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The Animal Bones from Ben Gamli'el Street, Yafo (Jaffa)

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The salvage excavation on 10 Ben Gamli'el Street, Yafo, yielded a small assemblage of animal bones from the ashy fill of the large Hellenistic-period ash pit in Area B (Stratum III; see Arbel, this volume). The bones were identified using the comparative osteological collection of the University of Haifa. The bone fragments were assigned to parts of the skeletal elements based on the coding system developed by Davis (1992).

The Finds

A total of 40 bones were identified to taxa and skeletal element (Table 1). They represent mainly caprines (n = 15, 38%), including three bones of goat (*Capra hircus*) and one of sheep (*Ovis aries*); cattle (*Bos taurus*; n = 3, 8%); pig (*Sus scrofa*; n = 7, 18%); and equids (n = 11, 38%), including three bones of donkey (*Equus asinus*). A few additional remains belong to dog (*Canis familiaris*; n = 2), deer (*Gazella gazella*; n = 1) and camel (*Camelus dromedarius*; n = 1). Signs of advanced weathering, caused by long exposure to sun and temperature changes before burial, appear on many of the bones (n = 9, 23%), indicating a low rate of sediment accumulation in an area that could have been sparsely populated or located on the margins of the settlement.

Two long-bone fractures show the morphology of dry bone breakage, also due to the impact of weathering. One bone, a goat mandible, is burned. Three bones exhibit butchering marks: a caprine scapula with signs of longitudinal chopping; another caprine scapula with a cut mark near the joint; and the diaphysis of a pig humerus with cut marks, probably from meat removal.

Most of the animal bones were fused, indicating the presence of only a few young individuals in the assemblage. Three worn caprine teeth and another three of pigs indicate that the animals were killed during the third or fourth year of life. The length measurements of two pig molars show that they are smaller than those of wild boar (Table 2; wild boar measurements taken from Marom and Bar-Oz 2013), and likely belonged to domestic pigs. The presence of small-bodied domestic pigs is inconsistent with the rather late slaughtering age, which characterizes hunted wild boar populations. Presumably, this was a wild population sustaining intensive hunting and undergoing body size diminution; alternatively, the piglet bones did not survive.

Table 1. Taxonomic and Skeletal Element Frequencies (after Davis 1992)

Skeletal Element[i]		Sheep/Goat	Cattle	Pig	Equid	Other
Mandible		7 (3 G)		3		1 (dog), 1(camel)
	dp4	(1)				
	P2	(1)				
	P3	(3)				
	P4	(2)		(1)		
	M1/2	(8)		(3)		(2) (2)
	M3	(4)		(3)		(0) (1)
Zygomatic		1				
Scapula	F	3				
	U					
	?					
Humerus	F		1	2		
	UM					
	UE					
Radius	F					
	UM	1				
	UE					
Carpals 1+2						
Pelvis			1			
Femur	F					1 (dog)
	UM					
	UE					
Tibia	F	1			3	
	UM					
	UE					
Metacarpus	F		1		1	
	UM					
	UE					
Metatarsus	F	1 (Sh)			1	1 (gazelle)
	UM			1		
	UE					
Metapodial	F			1	3 (1 donkey)	
	UM					
	UE					
Phalanx 1	F	1			3 (2 donkey)	
	UM					
	UE					
Phalanx 3						
Total		*15*	*3*	*7*	*11*	*3*
%		38	8	18	28	8

[i] F = fused; U = unfused; E = epiphysis; M = metaphysis

Table 2. Bone Measurements (in mm; following Driesch 1976; Davis 1996) and Tooth Wear Scores (following Haber and Dayan 2004)

Locus	Taxon	Element[i]	Age[ii]	GL	L	GLl	WA	Bp	Bd	BFd	GLP	BT	HTC	Dd	SD	DEM	DVM	WCM	DEL	DVL	WCL
118	Cattle	Humerus	F									54	24.3								
223	Cattle	MC	F						51.3	55.3						25	32	26	23.1	31.7	26
216	Dog	/M1	F		18.9		7.7														
216	Dog	Femur	F						24.2												
230	Equid	MC	F		173.2			36.6	33.5	33.5				24.2	25.5						
216	Equid	MP	F							51.6											
230	Equid	MP	F						37.9	36.6				27.5	27						
230	Equid	MP	F							35.8											
230	Equid	MT	F	214					30.7	32.3				25.9	23.4						
230	Equid	Ph-1	F	68.5				35.6	30.7	31.4					22.5						
204	Equid	Ph-1	F	57.9				36	30	29.7	22.4				22.3						
112	Equid	Ph-1	F	69.3				38.2							25.3						
220	Equid	Tibia	F						52.7					33.4							
216	Equid	Tibia	F						56.8					37.9							
216	Gazelle	MT	F			189.9			23.4	24.2					12.7						
230	Pig	/M3	Ag-3																		
230	Pig	/M3	Ag-4		31.6		14.2														
220	Pig	/M3	Ag-4		36.3		17														
227	Pig	Humerus	F									29.4	18								
204	Pig	Humerus	F									40.6	25.6								
214	Pig	MP	F						22.1	19.8											
214	Sheep/Goat	/M3	Ag-4		25.4		9.9														
214	Sheep/Goat	/M3	Ag-4		24.5		9.3														
121	Sheep/Goat	Ph-1	F					13.5													
230	Sheep/Goat	Radius	UM						30.7												
110	Sheep/Goat	Scapula	F								36.9										
230	Sheep/Goat	Tibia	F						26.7					20.4							
230	Goat	/M3	Ag-3		25.2		8.9														
214	Sheep	MT	F	182.5				21	23.6	24.9					12.5	12	17.1	11.6	10.6	16.8	10.6

[i] MC = metacarpus; M = molar; MP = metapodial; Ph-1 = phalanx 1; MT = metatarsus

[ii] F = fused epiphysis; UM = unfused epiphysis

The dog bones, including a skull, a tibia, a femur, fragments of a scapula, and ribs, originated from one locus (L216) and represent a single individual. They were found together with an equid tibia, probably a donkey, a goat jawbone and a complete foot bone, a metatarsus, of a gazelle. This may have been a dog burial of the type common in the Persian period, and to a lesser extent, in the Hellenistic period.

CONCLUSIONS

The small assemblage comprises farm animals, mostly goats, cattle and pigs, possibly representing the economy of the rural hinterland that supported the nearby urban settlement of Yafo. The remains may have belonged to a settlement phase that preceded the Hasmonean conquest of Yafo, as indicated by the dog burial and the high occurrence of pig bones, typically considered as characteristics of non-Jewish communities. It is also possible that the earlier pagan Hellenistic population of the settlement remained on the outskirts of the Hasmonean-period city.

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