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Early Bronze Age I Fauna Remains from Ashqelon Afridar, Area N

Miriam Pines

Introduction

An assemblage of 31 bones was recovered from Ashqelon Afridar Area N (see Golani, this volume), located near the seashore. The bones were collected by sieving the material accumulated on surfaces or floors, and from surface makeups through a 1 × 1 cm wire mesh.

The bones presented here derive from loci attributed to Stratum III (L7, L21, L22, L28, L41) and Stratum II (L8, L9, L35), and from L53 and L54 attributed to both strata, all dated by the excavator to Early EB I. Due to the small sample and the bones' similar contexts, i.e., mostly habitation surfaces dated to the same period, the material from both strata was combined and studied as a single assemblage.

Methods

The faunal remains were identified using the comparative collection at the Archaeozoology Laboratory of the Institute of Archaeology at the University of Haifa. Bone and tooth fragments were identified down to the lowest taxonomic possible level, using a rapid protocol (Davis 1992; Marom and Bar-Oz 2008; Trentacoste 2009).

Recorded bones were inspected for various surface taphonomic modification signs, such as weathering (following Behrensmeyer's [1978] weathering Stages 0–5, five representing the highest degree of weathering), butchery marks, signs of animal activity (gnawing or digestive marks) and burning. Bone and teeth standardized measurements, taken on all fused bones (Table 1), follow Driesch 1976.

Table 1. Bone Measurements

Species	Body Part	Measurements (mm)				
		GL	Bp	Bd	SD	GLpe
Sheep/Goat	Phalanges 1	38.01			8.7	
Cattle	Phalanges 2			27.9	25.2	48.9

Age-at-death estimations were based on epiphyseal fusion (Silver 1969 for pigs, cattle, and equids; Zeder 2006 for sheep/goats), and tooth eruption and wear scores (Zeder 2006 for sheep/goats; Lemoine et al. 2014 for pigs).

RESULTS AND DISCUSSION

The animal bone assemblage comprises 31 identified PoSACs (parts of the skeleton always counted; Davis 1992) that were poorly preserved. Weathering signs were high, with 40% coded above Stage 3 and higher, evidencing that the bones were exposed for some time before they were covered with earth (Behrensmeyer 1978). Most of the recorded bones showed fresh breakage, caused during excavation.

Species frequencies, according to body part, are presented in Table 2. The majority of the bones belong to sheep and goats (*Ovis aries/Capra hircus*; n = 9), followed by pigs (*Sus scrofa*; n = 8), equids (*Equus asinus/Equus caballus*; n = 6) and cattle (*Bos taurus*; n = 3). Unfortunately, given their poor preservation state, metric data was only available for two bones in the sample. Although the Bp measurement of a second phalange of cattle (following Driesch 1976) was not available for accurate measurement, its overall measurements seem to fall within the size range of domestic cattle (Grigson 1989; Helmer et al. 2005).

Body-part distribution of sheep/goats, cattle, pigs, and equids suggest that those parts considered "less meaty" (i.e., cranial parts, lower limbs and feet—upper and lower jaws, tibia, astragalus and phalanges) dominate the sample (n = 19), while parts rich in meat (i.e., upper fore and hind limbs—pelvis, scapula and radius) are fewer.

The epiphyseal fusion state was recorded for 17 bones; only three (18%) were unfused, suggesting a post-juvenile culling schedule for all animals. The few ageable teeth (n = 2) belonged to a juvenile pig and an adult sheep/goat.

Table 2. Skeletal Element Frequencies by Species[i]

Body Part	Species				
	Sheep/Goat	Cattle	Equid	Pig	*Total*
Maxilla (3)			1		*1*
Mandible (2)	2		1	2	*5*
Scapula				2	*2*
Radius	2			1	*3*
Pelvis			1	1	*2*
Tibia	1				*1*
Astragalus	3	1		1	*5*
Phalanges 1	1		1		*2*
Phalanges 2		2	2	1	*5*
Total	*9*	*3*	*6*	*8*	*26*

[i] Isolated maxillar and mandibular teeth are totaled separately in parentheses.

Horses/donkeys were most probably exploited as working animals, considering all the equids in the sample were butchered at advanced ages. This is also supported by the equid remains found previously throughout the site (Whitcher Kansa 2004:290−291; Sade 2008:44; Golani 2017). Notably, an exostosis pathology on a cattle's second phalanges (foot bone) may attest to this individual's use as a draught animal and is consistent with similar exostosis pathologies of cattle recorded previously in EB I Afridar (Whitcher Kansa 2004:287).

Conclusions

The animal bone assemblage from the Early EB I strata at Ashqelon Afridar Area N displays similar characteristics to bone samples found in previous excavations at the site. Age-at-death and body-part analysis revealed that the animals in Area N were butchered at all ages and utilized for different purposes. The sample size is too small for any further conclusions.

References

Behrensmeyer A. 1978. Taphonomic and Ecologic Information from Bone Weathering. *Paleobiology* 4:150–162.

Davis S.J.M. 1992. *A Rapid Method for Recording Information about Mammal Bones from Archaeological Sites* (Ancient Monuments Laboratory Reports 19/92). London.

Driesch A. von den. 1976. *A Guide to the Measurement of Animal Bones from Archaeological Sites* (Peabody Museum Bulletin 1). Cambridge, Mass.

Golani A. 2017. Ashqelon. *HA–ESI* 129 (December 16). http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=25352&mag_id=125 (accessed October 4, 2018).

Golani A. This volume. The Early Bronze Age Site of Ashqelon Afridar, Area N.

Grigson C. 1989. Size and Sex: Evidence for the Domestication of Cattle in the Near East. In A. Milles, D. Wiliams and N. Gardner eds. *The Beginnings of Agriculture* (*Symposia of the Association for Environmental Archaeology* 8; BAR Int. S. 496). Oxford. Pp. 77–109.

Helmer D., Gourichon L., Monchot H., Peters J. and Saña Seguí M. 2005. Identifying Early Domestic Cattle from Pre-Pottery Neolithic Sites on the Middle Euphrates Using Sexual Dimorphism. In J.-D. Vigne, J. Peters and D. Helmer eds. *The First Steps of Animal Domestication: New Archaeozoological Approaches (Proceedings of the 9th Conference of the International Council of Archaeozoology, Durham, August 2002)*. Oxford. Pp. 86–95.

Lemoine X., Zeder M.A., Bishop K.J. and Rufolo S.J. 2014. A New System for Computing Dentition-Based Age Profiles in Sus scrofa. *JAS* 47:179–193.

Marom N. and Bar-Oz G. 2008. "Measure for Measure": A Taphonomic Reconsideration of the Kebaran Site of Ein Gev I, Israel. *JAS* 35:214–227.

Sade M. 2008. The Archaeozoological Material. In A. Golani. The Early Bronze Age Site of Ashkelon, Afridar—Area M. *'Atiqot* 60:40–45.

Silver I.A. 1969. The Ageing of Domestic Animals. In D.R. Brothwell and E. Higgs eds. *Science in Archaeology: A Survey of Progress and Research* (2nd ed.). London. Pp. 283–302.

Trentacoste A. 2009. *Sometimes Less is More: Comparison of Rapid and Traditional Recording Methods*. MSc. thesis. University of Sheffield. Sheffield.

Whitcher Kansa S. 2004. Animal Exploitation at Early Bronze Age Ashqelon, Afridar: What the Bones Tell Us—Initial Analysis of the Animal Bones from Areas E, F and G. *'Atiqot* 45:279–297.

Zeder M.A. 2006. Reconciling Rates of Long Bone Fusion and Tooth Eruption and Wear in Sheep (*Ovis*) and Goat (*Capra*). In D. Ruscillo ed. *Recent Advances in Ageing and Sexing Animal Bones (Proceedings of the 9th Conference of the International Council of Archaeozoology, Duham, August 2002).* Oxford. Pp. 87–118.