their research, their teaching, and the practical training they have been providing to students at undergraduate and postgraduate levels. The active study of other regions of the Mediterranean world have not been overlooked either, as members of the ARU academic staff have been carrying out excavations and research projects in Greece, Turkey, and France.

The members of the ARU are actively carrying out research in Pre- and Protohistoric Archaeology, Classical and Byzantine Archaeology but also Archaeometry and Environmental Archaeology, Maritime Archaeology, and Western Art. In the course of the past 28 years, the ARU has laid very stable foundations in all aforementioned specialisations of the archaeological discipline, none of which existed at academic level in Cyprus before the unit's establishment. Through their teaching at undergraduate and postgraduate levels, all members of the ARU academic staff have been contributing to the formation of a new generation of Cypriot archaeologists, equipped with all the necessary knowledge and practical experience needed to excel in this scientific field.

Over the years, the ARU has been very active in organizing international conferences and workshops. The ARU has organized over 50 international conferences, while members of the academic staff have published the proceedings of over 20 scientific meetings held at the ARU.

Thus, when Jean-Denis Vigne came to my office several years ago with the suggestion to co-organize the 13th Archaeozoology of Southwest Asia and Adjacent Areas conference I gladly accepted. The meeting in Nicosia brought together colleagues from all over the world and offered a venue where new results from the field or the laboratory could be presented and discussed. The publication of the conference proceedings enables colleagues who were unable to attend the conference to read about the latest developments in the archaeozoology of this culturally important region.

I would like to close by thanking all the members of the 13th ASWA organizing committee for all the work they have put into bringing so many scholars to Cyprus, many of them for the first time. I would also like to thank the co-editors of this volume for all the work they have put into the publication of the proceedings.

Professor Vasiliki Kassianidou
Director of the Archaeological Research Unit,
University of Cyprus
Nicosia, August 2019

EDITORS' PREFACE

Due to their location at the meeting point of the three Old World's continents—Africa, Asia, and Europe—Southwest Asia and its adjacent areas played a pivotal role in the history of humanity. They received successive waves of our species—*Homo sapiens*—out of Africa. Different processes in several areas of this large region brought about the transition to the Neolithic, and later on the urban revolution, the emergence of empires bringing with them important subsequent religious, cultural, social, and political consequences. Southwest Asia also played a major role in the interactions between East (Asia) and West (Europe) during the last two millennia. The unique importance of Southwest Asia in the history of humanity is strengthened by the, also related to its location, fact that this area is a hotspot of biodiversity, especially in mammals, which were—as everywhere in the world—tightly associated to the history of civilizations in a diversity of roles: game, providers of meat and milk, traded raw material, symbol of prestige and wealth, pets, etc.

Everywhere in the world, the biological and cultural interactions between humans and animals often remain under-evaluated in their heuristic value for understanding complex social and biological interactions and trajectories. This is why, almost half a century ago, archaeologists who were carrying out research and reflecting on such themes founded a very active nonprofit world organization named the International Council for Archaeozoology (ICAZ). This is also why the ICAZ working group "Archaeozoology of Southwest Asia and Adjacent Areas" (ASWA[AA]) was one of the first ones created within ICAZ, constituting one of the largest and most active of ICAZ's working groups.

The ASWA[AA] was formed during the 1990 ICAZ International Conference in Washington, D.C. Its purpose is to promote communication between researchers working on archaeological faunal remains from sites in western Asia and adjacent areas (e.g., Northeast Africa, Eastern Europe, Central Asia, and South Asia). It carries out its mandate mainly through the sponsoring of biennial international conferences. Since 1998, these meetings have alternated in being hosted in Europe or in Southwest Asia: Paris (1998), Amman (2000), London (2002), Ankara (2004), Lyon (2006), Al Ain (2008), Brussels (2011), Haifa (2013), Groningen (2015).

Ongoing armed conflicts and political tensions in several countries of Southwest Asia made it difficult to locate a safe and convenient place that would enable the organizing the 13th ASWA[AA] meeting in within that region. Although Cyprus is currently a member of the European Union, in (pre-)history Cyprus was embedded in the eastern Mediterranean "world." Because of its location, Cyprus was indeed at the confluence of African, Levantine, Anatolian, and Greek cultural streams and, as is common for islands, recombined them in different but always original ways all along its history. Archaeozoology recently provided one of the most convincing illustrations of the tight connection between Cyprus and Southwest Asia, demonstrating that the earliest domesticated mammals, especially cats, pigs, cattle, sheep, and goats, were introduced to the island very shortly after their first incipient domestication on the near continent, that is, during the ninth millennium BC. For all these reasons, Cyprus represented an ideal place to host the 13th ASWA[AA] conference.

Despite the illegal military occupation of part of its territory by a foreign country, the option of hosting the meeting in Cyprus was enthusiastically embraced by all members of the working group, especially because it is open to all nationalities and maintains good diplomatic relationships with a large majority of countries in Southwest Asia. These facts contributed towards the 13th ASWA[AA] meeting in Cyprus (June 7–9, 2017) becoming one of the best-attended ASWA[AA] meetings. It brought together 80 scientists coming from 25 different countries: from Southwest Asia (6 countries), Europe (14 countries), North America (2 countries), and Japan.

They presented their results in 36 oral and 32 poster presentations. They debated the long-term interactions between humans and biodiversity, about the beginning of animal domestication and husbandry, the strategies of animal exploitation from the Paleolithic to modern times, and the symbolic and funeral use of animals through time. They also greatly enjoyed the numerous social events organized, in-

cluding a fantastic Cypriot mezze dinner, enhanced by a local folk-music band, and a nice excursion to the archaeological sites of Amathous, Kourion, and Khirokitia, and to the museums of Nicosia and Larnaca, which provided ample opportunities for scientific exchanges in a friendly atmosphere.

The hosting of the conference at the new campus of the University of Cyprus was another major reason to the meeting's success. This campus was a convenient and pleasant venue for such a conference, and the strong support of the University of Cyprus, as well as its valuable experience for the organization of such meetings were deeply appreciated by both the scientific organizers and the delegates. Several other partners contributed to the organization: the French archaeological mission "Neolithisation—Klimonas," which is itself strongly supported by the French School at Athens, the Cyprus Department of Antiquities, the French Institute of Cyprus, the French National Center for Scientific Research (Centre National de la Recherche Scientifique [CNRS]), and the French National Museum of Natural History (Muséum national d'Histoire naturelle [MNHN]).

The present volume brings together the texts of 18 of the 68 presentations of the meeting in Nicosia. The editorial board collected the papers and organized their review and editing. We are very grateful to Sarah Kansa (and Open Context), Justin Lev Tov, and Lockwood Press for their constant support in bringing this volume to fruition.

Julie Daujat
Angelos Hadjikoumis
Rémi Berthon, Jwana Chahoud
Vasiliki Kassianidou
Jean-Denis Vigne

2.2 | Animal Bones from the 2009–2012 Excavations at the Early Bronze Age Site of Shengavit, Yerevan, Armenia

A First Look

Pam J. Crabtree* and Jennifer Piro†

Abstract

Shengavit is a well-known archaeological site in Armenia that has been a subject of archaeological excavation since the 1930s. This paper focuses on the animal bone remains recovered from the excavations that took place at Shengavit between 2009 and 2012 when H. Simonyan served as excavation director and Prof. M. Rothman served as field director. The excavations concentrated on the Early Bronze Age levels, dated to between 2900 and 2450 BC, that are attributed to the Kura-Araxes II culture. Our paper focuses on the species identified from the most recent excavations at the site and the evidence for the economic utilization of the domestic mammals. In addition, we address the thorny problem of the identification of the equid material from the site and the question of the presence or absence of domestic horse remains.

Keywords

Armenia, Shengavit, Early Bronze Age, Kura-Araxes, South Caucasus, domestic mammals, equids

Introduction

Shengavit is an Early Bronze Age (EBA) site located on the southwestern outskirts of Yerevan, Armenia, that has a long history of excavation dating back to the 1930s (Figure 2.2.1A). The site is located on a hill southeast of the modern Lake Yerevan, which was created in the 1960s. The site covers about 6 ha, although a portion of the settlement was destroyed by the construction of a Soviet-era hospital ward. A small museum is located at the apex of the site and some of the settlement was previously covered with illegal orchards, but these have since been removed. About 15% of the site has been excavated.

The earliest excavations were carried out in the late 1930s by E. Bayburdian and additional excavations were conducted by S. A. Sardarian in the 1950s. Sardarian's work was poorly documented. Some of the inaccurate Soviet-era reconstructions of the structures at the site are shown in Figure 2.2.1B. Modern excavations began in 2000 under the direction of Hakob Simonyan, who served as the field director of the project from 2000 to 2008. Simonyan was joined by our colleague, Prof. Mitchell Rothman of Widener University, who served as the field director and co-director of the project for the final three seasons in 2009, 2010, and 2012. Rothman's research was sponsored by the National Geographic Society, the Shelby White and Leon Levy Program for Archaeological Publications (Harvard University), and the Ministry of Culture of the Republic of Armenia.

The zooarchaeological history of the site is also complex. The find material from the 1965–1980 excavations carried out by Sardarian was examined by our colleague, Dr. Nina Manaseryan. Manaseryan also identified the animal remains excavated between 2003 and 2007 (Manaseryan 2018). When Professor Rothman joined the project, he invited one of

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us (JP) to join the project since she had extensive experience in the analysis of Bronze Age material from eastern Anatolia. Piro worked on some of the material from the 2009 excavation season, but she left the project to take a position as an academic administrator at Columbia University. Crabtree joined the project in 2012. During the 2012 field season and the subsequent 2013 lab season she identified the remaining material from the 2009 season, as well as the material that was excavated in the 2010 and 2012 field seasons. This article is based primarily on Crabtree's and Piro's research, although the earlier studies carried out by Uerpmann and Uerpmann and Manaseryan will be included in the final site publication (Simonyan and Rothman forthcoming).

In terms of the archaeological background, Shengavit is an EBA site dating to the third millennium between 2900 and 2450 BC. The dating is based on a combination of a series of radiocarbon dates and ceramic relative chronology. The calibrated dates from good archaeological contexts have been published in Simonyan and Rothman (2015:11, Table 1). The site was used irregularly in the early Middle Bronze Age (MBA) until about 2200 BC, and it is associated with the EBA Kura-Araxes II culture. The site of Shengavit, which at 6 ha is large for its place and time, is surrounded by a substantial cyclopean wall. Modern excavations have revealed round and rectangular structures that seem to form compounds. In addition, a series of ritual installations with elaborate hearths was discovered in the 2010 and 2012 excavation seasons. The site also produced large silos that were used for grain storage. Artifacts recovered from the modern excavations at Shengavit provide evidence for metal working and flint and obsidian knapping. In addition, these excavations have yielded a large and well-collected faunal assemblage that can shed light on animal husbandry practices and hunting patterns at this important EBA site.

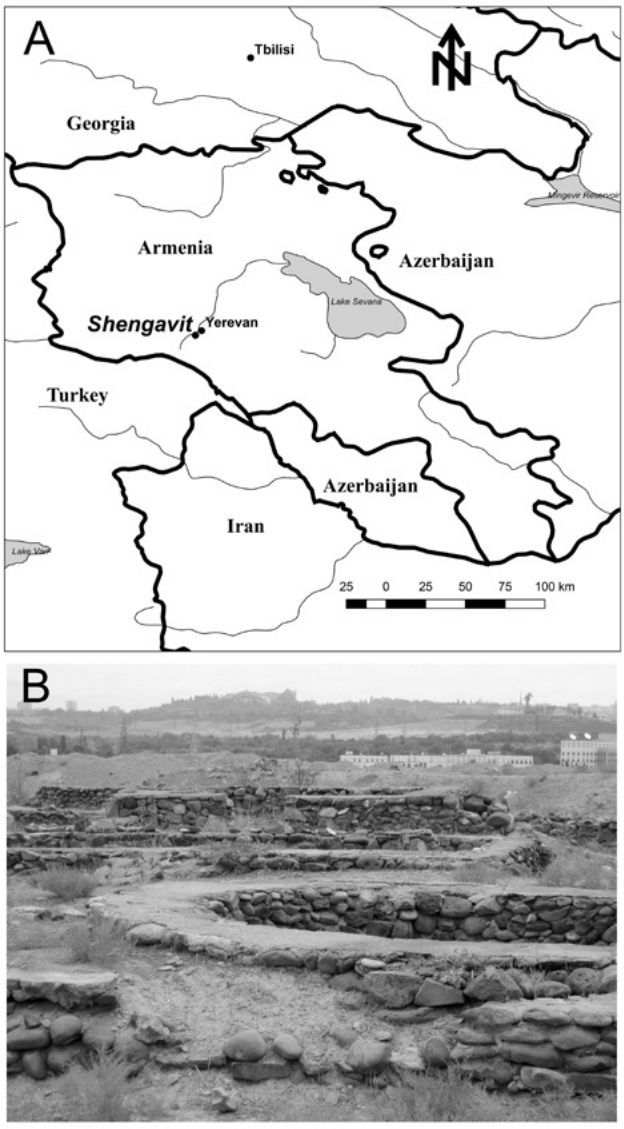

Figure 2.2.1. Shengavit, Armenia. A. Map of Armenia showing the location of Shengavit; B. Soviet-era reconstructions of some of the structures at Shengavit. (Photograph by P. Crabtree.)

The Faunal Remains

We will begin with the animal bones identified by previous analysts. Manaseryan examined the materials that were recovered from the excavations carried out between 1965 and 1980 and the bones excavated during the more recent excavations between 2003 and 2007. Since the earlier faunal materials were selectively collected, they should be used to estimate species ratios with caution, but they can give an indication of the range of species present in the assemblages from these early excavations. The domestic animals identified by Manaseryan include cattle (*Bos taurus*), sheep (*Ovis aries*), goat (*Capra hircus*), pig (*Sus scrofa domesticus*), dog (*Canis familiaris*), donkey (*Equus asinus*), and horse (*Equus caballus*). Her list of wild species includes red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*), fox (*Vulpes vulpes*), wolf (*Canis lupus*), beaver (*Castor fiber*), stone marten (*Martes foina*), weasel (*Mustela nivalis*), marbled polecat (*Vormela peregusna*), badger

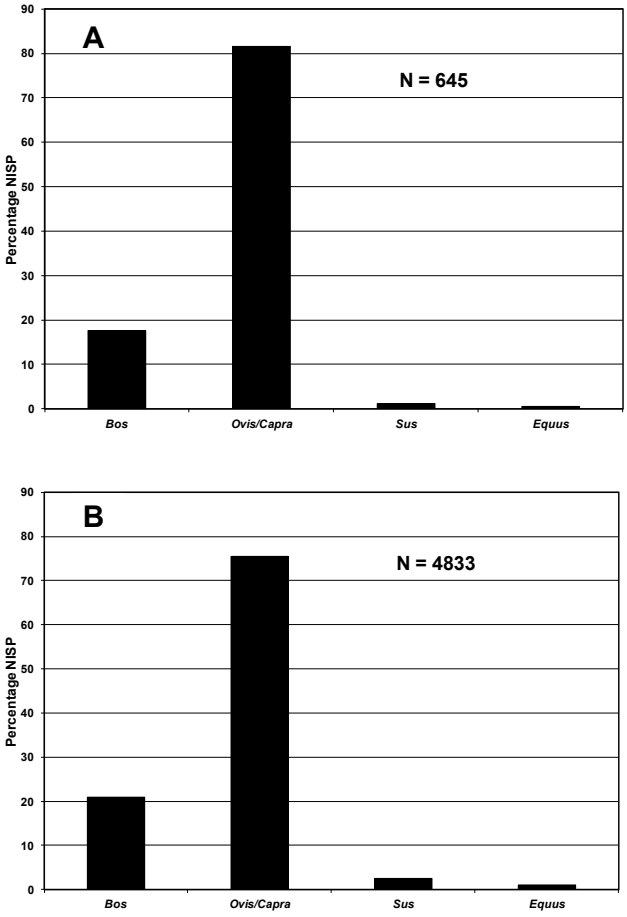

Figure 2.2.2. (A) Species ratios for large domestic mammals, including equids, identified by Piro; (B) Species ratios for large domestic mammals, plus equids, identified by Crabtree.

(*Meles meles*), onager (*Equus hemionus*), wild sheep (*Ovis orientalis*), wild goat (*Capra aegagrus*), goitered gazelle (*Gazella subgutturosa*), and wild boar (*Sus scrofa*). Manaseryan's (2018) data indicate that her assemblages were dominated by the remains of caprines in terms of Number of Identified Specimens (NISP, see Lyman 2008), followed by domestic cattle, with smaller numbers of pigs and equids.

Piro examined a total of 2,052 animal bones and fragments recovered during the 2009 excavation. The domestic species she identified included cattle, sheep, goat, pig, donkey, and dog. The wild species included red deer, roe deer, brown hare (*Lepus europaeus*), fish, and bird. The species ratios—based on NISP—for the large domestic animals including the equids are shown in Figure 2.2.2A. Caprines are best represented based on NISP, followed by cattle. Cattle, however, would have provided the bulk of the edible meat based on their larger size. Pigs and equids played only a minor role in the Shengavit economy. Identified sheep bones outnumbered goat remains by a ratio of nearly four to one.

In 2012 and 2013, Crabtree examined a total of 35,647 animal bones and fragments, a majority of which were unidentified fragments of mammal bone. The identified material included the remains of domestic cattle, sheep, goats, pigs, and dogs, in addition to 47 equid remains. The wild animal remains included the bones of red deer, roe deer, fox, hare, badger, otter (*Lutra lutra*), and four bones of brown bear (*Ursus arctos*), plus small numbers of birds and fish. Measurement data indicate that the Shengavit assemblage also includes small numbers of wild cattle (*Bos primigenius*) and wild sheep (*Ovis orientalis*) bones. There is no clear evidence for wild boar but only a very few of the pig bones were measurable. Species ratios for the domestic mammals, plus the equid remains, are shown in Figure 2.2.2B. In general, Crabtree's results mirror Piro's quite closely, although Crabtree identified a slightly larger proportion of cattle and fewer sheep and goats. The other difference is that the sheep-to-goat ratio for Crabtree's material was closer to 2:1.

In terms of settlement patterns, Shengavit was a relatively large settlement, although it is more like a small town than a city. It was surrounded by two smaller village sites that lay just outside the settlement walls, although these were destroyed by modern activities before they could be properly surface-collected. In theory, Shengavit seems to be a small center that was part of a two-tiered settlement system in which the sites like Shengavit represent the upper tier, while the smaller agricultural villages represent the lower tier. The importance of Shengavit lies in its defenses and its easy access to large salt deposits. We were, therefore, interested in determining whether the residents of Shengavit were raising their own livestock or whether they were obtaining animals from the surrounding villages and pastoral camps. Since sheep and goats made up the majority of the animals consumed at Shengavit, we examine the age profiles for the caprines using dental eruption and wear. We recorded the state of dental eruption or wear for each tooth following Grant (1982), and we grouped the mandibles into age classes following Payne (1973). Crabtree's analysis is based on 108 sheep, goat, and indeterminate sheep/goat mandibles that were complete enough to be as-

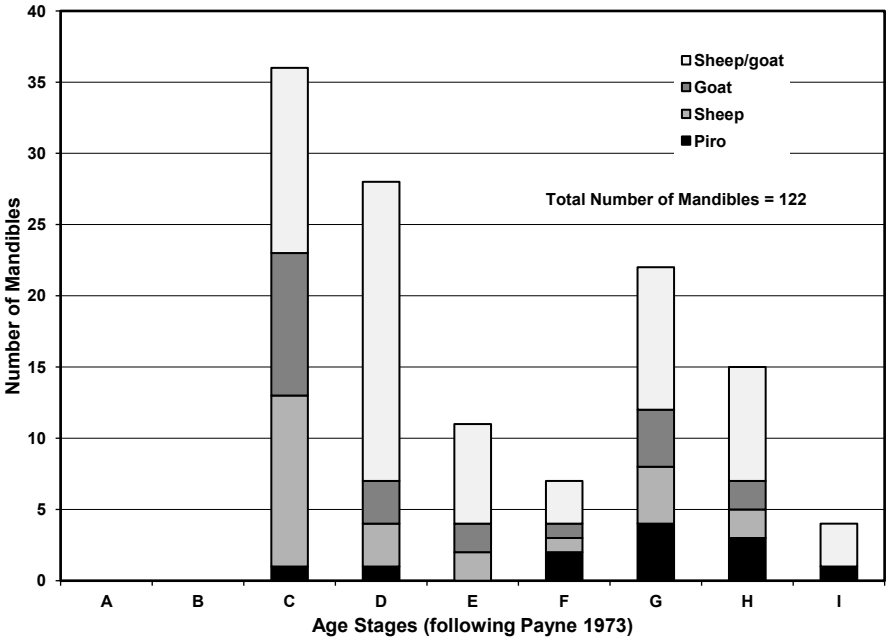

Figure 2.2.3. Kill-patterns for sheep and goats recovered from the 2009–2012 excavations at Shengavit.

Figure 2.2.4. Ritual hearth and installation from "Operation M5." (Photograph by M. Rothman.)

signed to one of the classes defined by Payne. Piro identified and analyzed an additional 14 sheep/goat mandibles which have been added to Crabtree's data (Figure 2.2.3). No very young animals—under six months of age—were recovered from the 2009–2012 excavations at Shengavit. The assemblage includes a substantial number of animals culled in the later first and second years of life and many older animals that may have been kept primarily for secondary products such as wool, hair, and dairying. These data, and particularly the total absence of very young animals, suggest that many of the animals that were consumed at Shengavit may have been supplied by pastoral specialists and/or surrounding farms and villages. If caprines were kept on the site on a year-round basis, we would expect to see some neonatal or perinatal mortalities. This finding, however, need not imply pastoral nomadism. It may simply imply seasonal transhumance or trade between Shengavit and the surrounding farming communities.

One of the most striking features of the Shengavit excavations is the presence of a series of ritual installations with elaborate hearths. We wanted to determine whether the animal bones associated with these installations differed in any significant way from the animal bones that were recovered from other areas within the site. We took a close look at the faunal remains identified from the ritual installa-

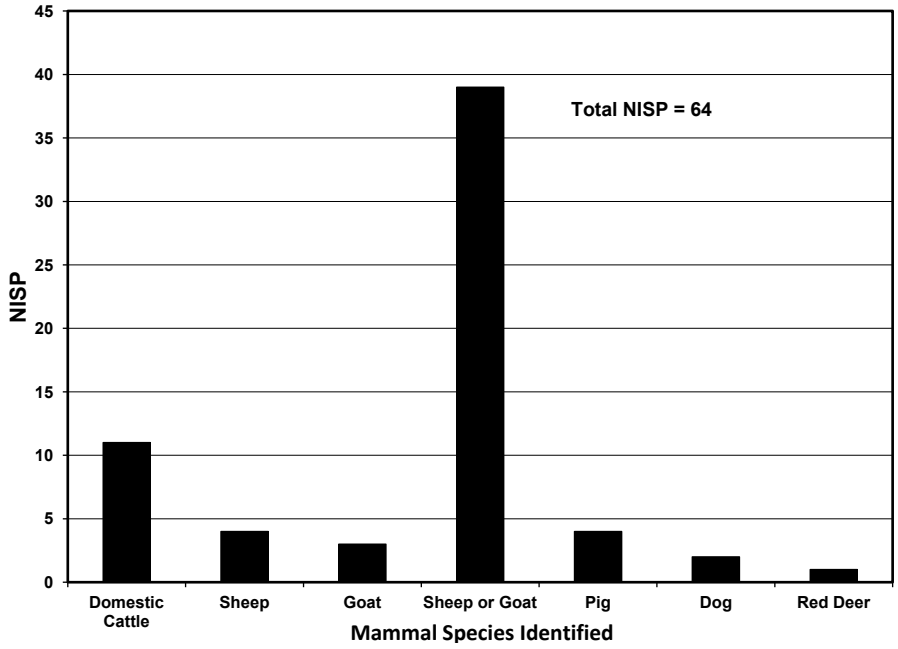

Figure 2.2.5. Species identified from the ritual installation in "Operation M5."

tion in "Operation M5," which was excavated during the 2012 field season (Figure 2.2.4). These contexts yielded the remains of cattle, sheep, goats, pigs, red deer, and fish. The species ratios (Figure 2.2.5) mirror those seen in the site as a whole. There is no evidence at present to suggest that these structures were associated with specialized ritual feasting (Simonyan and Rothman 2015).

Finally, let us address the thorny question of equids. The first point to be made is that the number of equid remains recovered from the 2009–2012 excavations at Shengavit is very small. Only 47 equid fragments were identified in the material that Pam Crabtree analyzed, and an additional 3 fragments were identified from the material that Jennifer Piro analyzed, 2 of which were positively identified as donkey based on dental morphology of lower cheek teeth. Some archaeologists and archaeozoologists have suggested that horses, which appear to have been first domesticated in the steppe regions of Kazakhstan, south Russia, and Ukraine in the second half of the fourth millennium BC (Outram et al. 2009), were introduced to Mesopotamia via the Caucasus. In 2010 Simonyan announced that horse bones had been found at Shengavit, although Hans-Peter and Margarethe Uerpmann have argued that these bones may have been recovered from disturbed contexts and that the earliest horses in the region come from MBA Nerkin Naver (Uerpmann and Uerpmann forthcoming). We wanted to be very careful of our identification of any possible horse remains. We had hoped to use Eisenmann's (1986) characteristics on the mandibular cheek teeth since Hite's (2008) research indicated that her criteria effectively distinguished horses, onagers, and donkeys at the Chalcolithic, Bronze Age, and Iron Age site of Godin in Iran. Unfortunately, we did not recover any complete mandibular cheek teeth in the material analyzed by Crabtree. We then looked at the first phalanx, since Simon Davis and his Portuguese colleagues (Davis et al. 2008; see also Dive and Eisenmann 1991) have suggested that measurements on the first phalanx can also be used to distinguish between the remains of horse, donkey, and onager. We recovered one partially measurable first phalanx from the Shengavit material that we examined. Its SD measurement was 26.2 mm. Based on Davis et al. (2008), our first phalanx is probably a donkey or possibly a small onager. It is clearly smaller than all the horse remains measured by Davis and his colleagues. The other measureable equid bones analyzed by Crabtree (Table 2.2.1) are consistent with onagers. The best that can be said at present is that there is no clear evidence for horse remains from the EBA faunal assemblage recovered during the 2009–2012 campaigns at Shengavit. In addition, the small numbers of equid re-

Table 2.2.1. Measurements (in mm) on other equid remains recovered from the 2009–2012 excavations at Shengavit. (After von den Driesch 1976.)

Measurements (in mm)	Context	GL	Bp	SD	Bd	Dd
Metacarpus	Layer III				43.1	31.3
Metacarpus	Layer VIII				42.0	
Second phalanx	Layer I	40.4	40.8	34.3	36.1	
Second phalanx	Layer II	38.4	38.5	35.8	34.9	
Second phalanx	Layer V–VII		39.0	34.3	34.3	

mains identified from the large Shengavit faunal assemblage recovered between 2009 and 2012 suggests that these animals played only a very minor role in meat consumption at EBA Shengavit. Assuming that these remains are in fact onager, they would point to a limited role for hunting in general.

Future Directions

The analysis of the faunal remains from Shengavit is a work in progress. Additional studies of the stratigraphy and the ceramic remains have allowed the zooarchaeological data to be subdivided into eight distinct cultural layers. The final report on the Shengavit material will allow us to trace possible changes in animal use at Shengavit throughout the first half of the third millennium BC. These analyses will be presented in the forthcoming site report (Crabtree and Piro forthcoming). In addition, we note that the species ratios from Shengavit share similarities with those that have been published for other Kura-Araxes communities. These similarities include large numbers of caprines and very small numbers of pigs. For example, the faunal assemblage from Arslantepe dated to ca. 3000 BC shows a decrease in cattle, increased numbers of caprines, and very few pigs (Frangipane 2014; see also Clason and Buitenhuis 1998). Our ongoing research, however, points to substantial variations in age profiles and animal-use patterns between different Kura-Araxes communities, and this is an issue that we plan to investigate further (Crabtree and Piro forthcoming).

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