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Integration and interpretation of architectural and faunal evidence from Assyrian Tušhan, Turkey

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Abstract: *The integration of architectural and faunal remains increases our understanding of social and economic activities at archaeological sites in the Near East. This paper presents the results of recent analyses from the excavations of the Late Assyrian palace found in the provincial capital of Tušhan (Ziyaret Tepe) along the upper Tigris River in Southeast Turkey. From the inception of the excavations, zooarchaeological data have been integrated into conventional methods of analysis. This has contributed to a better understanding of the use of rooms and specific activity areas within the palace. Areas for food processing, consumption, and the disposal of animal remains and their by-products not detected by previous architectural or other evidence can now be identified. The building's open courtyard in particular was used for butchering of domesticated animals, mainly bovids (sheep, goats, and cattle) and to a lesser extent pigs. In contrast, the reception room was devoid of any animal bones, thus kept clean. Surprising is the evidence for wild birds in Room 4/8, the main room of the northern apartment, and Room 1, suggesting a special use of those animals.*

Key words: spatial analysis; zooarchaeology; architecture; Assyria; Ziyaret Tepe

Introduction

Despite a long tradition of architectural analysis by archaeologists it remains notoriously difficult to infer from building plans alone the actual function and use of the built environment and to understand the dynamics of daily life. This is particularly true for housing in the Near East, a region which is well-known for its multifunctionality of rooms and houses, in both ancient and modern times. Recently, significant progress has been made concerning the study of domestic architecture and

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space (e.g., Krafeld-Daugherty 1994; Pfälzner 2001). Further, several scholars have chosen to highlight specific aspects of household archaeology from limited regions in the Near East. As examples, Otto (2006) provides a concise summary of different approaches to the study of domestic space by using the examples from Late Bronze Age Syria; and Rainville (2005:17-36) describes "micro-archaeological" methods for detecting domestic activities in particular. Likewise, two recent volumes present a collection of articles which address a range of questions around household archaeology in the Near East and incorporate various approaches and methods for study (Yasur-Landau et al. 2011; Parker & Foster 2012).

Palaces provide a larger scale than domestic residences; they often incorporate dozens or hundreds of rooms, many built on a monumental scale. When interpreting palatial architecture, the designation of room-function continues to be primarily based on evidence from its architecture which include fixed installations, such as drainage-systems, ovens and hearths, baked brick pavements, and artifacts. Much information is also gained from the general layout or plan of the building, allowing analysis of access patterns within a structure. Such studies lead to inferences about openness and secretiveness of rooms, and ultimately to a greater insight into public vs. private space. In some cases, textual documents have also aided in the use-designation of rooms. Rarely archaeological finds were taken into consideration when trying to determine more closely the use of (domestic) space in Assyrian palatial architecture (cf. Preußer 1954:43f.; Heinrich 1984:187-197; Hillier & Hanson 1984; Margueron 1982; Miglus 1996:63; the most influential typological study continues to be Turner 1972, more recently Kertai 2011). For most Assyrian palace sites, detailed inventories of pottery and other small finds are not yet published. Information gleaned from the evidence mentioned above has led to the interpretation of room-function associated with four principal domains within the palace—domestic, public, administrative, and religious.

Animal bone evidence is almost entirely absent from such considerations of palace architecture. Animal bones are the residues of human behaviour and through their analysis we can identify activity areas such as cooking and food preparation locations as well as where the consumption of these products took place. It is also possible in certain cases to determine specific ritual behaviour and related activities. The integration of zooarchaeological data can help determine the activities present, and in some cases modify room designations already determined by architectural layout, installations, or other evidence. Furthermore, the integration of zooarchaeological data can enhance the spatial data in order to establish patterns of domestic versus elite behaviour within a single building or between different buildings at one site (cf. Pfälzner 2001:47-50,54-56,272-279; Otto 2006:26-28; Marom & Zuckerman 2012; Reitz & Wing 2008).

This paper examines the spatial distribution of faunal remains throughout the Bronze Palace at Ziyaret Tepe, Assyrian Tušhan, with a specific focus on species exploitation, distribution, and food processing in order to highlight not only the general function of each of the rooms, but also the specific activities that took place within them.

Historical setting

After two military campaigns in 882 and 879 BC, the Assyrian king Ashurnasirpal II re-established Assyrian control in the Upper Tigris region after a period of military weakness around the turn of the millennium (Liverani 1992; Postgate 1992; Mayer 1995:265-274; Radner & Schachner 2001). His royal inscriptions mention the conquering of a number of cities, and the subsequent (re-)settling of Assyrians in the area which included the establishment of the city of Tušhan as provincial capital to the province Tušhan (cf. Grayson 1991:256-262: A.0.101.19; cf. Radner & Schachner 2001:754-756). Ashurnasirpal reports to have founded a "royal" palace at the site of Tušhan. A number of Assyrian governors are attested in the cuneiform sources and archival documents from Tušhan itself give evidence for an administrative presence until the year 611 BC, when the city was captured by Babylonian troops (Parpola 2008:14; Roaf 2002). The Assyrian buildings excavated so far in Tušhan do not indicate a violent destruction; the buildings appear to be open to squatters and decay post-611.

The site and its excavations

The modern tell of Ziyaret Tepe is located on the alluvial plain between the modern cities of Bismil and Batman in southeastern Turkey (**Figure 1**). It occupies a strategic position close to the Tigris River, on its southern bank, dominating the passage along the river between the Assyrian heartland to the southeast, in modern day northern Iraq, and the hilly areas of the Taurus mountains of eastern Anatolia.

Ziyaret Tepe is a multi-period site, with occupations ranging from the Early Bronze Age into the Ottoman period. The administrative importance of Tušhan during the Assyrian period may be summarized as follows: as a military frontier, as a wider administrative and mercantile center for the collection of raw materials from the foothills such as timber, stone, and metal ore between the Tūr Abdin and Taurus mountains, and as an agricultural center where Assyrian farmers exploited the rich alluvial floodplains of the upper Tigris River. In addition to serving as a transportation corridor into the Assyrian heartland, the Tigris River also served as a defensive barrier guarding the Assyrian interests to the south from the small kingdoms to the north.

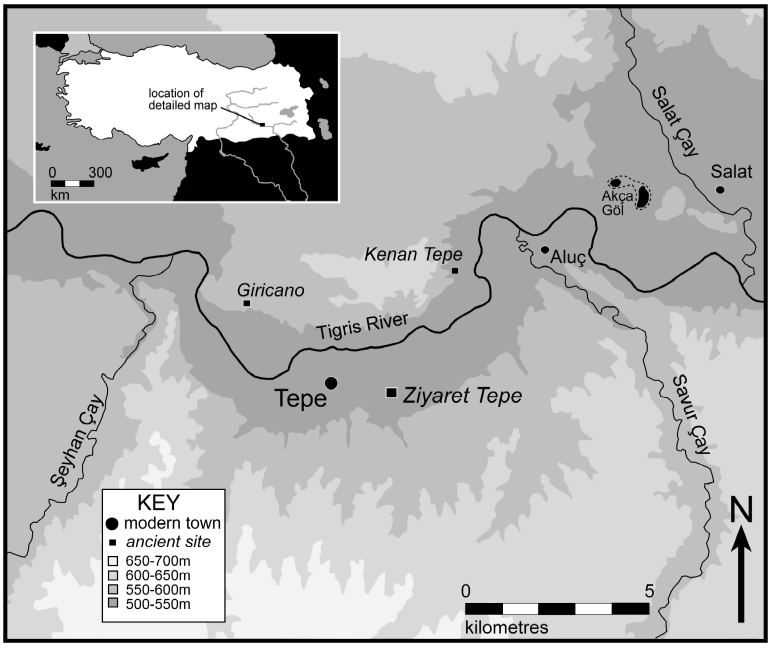

Figure 1. Location of Ziyaret Tepe, Eastern Turkey.

Excavations at Ziyaret Tepe, focusing primarily but not exclusively on the Late Assyrian occupation levels (882–611 BC), have been on-going since 1997 by a joint Turkish-American-British-German mission, under the general direction of Prof. T.C. Matney of the University of Akron, USA, as part of the Ilısu Dam Salvage Project. Preliminary reports have been published in the journals *Anatolica* and *Kazı Sonucları Toplantası* since 1998; the most recent report is Matney et al. (2011).

It is during the Late Assyrian period that the city expanded to its largest extent of thirty-two hectares (**Figure 2**). During this period, the city area was fortified by a strong city wall encircling various large public courtyard-buildings, domestic residences (both elite and non-elite), and administrative buildings. The lower town, which surrounds the citadel mound on its western, southern and eastern sides, has added greatly to our understanding of the layout of this provincial city within the Assyrian Empire.

Faunal remains are amongst the most numerous finds uncovered during excavations at Ziyaret Tepe. From the start of the excavations, faunal data have been integrated into the interpretations, analyses, and publications. The Ziyaret Tepe Ar-

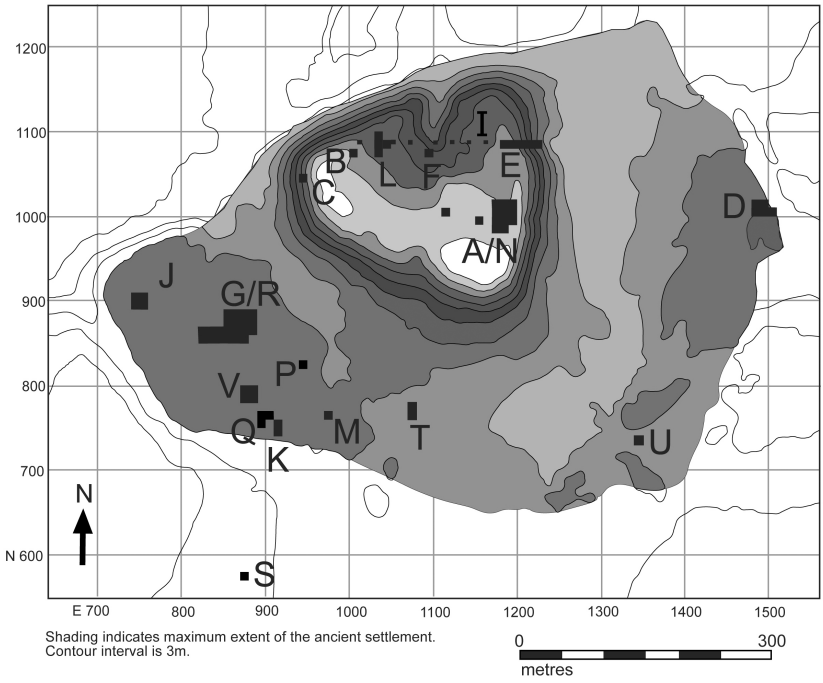

Figure 2. Topographic map detailing the maximum extent of the site with excavation trenches (operations).

chaeological Expedition employs an integrated relational database developed around the FileMaker Pro application. During the field season, the database is run over an intranet established in the fieldhouse; otherwise the database is available on-line to all specialists either through a client FM application or commercial web browser. The design of the database integrates all the spatial data from the excavations, the contextual and dating interpretations of the archaeologists, and all specialist datasets, small finds and pottery analyses into a single workspace. As such, the analysis of the architectural remains, stratigraphy, and periodization occurs simultaneously with the identification and analysis of the faunal and other remains, allowing for an active, iterative process of interpretation. This system is essential to our current analysis of room-use and of specific activity areas within the palace, including food processing, consumption, and disposal, as it provides the faunal analyst with real-time access to contextual and dating datasets.

Animal bones can reveal a significant amount of information on food, food-processing, and diet. It is important to distinguish between bones in primary contexts from secondary or tertiary contexts. In primary contexts bones are still in their orig-

inal place of deposition, either as the result of loss or deliberate burial or disposal. Bones in secondary or tertiary context have been moved from their original place of deposition, either due to ancient activities such as destruction or modern disturbances such as natural erosion or consecutive building activities. In order to ensure the accuracy of our analyses, only material deriving from secure primary contexts, i.e. material lying on and immediately above floors, was utilized in the following analyses.

Architecture of the Bronze Palace

On the eastern edge of the high mound at Ziyaret Tepe, in an area called Operation A/N, our team recovered archaeological evidence for a major palatial building. The building was dubbed the Bronze Palace after the discovery of a large number of bronze artifacts. Less than a meter below the modern surface, the Assyrian remains are badly pitted by subsequent medieval occupational layers. Although definitive proof has yet to be found, it is generally assumed that the Bronze Palace is the palace mentioned in Ashurnasirpal II's inscriptions (Wicke & Greenfield in press).

The Bronze Palace was first excavated from 2000 to 2002 (Operation A); subsequent excavations resumed from 2007 to 2012 (Operation N) (**Figure 2**; Matney et al. 2002:53-58). The excavation area is limited due to the location of a modern cemetery in the south, and the edge of the tell to the east of the palace. Hence, the excavation area has over the years been extended to the west and north (Wicke in Matney et al. 2009:38-51; 2011:69-72). To date, our team has cleared almost 1,000m² of the late Assyrian palace. Anecdotal evidence from the modern villages suggest the eastern edge of the mound has suffered severe erosion in recent times and it is impossible at present to estimate how much of the Bronze Palace has been lost to the east.

The palace was erected above an area the Assyrian builders had cleared and leveled by building a monumental platform (about 1.50m in thickness) across much of the area to be occupied by the Bronze Palace. Three main building phases can be distinguished architecturally by the dimensions and colour of the bricks as well as by stratigraphic and other observations. These phases are: the latest building phase (Phase I) which is very fragmentary and of which only few rooms could be ascertained. The majority of the building plan dates roughly to the 8th cent. BC, and represents the second building phase (Phase II) (**Figure 3**). Phase II was destroyed in places by fire and soon thereafter rebuilt to a very similar plan in Phase I, using the older walls as foundations. The earliest building phase (Phase III) was only uncovered on a small scale. A 9th cent. BC date is tentatively suggested for the foundation of the earliest palace. This paper refers to the 8th century BC Phase II building, allowing for the most complete reconstruction of eighteen rooms (cf. Wicke & Greenfield in press). The following discussion focuses on six spaces within the Bronze Palace: Rooms 1, 2, 3, 4/8, 5 and 7b. The rooms of the palace highlighted in this survey have fundamen-

tally different types of data and serve to show the need to employ several different integrative methods to determine the activities taking place within the palace rooms.

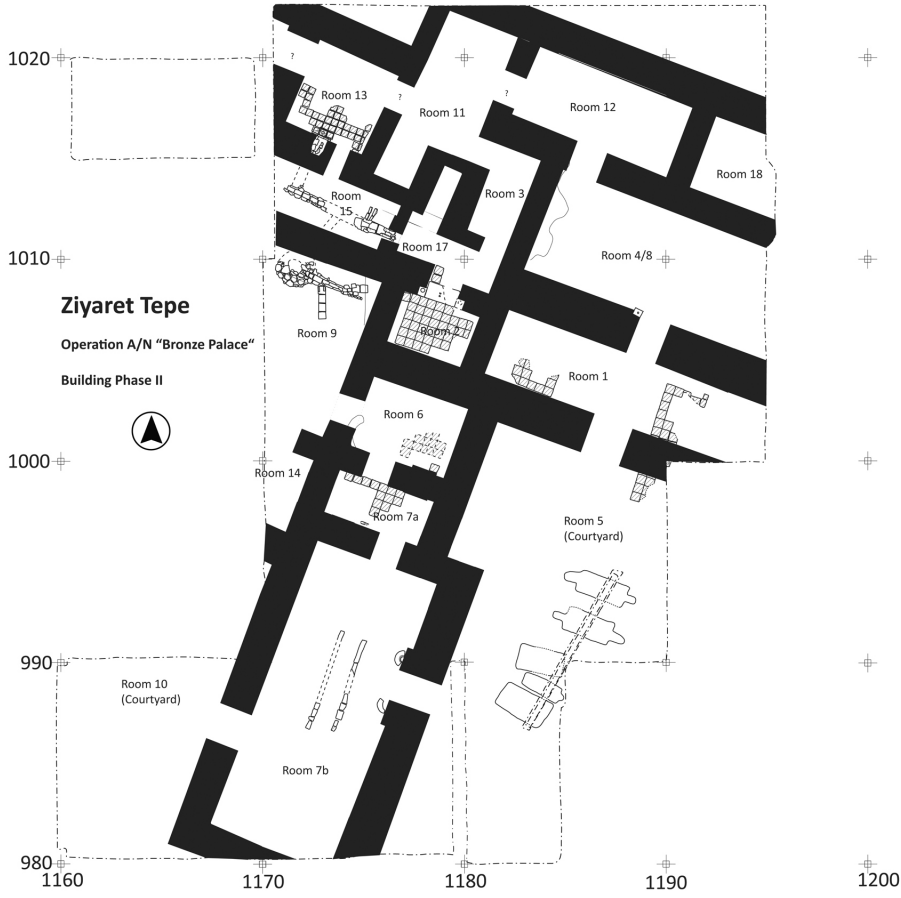

Figure 3. Plan of the Bronze Palace, building phase II as of 2012.

Towards understanding room functions in the Bronze Palace

Until now, our interpretation for room-function in the Bronze Palace at Ziyaret Tepe was derived principally from its architectural plan. In particular, the study of the pottery assemblage, which will provide important insights into the building's use, is still in progress; results of the ceramic analysis can only be given here for Room 2. In accordance with the standard plan of Assyrian palaces, the main entrance to the Bronze Palace can be expected to be located on the western side of the building, assuming

the general access to the high mound was from either the south or north. To date, a western courtyard has not been found and is presented here as hypothetical.

The principal room of the building is Room 7b; it is the largest interior room discovered within the building thus far, and measures 16×5.5m. There is an entrance or passageway to an eastern courtyard (Room 5) indicated by two door-sockets; what is still unclear, however, is the location of the main entrance from the western courtyard. Room 7b is probably placed between two courtyards and allows access from the west. Hence, it would have served as the intermediate space between the public (western) and domestic (eastern) sector of the building. A glimpse into administrative activities, which might have taken place in the outer, western courtyard, comes from a cuneiform tablet, which documents the names of women labourers working for the palace (MacGinnis 2012). The tablet, found at the western entrance to the room, might have been part of a larger archive located elsewhere.

The remains of decorative polychrome wall paintings were found—the only ones discovered in the building so far—within the collapsed material associated with this room. In addition, two limestone tramlines associated with a movable hearth were uncovered, which are common in Late Assyrian elite houses and palaces from the imperial cities. The wall paintings and tramlines indicate the importance of the room and support its interpretation as the principal reception room of the building.

The small room (7a) located north of the reception room was entered from 7b directly. This small room subsequently provides the only access to Room 6, which was paved with baked bricks covered by bitumen. The baked brick and the architectural layout suggest an ablution facility, based on a large number of parallels coming from palaces in other Assyrian capital cities. Our understanding of the architectural layout of these palaces suggests that the main reception rooms are generally associated with ablution facilities in a nearby chamber. In 9th to 8th century BC palaces, such chambers with corresponding installations are normally not directly connected to the main room, but could be entered through a small corridor, as is the case at Ziyaret Tepe. The standard model to illustrate this scenario can be found in the layout of the NW Palace of Nimrud (rooms S-X-W-V) and Fort Shalmaneser (in particular in the residential quarter around Courtyard S). In these cases, however, the ablution chambers are not in juxtaposition to the main public reception room, but rather to principal reception rooms associated with the domestic quarters (cf. Oates & Oates 2001; Kertai 2011:75).

The courtyard (Room 5) creates the largest space of the building, but determining which activities took place there remains problematic. Based on the current excavation data, the extent of the eastern courtyard can be estimated at roughly 20×25m. Five primary cremation burials were discovered under the baked bricks in the centre of the courtyard. The cremation burials held a large number of Assyrian-style grave goods,

namely bronze and stone vessels, carved ivories, beads as well as animal bones (cf. Greenfield in Matney et al. 2011:77-78; Matney 2002:55-57; Wicke in Matney et al. 2009:44-49; Matney & Wicke in prep.). Apart from those five cremation burials, which were sunk into the open courtyard space, four of them covered by the Assyrian pavement and therefore contemporary with the building, there are no other specific installations that could otherwise be used to determine a function for this space. It is not unreasonable to see the courtyard as a general space. The large open space not only allowed air and light into the surrounding rooms, but also served as a space to move through, occupy, and from which the activities of the palace could be observed. However, beyond this general designation, it is difficult to assign a direct function to the courtyard based purely on the architectural remains.

Room 1, located directly north of the courtyard, contains a protruding wall opening towards the southeast which provides an 'alcove-like' space. This room lies north of the courtyard, and south of room 4/8; however, it assumed at this time that this room is associated with the courtyard and not the suite of rooms to the north. At least one suite of rooms has been identified to the north of Room 1 and the courtyard and begins with Room 4/8. Room 4/8 measures ca. 5×10m in size. Interestingly, the threshold leading from Room 1 and the courtyard into Room 4/8 is equipped with a small door-socket, which proves that the entrance could be closed. Further north there are three additional Rooms (11, 12, and 18); and a narrow Room 3 which gave access to Room 2. Rooms 3, 11, 12, and 18 were very near the surface and not surprisingly contained a dearth of material remains on the floor.

The entrance to Room 2 is equipped with a limestone-threshold with grooves that are generally associated with a tightly fitting two-winged door, which could be closed when needed. The surface of Room 2 was paved with baked bricks and covered in bitumen. As noted above, a bitumen covering is generally considered to be indicative of the use of water, but there is no indication for a drain or channel underneath the floor to support such a function. In fact, the bitumen might have served a different purpose (cf. below).

The pottery associated with the floor of this room consists of eight medium sized jars (rim diameters around 20cm), one smaller sized jar (rim diameter 9cm) and three hemispherical bowls. There is a lack of proper cooking ware and palace ware vessels among the pottery retrieved (Azer Keskin 2012, pers. com.). The pottery found within the room, thus, appears to indicate a function associated with food preparation and storage, but not cooking. The medium sized jars, the secluded space, as well as the inner and therefore possibly cooler position of the room within the overall building, suggests a use for storing food (pantry). It is possible that the function of this room might have changed from an ablution facility to a pantry over time, although conclusive evidence for this is lacking. Room S40b at Fort Shalmaneser demonstrated

a similar pattern. It was first used as a bathroom; however, the *in situ* finds of pithoi and large numbers of other storage vessels provide sufficient evidence for a subsequent change in use (Oates 1960:7, pl. IIa.b; Mallowan 1966:439, fig. 364).

Room 3, measuring 2.40×4.60m, is a narrow corridor, which provides a connection between Room 11 and, through Room 17, to Room 2. Room 17 offers an entry to Room 15 to the west and possibly access to a ramp or stairway branching off north. Due to the proximity of the Assyrian layer to the modern surface, the architecture could only be retrieved in plan. Nevertheless, the differently coloured wall-bricks contrast with the grey floor-bricks and provide a clear plan of the room layout and the location of two doorways associated with Room 3.

Based on its size and arrangement it can be suggested that Room 4/8, entered through courtyard Room 1, was used as the northern domestic reception room within the confines of the domestic wing. Rooms 11 and 12 might have served as retiring or sleeping rooms, however, at this point this suggestion is largely speculative. As outlined elsewhere (Wicke & Greenfield in press, with further references), this arrangement of rooms is paralleled at other sites, e.g., Assur, Til Barsip, and Arslan Tash, and supports the suggestion that these were part of the general domestic wing.

Based on our understanding of the layout of other Late Assyrian palaces, a second suite of living rooms is likely to be located to the south of the courtyard, however, it was not possible to excavate this area. Two walls along the southern side of the courtyard provide only scant evidence for rooms present there. It remains open to discussion whether the courtyard was closed with a third suite of rooms to the east, or whether it was open to the landscape, facing east, looking towards the Tigris and the Assyrian homeland (cf. Wicke & Greenfield in press).

Zooarchaeology at Ziyaret Tepe: identification and analysis

General palace species frequencies (all contexts)

A total of 4,458 faunal specimens (including identified and non-identified fragments) were analyzed from Operation A/N taken from samples up to and including the 2009 season (material from the 2010-12 seasons are not included in this paper). The complete corpus comprises finds from rooms, walls, features, and unidentified spaces with either primary or secondary contexts. Primary contexts are defined as deposits from floors, "suprafloors" (lying on or immediately above the floor), or material within defined features and pits. Secondary contexts come from fill, building collapse, and pits with undefined edges. It is important to note that for all of the room assemblages 100% of the recovered faunal remains was analysed thereby rendering moot the issue of sample bias that is usually found in large faunal samples of this kind. Seven categories of size were used to determine how much of the bone was preserved post

excavation (i.e., 1 = whole, 2 = 3/4 to whole, 3 = 1/2 to 3/4, 4 = 1/4 to 1/2, 5 = 1/8 to 1/4, 6 = 1/16 to 1/8 and size 7 was extremely small fragment = less than 1/16 of the original size of the bone). For illustrating the fragmentation levels within the palace we selected the two smallest sizes of bones, sizes 6 and 7 to highlight the level of fragmentation in each room. Body portion to determine element preference was determined by placing each element into a specific "portion" of the body (i.e. thorax = ribs and vertebrae, cranium = cranium, mandible and teeth, anterior limbs, and distal limbs). Butchering was determined through the analysis of butcher marks on the bones—either from slices or chops. The butcher mark was determined to be a slice if the cut mark was present on the shaft or ends of the element, and only superficially on the outer surface without any significant penetration into the bone. Evidence for chopping was determined when the bone was cut (either successfully, or unsuccessfully) straight through an element from one side to another regardless of where it occurred on the bone and made with either a heavy knife or axe. There are alternative methods of butchering a carcass, such as bashing the bones or sawing through them. However, evidence of these marks was not present on any of the bones in this sample and will not be discussed further in this paper. Filleting was identified as small scrapes along the midshaft of a bone (Reitz & Wing 2008:171,216-217). To further refine our analysis, we eliminated from consideration all secondary contexts, and only identifiable samples from primary contexts were analysed for this paper. Likewise wall contexts were ignored since animal bones found in such contexts are found incorporated within the mudbricks themselves and, therefore, are not related to the room use. Of this reduced sample, a total of 1,173 specimens were identified to a taxon. Of these, 1,123 specimens (98%) are from domestic animals, with the traditional taxa identified to *Ovis*/*Capra* (sheep/goat), *Bos taurus* (cattle) and *Sus scrofa* (dom. pig) with the highest frequencies. Only 50 specimens (2%) of the fauna were from wild animals—mostly cervids.

How representative are our samples?

Normally in the course of archaeological analysis it is not practical to study an entire corpus of material. Excavations each summer at Ziyaret Tepe, for example, produce many thousands of animal bones over the entire site and the detailed recording of all of these bones is impractical. Rather, from a sample universe (in this case all the bones recovered via excavation), one draws a sample of bones whose characteristics are taken to represent the whole corpus. If selected appropriately, the sample can be subjected to statistical analyses and levels of confidence in the results of these analyses can be stated in precise terms. In the current dataset, however, we have chosen not to sample our sample universe, but rather to use 100% of the sample universe in our analysis. There are several reasons for so doing. The size of the sample universe is small. Fur-

thermore, we are limiting our study to secure primary contexts, further refined by the selection of only floor, suprafloor, and some features for consideration. Likewise, we are using individual rooms as our spatial units of study, further decreasing the number of recovered bones. Once we limit our statements to the distributions of individual species we are often discussing fewer than a dozen actual bones. By analyzing 100% of the sample universe, we are maximizing the size of the samples under study and, therefore, minimizing as far as possible any sample bias. The limits placed upon this analysis are considerable. We chose not to apply statistical tests since we feel we have limited the sample bias and the actual numbers presence of large and/or small frequencies of bone in each room is the actual or direct representation of what was recovered. However, we run a risk of over-interpreting the results by overreliance on a few bones. To counter this potential weakness, we have maintained very strict contextual control as is seen below, in emphasizing the preliminary nature of our results. Further work on other material classes (e.g., pottery, palaeobotanical, microdebris, and small finds), in addition to the study of other animal bones from secondary contexts should, in the future, allow for more robust conclusions to be drawn.

Species frequencies

While it is important and useful to have a general idea of the animals exploited within the Bronze Palace, it was our intention to take this analysis one step further, and determine exactly which bones came from specific rooms. Only specimens coming from a Late Assyrian primary context and located specifically within a room were used for this second-step of the analysis (i.e., eliminating those from unidentified spaces) comprising a total of 646 specimens (see **Table 1**). It is important to note that rooms 7, 7a and 6 did not yield any faunal remains and hence, are not part of the analysis. This absence is a notable point and is discussed in the interpretations of room function. The zooarchaeological data from the remaining five rooms (1, 2, 3, 4/8, 5) are further summarized below (see **Table 1**). Note all percentage frequencies are based on total faunal sample (NISP=646) for discussion on the combined rooms. Unless specifically mentioned, percentage frequencies for each individual room were calculated on the total room NISP, i.e., no calculations were done on subsets within these rooms.

Species frequencies (combined totals of rooms 1, 2, 3, 4/8)

Domestic species dominate the assemblage of combined rooms with a NISP of 611, or 94.6%. Just over half of the domestic species are *Ovis/Capra* (inclusive of *Ovis/Capra*, *Ovis aries* and *Capra hircus*) (NISP=351 or 54.3%), followed by *Bos taurus* (NISP=135 or 20.9%). The third highest frequency was represented by *Sus scrofa dom.* (NISP=95 or 14.7%). *Equid sp.* taxa (i.e. *Equus caballus*, *Equus asinus* and *Equus sp.*) have

a total sample NISP of 18 (2.8%) with *Equus caballus* having the highest frequency (NISP=12 or 1.9% presence within the total sample). *Canis familiaris* had the lowest frequency of the domestic animals (NISP=7 or 1.1% within the total room sample), followed by domestic *Aves* with 2 domestic specimens (0.3%) identified as *Gallus gallus dom*. and the other as *Columba sp*.

Wild species play a minor role in the overall faunal record of Ziyaret Tepe (Greenfield in Matney et al. 2009:50, 2011:75; Wicke & Greenfield 2013) and the assemblage uncovered within the Bronze Palace is no exception. The wild assemblage for

Table 1. Species frequency based on NISP counts for Rooms 1, 2, 3, 4/8, 5 within the Bronze Palace.

Taxon	Room 1		Room 2		Room 3		Room 4/8		Room 5		Total	
Aves	6	8.5		0.0		0.0	4	40.0	11	2.2	21	3.3
?	6	8.5		0.0		0.0	4	40.0	7	1.4	17	2.6
Aves sp.	6	8.5		0.0		0.0	4	40.0	7	1.4	17	2.6
Domestic		0.0		0.0		0.0		0.0	2	0.4	2	0.3
Gallus gallus		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Columba sp.		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Wild		0.0		0.0		0.0		0.0	2	0.4	2	0.3
Gallus gallus fer		0.0		0.0		0.0		0.0	2	0.4	2	0.3
Mammal	65	91.5	30	100.0	46	100.0	6	60.0	476	97.3	623	96.4
Domestic	65	91.5	30	100.0	45	97.8	6	60.0	463	94.7	609	94.3
Bos taurus	13	18.3	7	23.3	15	32.6		0.0	100	20.4	135	20.9
Bos/Equus		0.0		0.0		0.0		0.0	3	0.6	3	0.5
Canis familiaris		0.0	1	3.3		0.0		0.0	6	1.2	7	1.1
Capra hircus	4	5.6	1	3.3	4	8.7		0.0	29	5.9	38	5.9
Equus asinus		0.0		0.0		0.0		0.0	2	0.4	2	0.3
Equus caballus	1	1.4		0.0		0.0		0.0	11	2.2	12	1.9
Equus sp.		0.0		0.0		0.0		0.0	4	0.8	4	0.6
Ovis aries	5	7.0	3	10.0	1	2.2		0.0	24	4.9	33	5.1
Ovis/Capra	36	50.7	16	53.3	19	41.3	3	30.0	206	42.1	280	43.3
Sus scrofa dom.	6	8.5	2	6.7	6	13.0	3	30.0	78	16.0	95	14.7
Wild		0.0		0.0	1	2.2		0.0	13	2.7	14	2.2
Bos primigenius		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Capreolus capreolus		0.0		0.0		0.0		0.0	4	0.8	4	0.6
Cervus elaphus		0.0		0.0		0.0		0.0	6	1.2	6	0.9
Elephas sp.		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Hemiechinus sp.		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Lepus sp.		0.0		0.0	1	2.2		0.0		0.0	1	0.2
Reptile		0.0		0.0		0.0		0.0	2	0.4	2	0.3
Wild		0.0		0.0		0.0		0.0	2	0.4	2	0.3
Testudines sp.		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Testudo graeca		0.0		0.0		0.0		0.0	1	0.2	1	0.2
Grand Total	71	100.0	30	100.0	46	100.0	10	100.0	489	100.0	646	100.0

all rooms combined is proportionately low (NISP=35 or 5.4%) in relation to the domestic presence. The highest frequency of wild taxa is from *Aves sp*. (NISP=19 or 2.9%), of which two specimens which were further identified as *Gallus gallus fer*. The other fragments were identified by Dr. Joanne Cooper of Tring Natural History Museum, UK, as wild specimens according to diagnostic features, but they could not be identified to species due to the fragmentation and size of the samples. The second highest frequency was *Cervus elaphus* (NISP=6 or 0.9%), followed by *Capreolus capreolus* (NISP=4 or 0.6%). The other species present all had a NISP of 1 (0.2%) which includes *Bos primigenius*, *Hemiechinus sp*., *Lepus sp*., *Testudines sp*., and *Testudo graeca*, and ivory from *Elephas sp*. *Pisces sp*. do not appear in the Bronze Palace at all and have an extremely low frequency across the entire site which is rather surprising, considering the site's close proximity to the river. One must always account for much more difficult circumstances of preservation and recognition of fish bones in the archaeological record. However, most primary contexts within the Palace were 100% sieved and analysed so the lack of fish bones may be taken as a significant lacuna.

Species frequencies within individual rooms

Several rooms from the Bronze Palace were fully excavated in previous field seasons (18 rooms in total; **Figure 3**) representing three distinct occupational phases spanning at least two centuries. However, the following section focuses separately on the faunal data from a single occupation phase (II) where eight rooms are well documented and from which five rooms provided faunal remains. These rooms are: Rooms 7a and 7b (the reception suite), Room 5 (the courtyard), and Rooms 1, 2, 3, 4/8, and 6. While neither Room 7b nor 7a has any evidence of faunal remains, it is also included in the discussion of room function and space. Room 6 also did not contain any animal bones. A thorough analysis of the species frequencies found within these specific rooms offers new evidence on animal exploitation strategies within the palace and activities that took place within individual rooms (**Table 2**).

Table 2. Frequency of bone density and fragmentation chart for Rooms 1, 2, 3, 4/8, and 5 within the Bronze Palace.

Room #	NISP	Room size (m^2)	Bone density per room (m^2)	Density rank	Size 6 %	Size 6 rank	Size 7 %	Size 7 rank
1	71	18.0	3.94	2	31.1	2	16.8	4
2	30	24.8	1.21	4	22.2	4	22.2	3
3	46	11.0	4.18	1	16.3	5	27.9	1
4/8	10	45.5	0.22	5	64.5	1	0.0	5
5	489	225.0	2.17	3	28.7	3	23.8	2

Presented here is a frequency analysis of the specimens recovered in each room accompanied by a description of the butchery marks seen on specific faunal specimen (**Table 3** & **Figure 4** respectively). There are several different ways to interpret butchering marks (Reitz & Wing 2008:126-131) and a brief definition of butchering types is necessary to understand the stages of animal carcass processing for distribution and consumption. The two major stages of processing are usually by slicing or chopping through or between the animal elements in the body. Slicing usually involves the disarticulation (the removal of elements/limb portions and/or body parts); this process can involve the careful taking apart of the animal at the natural joints usually through slicing through the meat and ligaments. An alternative method to process an animal is dismemberment by chopping through the proximal or distal end of an element. Regular dismemberment is a faster (and cruder) way to cut a portion of a body off without regard for the natural division between elements. Both disarticulation and dismemberment can then be followed by the final processing of filleting to remove edible meat from bone and inedible tissues.

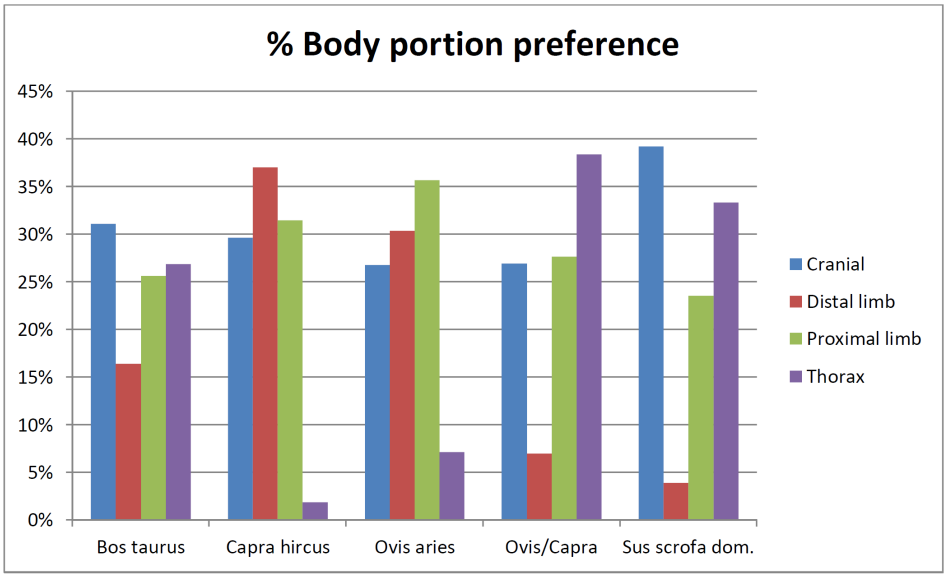

Figure 4. Chart of choice cuts for Room 1/5.

Room 1 is directly northeast of the courtyard, Room 5. With a total of 71 specimens, 65 of which can be identified to a wild or domestic species; domestics make up 91.5% of the sample. The remaining percentage (NISP=6 or 8.5%) comes from *Aves sp*. which at this point cannot be definitively identified to any specific species, but are assumed to be wild (see above comment discussion on bird identifications).

The most commonly represented species are caprines (NISP=45 or 63.4%), including *Ovis/Capra* (NISP=36), *Ovis aries* (NISP=5), *Capra hircus* (NISP=4). This is followed by *Bos taurus* (NISP=13 or 18.3%). *Sus scrofa dom.* has NISP=6 (or 8.5%) followed

Table 3. Butchered bones (numbers and frequencies) identifiable to species and element per room by butchering type and species (chopped=18; sliced=21; total n=29).

Taxon	Butcher location	Function	Rm 1 NISP	Rm 2 NISP	Rm 3 NISP	Rm 5 NISP	Total NISP
Bos taurus				1		6	7
Chop				1		3	4
metacarpal	proximal shaft	dismemberment		1			1
radius	proximal shaft	dismemberment				1	1
humerus	distal shaft	dismemberment				1	1
scapula	shaft	dismemberment				1	1
Slice						3	3
patella	midshaft	disarticulation				1	1
metatarsal	distal shaft	disarticulation				1	1
mandible	proximal end	disarticulation				1	1
Capra hircus						3	3
Chop						2	2
cranium	distal shaft	dismemberment				1	1
phalange	midshaft	dismemberment				1	1
Slice						1	1
astragalus	distal end	disarticulation				1	1
Cervus elaphus						2	2
Chop						2	2
cranium	antler base	dismemberment				1	1
cranium	antler base	dismemberment				1	1
Equus asinus						1	1
Slice						1	1
femur	midshaft	filleting				1	1
Equus caballus						1	1
Chop						1	1
humerus	distal end	dismemberment				1	1
Equus sp.						1	1
Slice						1	1
calcaneus	proximal shaft	disarticulation				1	1
Ovis aries				1		4	5
Chop						1	1
humerus	shaft	dismemberment				1	1
Slice				1		3	4
astragalus	distal end	disarticulation				1	1
phalange	proximal shaft	disarticulation				1	1
phalange	midshaft	disarticulation				1	1
metacarpal	?	?		1			1

Table 3. (continued)

Taxon	Butcher location	Function	Rm 1 NISP	Rm 2 NISP	Rm 3 NISP	Rm 5 NISP	Total NISP
Ovis/Capra			1			3	4
Slice			1			3	4
rib	proximal end	disarticulation				1	1
metatarsal	proximal shaft	disarticulation				1	1
metacarpal	shaft	filleting	1				1
rib	shaft	filleting				1	1
Sus scrofa dom.					4	4	
Chop						3	3
rib	shaft	dismemberment				1	1
phalange	midshaft	dismemberment				1	1
cranium	shaft	dismemberment				1	1
Slice						1	1
humerus	shaft	filleting				1	1
ulna	proximal shaft	disarticulation			1		1
Grand Total			1	2	1	25	29

by *Equus caballus* (NISP=1 or 1.4%). Interestingly, aside from birds, wild species are not present in this room.

Butchering: This room initially had the second highest density of butchered bones found within the palace (NISP=3, or 10.3% of the total butchered corpus, and 4.2% of Room 1's sample corpus) after the courtyard, which is not surprising given the proximity (and openness) to the courtyard. However, only one specimen was identifiable to species and element and thereby counted in our butchering analyses and discussion. Of the total butchered corpus, it represents 1.4% of the room sample, and 3.4% of the total butchered bone corpus. The butchered element had evidence of being sliced (see **Table 3**). The butchering evidence (based on the three specimens) and presence of species is most similar to the courtyard and allows one to count these two areas as potentially one functional space. Both rooms have an extremely high percentage of domestic species—the principal differences being that Room 5 has a large variety of wild species (all size categories) whereas Room 1 does not and that Room 5 has a slightly lower density of animal bones. In relation to other rooms Room 1 had the second highest density (or number) of bones (3.94 per m^2). The fragmentation percentage of the bones from this room was the second highest for size 6 (31.1%) and second lowest for size 7 (16.8%). When the two categories are combined the fragmentation is moderate (47.9%) and places it in the mid-range when compared to the other rooms.

Room 2 has a total of 30 specimens, of which domestic species make up 100%, dominated by bovids. Based on the total sample within the room, *Ovis/Capra* (NISP=

16 or 53.3%) have the highest frequency, followed by *Bos taurus* (NISP=7 or 23.3%), *Ovis aries* (NISP=3 or 10.0%), followed by *Capra hircus* (NISP=1 or 3.3%). Both *Sus scrofa dom.* (NISP=2 or 6.7%) and *Canis familiaris* (NISP=1 or 3.3%) are rare. There was no evidence of equids, birds, or wild specimens. This room had the second lowest density of remains (1.2 per m^2) of all the rooms. The sample has the second lowest degree of fragmentation for size 6 (22.2%) and in the middle (22.2%) for size 7. The combined total is 44.4%, which means although there were fewer bones than the rest, the size of the bones overall were larger relative to bone samples from the other rooms, see **Table 2**.

Butchering: Two specimens show signs of butchering: one specimen of *Bos taurus* was chopped and one of *Ovis aries* was sliced (see **Table 3** for species, element and location of butchering). While the greatest number count of butchered bones comes from Room 5 (NISP=25, or 86.2% of the known butchered sample it does not have the highest percentage within a room (5.1%). Room 2 has the highest percentage of butchered remains within a room (NISP=30 or 6.7%) and 6.9% of the total butchered corpus.

Room 3: There are no distinguishing architectural features present in this room, although its location suggests a probable corridor. While the sample has the lowest fragmentation percentage for size 6 (16.3%), it has the highest percentage (27.9%) of the smallest sized bones (size 7) of the entire corpus. The size and degree of fragmentation would be explained if the room was a corridor where people pass through on a daily basis; see **Table 2**. The sample size is moderately large (NISP=46), but has the highest density of bones within a room (4.18 per m^2) which can also be explained if this room is a hallway whereby the bones would be broken repeatedly if walked upon. Caprines, inclusive of *Ovis*/*Capra*, *Ovis aries*, *Capra hircus*, dominate within the total sample (NISP=24 or 52.1%), followed by *Bos taurus* (NISP=15 or 32.6%) and *Sus scrofa dom.* (NISP=6 or 13.0%). The one wild taxon that is present is *Lepus sp*. (NISP=1 or 2.2%).

Butchering: There is evidence of butchering (slicing) on only one specimen of *Sus scrofa dom*. This one specimen represents 2.2% within the total room sample and 3.4% of the entire butchered corpus.

Regarding Room 4/8, the architectural or artefactual evidence did not help to determine the function of these rooms. While the faunal sample is small (NISP=10), the pattern of data is unique. Room 4/8 has the lowest density of remains for any room (0.22 per m^2) however; it has a species frequency pattern that is not found in any other room regardless of sample size. For example, one might expect the widest range in species and frequency to occur in the largest rooms. This is not the case however. As previously stated this unique pattern in room 4/8 is not one of sampling bias since all recovered bones for each room were fully analysed. Therefore, it is inter-

esting that the frequency patterns of species in this room are strikingly different from elsewhere in the Bronze Palace. For example, domesticates represent only 60.0% of the sample (*Ovis*/*Capra* and *Sus scrofa dom.* each contribute 30.0%); this is a very low percentage compared to the other rooms. It is also of note that only medium-sized mammals are represented in the domesticate category. Conversely, *Aves* taxa (wild) are represented by an extraordinarily high frequency of remains in relation to the rest of the specimens and other rooms (NISP=4). Based on ageing, element, and a variety of other analytical features these are not the remains of one individual bird but rather a few different birds. Based on MNI the smallest number of individual birds (unidentifiable to species) is set at 3, giving a maximum of 4 individuals in this room. This combined sample represents the second highest group of remains (40.0%), a much larger than usual frequency of bird remains to be found within such a small room.

It is usually the case that with small sample numbers rare taxa are underrepresented (Lyman 2008; cf. Reitz & Wing 2008), however, Room 4/8 shows the opposite pattern. For example neither *Bos taurus* nor any equid remains are found in the room. This is in direct contrast to the data from every other room in the Palace where domesticates make up the majority of the sample, even when room size is taken into account (**Table 2**). Room 4/8 has the highest degree of size 6 fragmentation of all the rooms (64.5%) and a complete lack of size 7 fragments (**Table 3**). This sample also yielded the lowest variety of species and element identification due to the small size of most fragments.

Butchering: There is no evidence of any butchering activities taking place in this room despite the high degree of fragmentation. The lack of butchering evidence for the bird specimens is perhaps understandable given their small size, but the *Caprinae* and *Sus* elements also have no evidence of butchering while they are clearly butchered in the other rooms. Unfortunately, the sample is small, and the faunal pattern, although unique, does not lend itself to helping determine a function for this room.

Room 5 represents the courtyard area and is by far the largest space identified to date in the Bronze Palace. Consequently the largest number of faunal remains from the palace came from this room (NISP 489 or 75.7% of all specimens). Domestic mammals (NISP=465) make up 95.1% of the sample from the room. Bovids (sheep, goat, and cattle) dominate the total sample within the room with a combined total of NISP=359 (73.4%). Within the total sample of the room, *Ovis*/*Capra* has the highest frequency (NISP=206 or 42.1%), followed by *Capra hircus*, (NISP=29 or 5.9%) and *Ovis aries* (NISP=24 or 4.9%). *Bos taurus* follows the *Caprinae* in frequency (NISP=100 or 20.4% of the total sample within the room). There is also a significant presence of equids (NISP=17 or 3.5%) with *Equus caballus* dominating (NISP=11 or 2.2% of the total room NISP) and *Equus asinus* at a lower frequency (NISP=2 or 0.41% of the total room NISP). *Canis familiaris* is also present (NISP=6

or 1.2%). A total of 11 *Aves* specimens were recovered from the courtyard: two individual specimens were identified as domestic: chicken *Gallus gallus dom*. (NISP=1) and small pigeon *Columba sp*. (NISP=1). These two specimens represent 0.40% of the total room sample. An additional two *Aves* specimens were positively identified and verified by Cooper as wild chicken (*Gallus gallus fer*.) (NISP=2 or 0.4% of the total corpus). It is uncommon to find specimens of domestic chicken within this temporal and geographical context. These data tentatively suggest that the earliest evidence of domestic chicken in this area occurred during the Late Assyrian period. To our knowledge, these samples are some of, if not the earliest evidence for domesticated chicken in Eastern Turkey to date (Greenfield in Matney et al. 2011:75-77; Heigermoser 2004:45). In addition to the positive identification of some of the wild and domestic *Aves* specimens, an additional sample of Aves (NISP=7 or 1.4% based on total room sample) specimens were identified by Cooper as simply wild. Reptiles (*Testudines sp*.; turtle) represent NISP=2 or 0.4% of the entire assemblage. There is a higher number of wild animal bones as well as the greatest variety of wild taxa in this room in comparison to any room in the palace (NISP=24 or 4.9%). Cervids combined have a NISP of 10 specimens or 2.0% of the entire room sample or 41.7%. Individually *Cervus elaphus* has a NISP of 6 or 1.2% within the total room sample, followed by *Capreolus capreolus* (NISP=4 or 0.8%). The level of fragmentation is not the highest for the Bronze Palace, however the percentage of very small pieces of bone (sizes 6 and 7 combined) is just over half of the assemblage for the room (52.5%). The variety of species represented in Room 5 is impressive. While the courtyard is the largest in size of all the rooms it does not have the highest bone density (2.17 per m^2) nor does it have the highest percentage of rarer species (i.e., *Aves*). Further, while it might be convenient to assume that Room 1 and Courtyard 5 were used as refuse depots given the absolute number of bones, there is no evidence of permanent refuse disposal such as trash middens here and the bone density is commensurate with an activity area, not a refuse area. The knowledge that the site is abandoned in 611 BC and not reoccupied until much later during the Late Iron Age/Hellenistic period helps to interpret disposal patterns from this palace.

Butchering: A total of 33 butchered specimens (NISP=17 chopped and NISP=16 or 49.0% sliced) were recovered from Courtyard 5. Only 25 of these specimens could be given definite species identification. Relative to the total number of fully identified butchered bones (NISP=29), in the Bronze Palace, 86.2% were from this room. When compared to the entire corpus of bones in Room 5, only 5.1% are butchered. All medium-sized domestic mammals (*Ovis aries*, *Capra hircus* and *Sus scrofa dom*.) and large-sized domestic and wild mammals (*Bos taurus*, *Equus asinus*, *Equus caballus*, *Cervus elaphus*) have evidence of butchering; either chops, slices, or both (**Table 3**). Based on this data, it is possible to hypothesize that both skinning and disarticula-

tion activities took place within the courtyard. Without greater evidence of filleting, or burnt bones suggestive of cooking, it is difficult to reconstruct consumption patterns, however, this evidence indicates processing tasks are being undertaken in the courtyard.

The two adjoining Rooms (1 and 5), yielded the highest numbers of total (identified and non-identified) butchered remains (NISP 3 and 33) within the building excavated so far. Because these are both large rooms (based on square footage) these results are not surprising. They also yielded moderate to high bone densities within the palace. An analysis of the patterns of butchering on bones by species from the courtyard reveals several interesting patterns. All of the fauna which was butchered was from medium and large mammals by way of slicing or chopping—and both wild and domestic examples are present. It is important to remember that the vast majority of wild specimens were present in Room 5 suggesting that this room might have been a place where wild species were processed.

Based on this data, we can tentatively determine preferences for where specific butchering processes of particular species took place. We can also infer specific stages of carcass processing by looking at which animals were processed more fully. Harvest profiles can be indicative of exploitation strategies and also an indicator of status in relation to ages of the butchered animals. These important/issues will be addressed in the future in order to further explicate the patterns found within the domestic areas of the site, but are beyond the scope of this paper.

Room function and activity areas

A general overview of each of the rooms demonstrates that the distribution of remains in the Bronze Palace is patterned. The Courtyard (Room 5) has the majority of remains (NISP=489) and the largest surface (about 220m^2), followed in frequency by Rooms 1, 2, 3, and 4/8. Rooms 6 and 7a and 7b do not contain any faunal material at all, a significant absence. So, what do all of these numbers mean and how do they translate into indicators of activities? Based on the analysis and integration of the architectural elements and faunal material from each individual room, it is possible to further identify the functions of some of the rooms along with their associated activities. The following section outlines the function/s of each of the rooms and the possible activities that were carried out within each space. As work on other datasets proceeds (e.g., palaeobotanical, ceramic, microdebris, small finds), it is anticipated that the preliminary conclusions reached here may need to be revised.

Courtyard and Room 1: food processing areas

As noted earlier, the courtyard and antechamber is an open space preserved to about 22×10m. Inside the courtyard, five cremation burials were discovered, which con-

tained a large number of elite grave-goods, most of them severely burnt. However, there was little indication architecturally or otherwise as to the actual activities that might have occurred in this open space. It is important to remember this courtyard is directly adjacent to the throne room and, therefore, very specific activities related to the imperial administration could well have taken place within this space (e.g., feasting, presentations, and formal banquets).

The faunal samples are comprised primarily of domesticated animals, but two antlers of wild deer were also shown to have been initially processed (i.e. chopped off at the base of the antler for removal from the cranium) and do not bear any further evidence of tool/ornament modification. The majority of the butchering activities took place in the Courtyard (Room 5). This is a clear indication that domestic animals were the preferred meat of choice and processed in this space, although the possibility that wild species were butchered offsite and only the selected meat fillets were brought to the palace after processing must be entertained. The processing of animal carcasses is a multistep procedure which begins with the skinning, chopping and disarticulation of the animal followed by slicing and filleting the animal remains into manageable portions. After a thorough analysis of the butchering marks it is possible to determine where each of these processing activities took place.

The butchered specimens uncovered in these rooms have cut marks indicative of both skinning and disarticulation of the domestic species present in the room. Only two specimens, both of *Cervus elaphus*/red deer, were from a wild taxon and both elements were chopped antler, presumably to remove the antler from the cranium, perhaps for fashioning tools rather than for food.

The identification of slices (indicators of disarticulation and filleting) and chop marks (indicators of dismemberment) on the bones help to identify specific processing activities that occurred in each of the two rooms. For example, the one fully identified specimen from Room 1 was only sliced (usually an indicator of processing smaller animals) and would have been secondarily butchered as part of the two-step process of skinning or filleting after the initial disarticulation. Specimens found in Room 5 were either sliced or chopped but not both (an indicator of both small and large animals being processed) (**Table 3**). The data suggest the actions of disarticulation and filleting as part of processing activities were mutually exclusive (i.e., bones were sliced or chopped—not both). Perhaps the larger animals (cattle, horse, and deer) were dismembered in Room 5 and the smaller animals disarticulated and filleted in both rooms. While there is only one specimen from Room 1, the sample of butchered specimens from Room 5 is much more robust and subsequently serves as the primary data for interpretation. However, based on the combined data, it is possible to hypothesize that two separate activities were occurring in the different spaces, which can suggest discrete areas for different kinds of animal carcass processing.

It is necessary to determine if the slaughter and initial butchering process took place in the courtyard or off site. In the latter cases the meat would have been brought to the courtyard after processing. This is an important distinction to make in determining room function and activity. From the bar plot in **Figure 4** it is possible to see which parts of the animal are present in the courtyard. **Figure 4** examines body sections of cranial, distal limbs, proximal limbs and the thorax distributed by species. There were fairly equal representations of body parts present within the courtyard, save the distal limbs of *Sus scrofa dom*. This data suggests that there was not a specific preference for high status or 'elite' cuts for the palace, but rather there was equal access to each of the animal portions within the palace. We know this is a primary deposit and have evidence of the phalanges and poorer/less desired sections of the animal. If slaughter and initial butchering of an animal took place off site, with subsequent transportation of the animal parts up to the palace, one would expect not to find the less valuable or less meaty sections (i.e., phalanges, and the lower part of each limb, as well as the cranium). Furthermore, we might expect to find that the heavy meat-bearing bones (i.e. upper sections of both limbs), possibly seen as elite status cuts, would be taken up to the courtyard for consumption (de France 2009; Grant 2002; Reitz & Wing 2008). In the courtyard/antechamber all body sections are represented in relatively equal proportions, including crania. The high cranial representation especially suggests that the whole animal was present in the palace and being processed there (Marom et al. 2009). Whether the entire animal was filleted and consumed directly within the palace walls is more difficult to determine. However, the data does demonstrate that initial butchering, and possibly even slaughtering activities, occurred within the courtyard and alcove of the building.

Room 2: bathroom – kitchen – pantry

This room has been tentatively assigned a function as a bathroom given the presence of bitumen-lined baked bricks on the floor and the presence of a limestone slab used as a fitted doorsill. However, as noted above, there is no direct evidence of a drainage system. Assuming that this was the original function of the room, the integration of the faunal remains has highlighted the possibility of a change in the function of this room over time. Despite the small absolute sample size in Room 2, the frequency of butchered bones is relatively high. Very tentatively, this observation might be indicative of a food preparation or pantry area. Furthermore, fragmentation (both size and frequency) can be used as an indicator of food processing activities and this room has the second lowest fragmentation presence. As indicated by the pottery and the general location of the room in the architectural structure, this room might thus have served some storage purposes.

Room 3: narrow corridor?

Room 3 produced only a single butchered bone (sliced) of a *Sus scrofa dom*. It is not possible to assign a function to this room based solely on this data, or with the integration of the data from the architecture from this room. However, based on the high density and fragmentation of bones, the pattern appears to fit one that would be for a corridor or hallway.

Room 4/8: living and divination?

Due to the interesting and unique finds coming from this room it is necessary to comment, if somewhat tentatively, on its function. It has the most unique and varied specimens when compared to the other rooms. Based on a combination of variables (i.e., the variety, and frequency of birds, the presence of only medium mammals, probably sheep and goat, the high level of fragmentation, and the complete lack of butchering), it is possible to view this room as being reserved for a special purpose (i.e. divination, aviary), rather than food preparation or processing (see Greenfield in Matney et al. 2011 for further discussion). The variety and concentration of bird bones in Room 4/8 appears to be significant. There are exclusively wild birds found in these rooms, as opposed to Room 5 where domestic *Aves sp*. are found. It was not unusual in the Near East (and specifically in this region) to pick specific species for ritual or sacred purposes, including birds and domestic animals (M. Fales 2012 pers. com.). According to Collins and others, typically sheep are among the favourite domestic animal and birds among one of the preferred wild animals for use by diviners in the ancient Near East (Collins 2002:238; Freedman 1998, 2006; Marom & Zuckerman 2012:3). It is possible to speculate that these specimens might have been kept for several reasons. It is known that elites kept tamed and/or wild birds as pets, for hunting, and for divination activities, all of which are not mutually exclusive. Although it is mostly speculative to suggest that Room 4/8 might be a room for divination using birds, further investigation is certainly warranted.

Conclusions

The Bronze Palace of Ziyaret Tepe, Late Assyrian Tušhan, presents an example of Assyrian elite architecture in the eastern Turkish province. Although the Bronze Palace is the largest building discovered at Ziyaret Tepe until now, there is no direct evidence that we are in fact dealing with a government residence. The size, installations, layout, and small finds from the building itself, however, support the interpretation of the nature of the building as being "palatial". As deduced mainly from the overall plan of the building, certain rooms were ascribed to certain functions, following a very general dichotomy of domestic and public activities. Broadly speaking, Room 7b would

have served as a public/representative space and the northern suite of rooms around Room 4/8 for domestic purposes. A detailed zooarchaeological analysis, however, helped to define more specifically the actual use of rooms. Unsurprisingly, Rooms 6, 7a and 7b were kept clean—they are the principal reception rooms of the building and, therefore, the most formal part of the building, although the consumption of meat might have taken place here. Room 4/8, in contrast, yielded a large number of medium-sized mammal bones, possibly the actual residue of meals in what according to architectural layout ought to be the reception room of the domestic wing. The discovery of an unusually high percentage of wild bird bones begs for further interpretation. As noted above, the bird bones do not show any traces of further processing, hence they are unlikely to have been consumed there. As a domestic unit, the birds here might have been kept as pets in an aviary. The habit of keeping pets in particular for the enjoyment of children is attested not only in numerous Iron Age representations. "Kept like a bird in a cage" (*kīma iṣṣur quppi esiršu*; cf. Mayer 1995:310) is a well-known Assyrian saying when Assyrian kings referred to hostile kings besieged and trapped in their cities. Still, another intriguing idea is the keeping of birds for divination purposes, which would add a hint of "ritual activities" in the palace, otherwise unattested.

Animal bones, at present, remain the most direct evidence for the consumed meat and its preparation, and provide the best clues for understanding the more "mundane" or utilitarian use of the building. The faunal remains are highly illustrative to the use of the courtyard space, which otherwise yields no architectural information or built-in installations that could give hints to its use other than as a transitory space. Unsurprisingly, butchering activities are almost exclusively confined to the open courtyard area (**Figure 3**). At present there is no evidence for a kitchen by evidence of hearths or ovens; the faunal remains are the only witnesses to food-preparation within the Bronze Palace.

Moreover, the analysis of the faunal remains yields some initial insights into the Assyrian diet. Caprines (sheep and goat) provided more than 54% of the total remains from the palace, while cattle remains were far fewer (20.9%) and pigs although of greater importance in the Late Assyrian period (14.7%) than previously, are still a minor component of the diet (Jongsma-Greenfield & Greenfield 2013). Wild animals, which would have contributed as hunted game to the Assyrian menu, are almost insignificant having yielded only 2.5% of all the bones. The most common wild taxon is the various forms of deer. There is no evidence of exotic species (e.g., monkeys) which might have been delivered to the palace in form of tribute species. Thus, the animal economy and meat consumption for the palace is overwhelmingly based on local resources.

In reference to food-processing, the bones suggest that various food processing activities took place within the building complex to date, but mainly in the area of the eastern courtyard. The use of bones demonstrates that all body parts of the animal were processed in the palace. Since all body elements are present in the sample, it can be concluded that the entire animal was processed there.

Unfortunately, few Late Assyrian sites in the region have fully or partially published faunal reports for comparative data on animal exploitation during this time, which makes understanding patterns of animal husbandry during the Late Assyrian Empire a more difficult task. Likewise, on-going excavations and analysis at Ziyaret Tepe promise to enrich the preliminary observations made here.

This brief study demonstrates how the integration of archaeological and faunal data can increase our understanding of Assyrian everyday life in a major palatial residence. It is the first time a provincial capital city of the Late Assyrian Empire has been investigated in order to determine room function, activities and the general socio-economic structure of the inhabitants of the palace. The preliminary results presented here provide interesting new insights into some of the animal exploitation strategies and activities performed within a Late Assyrian palace. Clearly in this case, even open "dead" spaces like a courtyard when examined in detail, can speak eloquently about ancient everyday life.

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