

## Title: Animal bone remains from Sheikh Abd el-Gurna: issues and opportunities

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## ANIMAL BONE REMAINS FROM SHE IKH ABD EL-GURNA: ISSUES AND OPPORTUNITIES

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In the spring of 2003 a team from the Polish Centre of Mediterranean Archaeology headed by Tomasz Górecki embarked on the exploration of a Coptic hermitage installed in and around tomb TT 1152 and partly in tomb TT 1151, two Middle Kingdom tombs located in the rock cliff of Sheikh Abd el-Gurna in West Thebes. Tomb 1151 was known for its Coptic remains and had been the object of Herbert Eustis Winlock's research in the 1920s. The site had a very long history: both tombs were carved and used for the first time in the Middle Kingdom period, reused for burial in the Late Period (Górecki 2005) and most probably also in Graeco-Roman times. It was inhabited in the Coptic period serving, to judge by the artifacts, as a hermitage from the middle of the 6th to the middle of the 7th century AD and reoccupied after a gap in time in the beginning of the 8th century AD (Górecki 2010: 303). During seven seasons of work excavators recorded a rich assemblage of archaeological finds from the Pharaonic and Coptic periods, the material including numerous animal bone remains

## THE ASSEMBLAGE

The bones came from different parts of the site [*Fig. 1*]. Most of them were discovered in the fill of Tomb 1152 [*Table 1*]. Some animal remains were also found in the rubbish dump on the cliff slope, in Unit C and Tower B or in surface layers of the

courtyard. Another few dozen fragments of animal bones came from Tomb 1151, 40 m to the north of Tomb 1152 [*Table 2*]. According to Tomasz Górecki (2007: 186) the two tombs were used probably as parts of a single hermitage.

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The bone material contained 4046 animal remains. Of these, 3582 pieces, that is, 88.5% of the examined fragments, were identified anatomically and zoologically. From this number 91 bone remains came from Tomb 1151 and 3955 fragments from Tomb 1152. This disproportion should be attributed to the sort of archaeological methods used at the beginning of the 20th century when excavators were not interested in animal bones. Consequently, the content of the tombs cannot be compared. The age of the animals was estimated on the grounds of the fusion of the long bone ends with shafts (Kolda 1936) and tooth development (Lutnicki 1972). It was impossible to place all of the ovicaprine remains to species because of the similarity of sheep and goat bones. Standard methods were used to identify some of them (Schramm 1967; Zeder, Lapham 2010; Zeder, Pilaar 2010). Bones were measured according to the unified Driesch method (1976).

## RESULTS

Despite the disturbed stratigraphy (the tombs had been plundered at least twice, in the Pharaonic period and later, and excavated by H.E. Winlock (Winlock et alii 1926) and the mixed nature of the material, it was possible to distinguish two groups of bones. The first and more numerous group consisted of remains belonging to wild animals which had either died on the site or were prey. This group included whole bones with fragments of ligaments and skin. Large pieces of limbs or other body parts were also found. There were also many young individuals represented among the bones [Table 5]. The second group consisted of remains of offering deposits and partly of post-consumption bones. Most of the fragments were in poor condition; they were mainly small, splinter-like pieces. A few bore marks of pre-consumption treatment and of consumption, such as cutting, filleting or traces of fire (among them 54 unidentified fragments). The age of animals identified as belonging to this group varied substantially [see *Table 5*].

Mammal bones constituted the vast majority of the osteological material.

These were accompanied by 92 bird fragments (2.6% of all identified elements), 19 fish bones (0.5%) and two fragments of shell (0.1%).

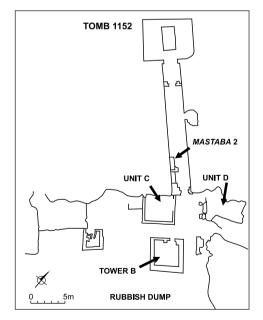


Fig. 1. Plan of the hermitage in Tomb 1152 in Sheikh Abd el-Gurna (Drawing U. Iwaszczuk)

### BIRDS

Bird remains were rare in the osteological material from Sheikh Abd el-Gurna [see *Tables 1, 2*]. Birds of two sizes were distinguished: 34 fragments of hen and the rest of pigeon (or birds of corresponding size). Hen remains were in better condition than those of pigeon; a few fragments of the body were preserved, especially the extremities with skin and ligaments. A whole hen corpse with bones still linked to the skin was also found.

### FISH

Only 19 fragments of fish bones were found on the site [see *Table 1*], in Tomb 1152 or nearby, but not in Tomb 1151. These were usually small pieces. Two fragments belonged to the genus *Tilapia*.

### CATTLE

Cattle (Bos primigenius f. taurus) remains were numerous [see Tables 1, 2]. Anatomical distribution analysis indicated the presence of all parts of the skeleton including phalanges [Tables 3, 4]. Young individuals constituted about 8.6% of all the large ruminant bone remains [see *Table 5*]. Sex analysis was not possible. Four bones bore traces of cutting, ten more were burnt to varying degree. There was also a skull with knife marks on the occipital condyle. Three cattle bones bore signs of advanced inflammatory condition visible on two limb bones and one mandible.

## OVICAPRINE

The share of ovicaprine (*Ovis ammon* f. *aries/Capra aegagrus* f. *hircus*) skeletal remains was high [see *Tables 1, 2*]. Identification using available criteria indicated that sheep bones were five times as common as those of goat. Anatomical

distribution for sheep and goat taken together showed the presence of all skeleton parts, including phalanges [see *Tables 3, 4*]. The percentage of young individuals among small ruminants was fairly high (17.5%) [see *Table 5*]. Sex analysis was not possible. Traces of a sharp tool were observed on one sheep bone; seven bones were cut and two burnt. A skull with traces left by an axe on the occipital condyle was found in the fill of Tomb 1152. Traces of fire were observed on four bones.

### PIG

Domestic pig (*Sus scrofa* f. *domestica*) was represented by only 14 fragments [see *Tables 1, 2*]. Four of them belonged to a new-born individual. Pig bones bore no traces of pre-consumption or consumption treatment. Nothing can be said about the age or sex of the rest of the animals.

## CAMEL

Two pieces of camel (*Camelus dromedarius* f. *domestica*) bone were recovered from the site in Sheikh Abd el-Gurna [see *Tables 1*, 4]. One of them was cut and bore slight traces of a knife close to the proximal end of the humerus. Traces of this kind could have been made during skinning.

### EQUIDS

Equid bones were sparse [see Tables 1, 2]: 51 belonged to horse (Equus ferrus f. caballus) and 17 to donkey (Equus africanus f. asinus). A group of bones could not be identified for certain; they may have belonged to either a small horse or a donkey [see Table 1]. There was only one horse bone which belonged to a young individual. All donkey remains represented mature individuals [see Table 5]. One horse bone bore traces of intentional treatment,

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8 5		5				
	Fill of tomb	Mastaba 2	Inner unit	Unit cut in north corridor wall	Right niche (T)	Cellar in corridor
CATTLE (Bos primigenius f. taurus)	294	2	54		6	3
PIG (Sus scrofa f. domestica)	4		2			4
OVICAPRINE (Ovis orientalis f. aries / Capra aegagrus f. hircus)	231	19	20	1		16
SHEEP (Ovis ammon f. aries)	12		1			1
GOAT (Capra aegagrus f. hircus)	1		2			
HORSE (Equus ferrus f. caballus)	36		6			1
DONKEY (Equus africanus f. asinus)	14		2			1
EQUIDS	9				4	
CAMEL (Camelus dromedarius)	2					
DOG (Canis lupus f. familiaris)	635	20	45	3	10	11
CAT (Felis silvestris f. catus)	1					
Domestic Mammals	1239	41	132	4	20	37
GAZELLE (Gazella dorcas)	17		1		1	23
ANTELOPE (Antelope sp.)	14		6			
RED FOX (Vulpes vulpes aegyptiaca)	851	12	51		9	33
SAND FOX (Vulpes ruepelli ruepelli)	7	4				
HYENA (Hyaena hyaena)	381	14	14	1	7	7
SMALL RUMINANTS	4					15
LARGE RUMINANTS	6	1	4			
MOUSE (Mus musculus praetextus)		137				
RAT ( <i>Rattus rattus</i> )	1					
RODENTS	15	107	2			1
CANIDS	1	1				
Wild Mammals	1297	276	78	1	17	79
HEN (Gallus gallus)	33					
OTHER BIRDS	25	18	2			1
Birds (Aves)	58	18	2	0	0	1
FISHES (Pisces)	8	1				9
MOLLUSCS (Mollusca)	1	1				
Identified Remains	2603	337	212	5	37	126
Unidentified Remains	217	51	39	2	1	8
TOTAL	2820	388	251	7	38	134

Table 1. Zoological distribution of animal remains from Tomb 1152 in Sheikh Abd el-Gurna

						ТО	TAL
	Pit in unit C	Fill of Tower B	Rubbish dump	Court	Surface finds	n	%
CATTLE (Bos primigenius f. taurus)	1		31	1	20	412	
PIG (Sus scrofa f. domestica)			2			12	
OVICAPRINE (Ovis orientalis f. aries / Capra aegagrus f. hircus)			7		14	308	
SHEEP (Ovis ammon f. aries)			1			15	
GOAT (Capra aegagrus f. hircus)						3	
HORSE (Equus ferrus f. caballus)			1		3	47	
DONKEY (Equus africanus f. asinus)						17	
EQUIDS						13	
CAMEL (Camelus dromedarius)						2	
DOG (Canis lupus f. familiaris)	9	3	9	7	9	761	
CAT (Felis silvestris f. catus)						1	
Domestic Mammals	10	3	51	8	46	1591	45,4
GAZELLE (Gazella dorcas)			2			44	
ANTELOPE (Antelope sp.)				1		21	
RED FOX (Vulpes vulpes aegyptiaca)	6				5	967	
SAND FOX (Vulpes ruepelli ruepelli)			1		5	17	
HYENA (Hyaena hyaena)			7	4	9	444	
SMALL RUMINANTS						19	
LARGE RUMINANTS						11	
MOUSE (Mus musculus praetextus)						137	
RAT ( <i>Rattus rattus</i> )		13				14	
RODENTS						125	
CANIDS					1	3	
Wild Mammals	6	13	10	5	20	1802	51,5
HEN (Gallus gallus)						33	
OTHER BIRDS			6		2	54	
Birds (Aves)	0	0	6	0	2	87	2,5
FISHES (Pisces)					1	19	0,5
MOLLUSCS (Mollusca)						2	0,1
Identified Remains	16	16	67	13	69	3501	100,0
Unidentified Remains	1		117		18	454	
TOTAL	17	16	184	13	87	3955	

Table 1. Zoological distribution of animal remains from Tomb 1152 (continued)

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	Hermitage chapel	Fill	TOTAL
CATTLE (Bos primigenius f. taurus)	2	5	7
PIG (Sus scrofa f. domestica)		2	2
OVICAPRINE (Ovis orientalis f. aries / Capra aegagrus f. hircus)	1	5	6
HORSE (Equus ferrus f. caballus)	3	1	4
DOG (Canis lupus f. familiaris)		16	15
Domestic Mammals	6	29	35
GAZELLE (Gazella dorcas)		1	1
SAND FOX (Vulpes ruepelli ruepelli)	9	7	16
HYENA (Hyaena hyaena)	2	20	22
CANIDS		2	2
Wild Mammals	11	30	41
Birds (Aves)		5	5
Identified Remains	17	64	81
Unidentified Remains	2	8	10
TOTAL	19	72	91

Table 2. Zoological distribution of animal remains from Tomb 1151 in Sheikh Abd el-Gurna

Table 3. Anatomical distribution of animal remains from Tomb 1151 in Sheikh Abd el-Gurna

	head*	trunk*	forelimb, proximal part*	forelimb, distal part*	hind limb, proximal part*	hind limb, distal part*	phalanges	TOTAL
CATTLE (Bos primigenius f. taurus)	1	2	1	1	2			7
OVICAPRINE (Ovis orientalis f. aries /Capra aegagrus f. hircus)		6						6
GAZELLE (Gazella dorcas)	1							1
PIG (Sus scrofa f. domestica)			2					2
HORSE (Equus ferrus f. caballus)	3	1						4
DOG (Canis lupus f. familiaris)**	2	6	5	1	2			16
SAND FOX (Vulpes ruepelli ruepelli)***	5	3	4		2	2		16
HYENA (Hyaena hyaena)****	5	3	7	1	5	1		22
CANIDS		2						2

head - skull, mandible; trunk - ribs, vertebrae, sternum; forelimb, proximal part - scapula, humerus, radius, ulna; forelimb, distal part – carpus, metacarpus, sesamoids; hind limb, proximal part – femur, patella, tibia, fibula; hind limb, distal part – calcaneus, tarsus, metatarsus, sesamoids

counted without two bigger fragments of forelimb and hind limb

\*\*\* counted without a bigger fragment of forelimb \*\*\*\* counted without two bigger fragments of hind limb

the radius having been cut on the saggital plane and polished.

#### WILD RUMINANTS

Two kinds of animals were identified: gazelle (*Gazella dorcas*) and antelope (*Antelope* sp.). Gazelle remains were more frequent than those of antelope [see *Tables 1, 2*]. Analysis of anatomical distribution [see *Tables 3, 4*] demonstrated that all the gazelle bone fragments came from the head or extremities. There were also seven fragments of distal parts of extremities with skin and ligaments (all of them from the hind limb) and an almost complete skeleton of a juvenile individual which was found in the cellar in the hermitage corridor. Apart from that, there were only three fragments from young individuals, two of gazelle and one of antelope.

Table 4. Anatomical distribution of animal remains from Tomb 1152 in Sheikh Abd el-Gurna

	head*	trunk*	forelimb, proximal part*	forelimb, distal part*	hind limb, proximal part*	hind limb, distal part*	phalanges	TOTAL
CATTLE (Bos primigenius f. taurus)	108	62	67	29	105	32	14	417
PIG (Sus scrofa f. domestica)**	2	3	2		2	1	1	11
OVICAPRINE (Ovis orientalis f. aries / Capra aegagrus f. hircus)	37	139	47	12	66	21	9	331
HORSE (Equus ferrus f. caballus)	13	6	11	1	15	1	1	48
DONKEY (Equus africanus f. asinus)	3	7		4	1	1	1	17
CAMEL (Camelus dromedarius)			2					2
DOG (Canis lupus f. familiaris)	123	372	57	49	89	68	16	774
CAT (Felis silvestris f. catus)	1							1
GAZELLE (Gazella dorcas)***	5		1	1	1	2	5	15
ANTELOPE (Antelope sp.)	3	2	7	1	5		3	21
SAND FOX (Vulpes ruepelli ruepelli)	146	303	159	35	249	66	9	<b>96</b> 7
RED FOX (Vulpes vulpes aegyptiaca)	3	1	6		14			24
HYENA ( <i>Hyaena hyaena</i> )	85	98	115	21	88	47	11	465
SMALL RUMINANTS	1	18						19
LARGE RUMINANTS	3		6		1		1	11
EQUIDS	5	1	2	1	2	1	1	13
CANIDS	2	2				1		5

 head – skull, mandible; trunk – ribs, vertebrae, sternum; forelimb, proximal part – scapula, humerus, radius, ulna; forelimb, distal part – carpus, metacarpus, sesamoids; hind limb, proximal part – femur, patella, tibia, fibula; hind limb, distal part – calcaneus, tarsus, metatarsus, sesamoids

\*\* counted without four remains of one piglet individual

\*\*\* seven fragments of extremities and incomplete skeleton of young individual not counted

#### CARNIVORES

This is the biggest group of animal remains recovered from the site in Sheikh Abd el-Gurna. It includes five species: domestic dog (Canis lupus f. familiaris), cat (Felis silvestris), sand fox (Vulpes ruepelli ruepelli), red fox (Vulpes vulpes aegyptiaca) and hyena (Hyaena hyaena). Fox, especially sand fox remains were dominant in this group [see Tables 1, 2], followed by dog remains. Hyena bones were less frequent. One bone belonged to a cat [see *Table 1*]. Carnivores were also represented in different manner: five mammal bones were gnawed by a canid. Age analysis indicates that carnivores, the dog especially, included many young animals [see Table 5]. Three fragments of hyena bones and two dog remains were burnt. Two bones of hyena bore traces of advanced inflammatory condition visible on the joint surface of vertebra and ulna next to the enthesis with radius. A hyena humerus was broken and not totally fused. The right section of a dog mandible shows the loss of a second premolar and a fitting maxilla shows the loss of a first and second premolar, in both cases the alveoli were grown over with the periosteum.

#### RODENTS

Bones of small mammals, mostly mouse and rat [see *Table 1*], are frequent at archaeological sites. Four rodent bones were found burnt to a different degree.

	Total number of remains	Rem of yo indivi	oung
	101110	n	%
CATTLE (Bos primigenius f. taurus)	419	36	8.6
PIG (Sus scrofa f. domestica)	11	6	_
OVICAPRINE (Ovis orientalis f. aries / Capra aegagrus f. hircus)	332	58	17.5
HORSE (Equus ferrus f. caballus)	51	1	_
DOG (Canis lupus f. familiaris)	776	207	26.7
GAZELLE (Gazella dorcas)	45	2	_
ANTELOPE ( <i>Antelope</i> sp.)	21	1	_
RED FOX (Vulpes vulpes aegyptiaca)	24	3	_
SAND FOX (Vulpes ruepelli ruepelli)	976	133	13.6
HYENA (Hyaena hyaena)	467	75	16.1

# Table 5. Participation of remains of young mammals in the bone assemblage

## CONCLUSIONS

The material from Sheikh Abd el-Gurna was mixed, making any observations concerning funeral rituals in the Middle Kingdom and in later periods uncertain to say the least. In this sense the situation does not match that at Dayr el Barshā, where the lower layers of the Middle Kingdom deposit of faunal remains were not disturbed (De Meyer, Van Neer *et alii* 2005–2006: 47). It is possible nonetheless

to discuss different aspects of human and non-human activities over the ages based on this material.

#### PHARAONIC PERIOD

It is impossible to distinguish in the mixed material from the site specific remains of offering deposits originating from the primary Middle Kingdom burials. Moreover, some of the material could have been placed inside the tomb, probably as offerings for the dead, after the funeral, during annual ceremonies (Gnirs 1995: 243-247). Some animal remains (especially mummified) may be associated with New Kingdom or even Graeco-Roman period burials discovered at the site as well, but according to Christina Riggs (2003) animal mummies were relatively rare in Thebes in the Graeco-Roman age. On the other hand, Nigel Strudwick (2003: 171), quoting Dieter Kessler's research, mentioned finding at Thebes many species of animals (including mammals, birds and even fish), which were mummified during this period. C.A.R. Andrews (1984) also mentioned animal mummies from Thebes dated to the Graeco-Roman period.

Food offerings are commonly found as grave goods at burial sites in Egypt from the Predynastic period (Van Neer, Linseele, Friedman 2004: 60) through Roman times (Rhind 1862: 99–101). They consist of meat portions, very often mummified (Ikram 1995). Salima Ikram (1995: 237) showed that there were two types of meat offering deposits: one concerned mummified pieces of meat, the other animal bones, frequently with cut marks on them. Sheikh Abd el-Gurna produced only a few animal remains which could be considered as leftover mummified food. They did not bear any visible marks of preservation (for example, with *natron*, resin or another substance) and specialist examination is required, but even so, the condition of the whole hen corpse and the gazelle extremities suggests that they could have been intentionally mummified. None of the Sheikh Abd el-Gurna animal remains were wrapped in bandages. Some of the animal bones bore cut marks (visible mainly on ovicaprine and cattle remains). Butchery marks were discovered also on some goat bones from a Predynastic cemetery in Nag ed-Deir (Ikram 1995: 294) and on cattle bones from Dayr el Barshā dated to the Middle Kingdom period (De Meyer, Van Neer et alii 2005– 2006: 48–49). According to data collected by Ikram (1995: 237-296), bones from the extremities and ribs were the most common parts of a skeleton found in graves. Interestingly, Sheikh Abd el-Gurna produced also many skull remains, primarily of cattle, and two of them (one goat and one cattle skull) bore traces of decapitation. Ikram (1995: 284) cited only two burials with an offering made of an animal head, contrary to the multitude of tomb illustrations showing cattle heads among the food offerings (Darby et alii 1977: 138-139, Figs 3.31. 3.32). The scenes of cutting legs are very frequent and usually connected with the ritual of Opening of the Mouth (Otto 1960).

#### COPTIC PERIOD

Food was one of the aspects of daily life in the early Coptic Church that was governed by established rules. These indications and counterindications are attested to in the written Rules of Pachomius and Shenoute for monastery life, but it seems that the hermits kept them as well. The most common kind of food in the hermitage

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was bread, but monks also ate vegetables, cooked or uncooked, and used salt and herbs as seasoning. Meat was forbidden to the monks, except for fish which was allowed only in case of illness (Winlock et alii 1926: 145-149; Szmurło 2001: 167–189). The material from Sheikh Abd el-Gurna confirms this approach. Virtually no animal bones were found either in Unit D used as a kitchen (Górecki 2004: 177) or in Tower B serving as a storeroom, the latter producing the rare exception in the form of three dog bones and a few rat remains (Górecki 2005: 240). It could confirm the absence of meat from the monks' diet. Nonetheless, some bones, especially of the ovicaprine species, found at the site bore signs of pre-consumption treatment and of consumption, too. Therefore, it cannot be excluded that the monks in Sheikh Abd el-Gurna occasionally consumed meat.

Mouse and rat bones must also be connected with the hermitage. Their remains were found in the inhabited part of the complex, mostly on a bench in the corridor (mastaba 2) and in the storeroom (Tower B). Domestic mice live mainly in association with humans. Rodents were present in the hermitage in both phases of its occupation in the medieval period. Some of these bones bore traces of fire and were found in mastaba 2, which was built in the second phase.

#### WILD ANIMALS

Wild mammals produced the most numerous group of animal bones in Sheikh Abd el-Gurna. Some of them can be connected with Pharaonic burial rituals (gazelle). Others, like antelope, probably constituted the prey of carnivores, considering the characteristic marks and degree of fragmentation (Kuhn *et alii* 2009). Carnivores were represented by three wild species, among them interestingly two distinct species of fox. These animals could not have lived in the cave contemporaneously as they are rivals for the food supply and will not make their lairs in the same places.

#### OTHER CONCLUSIONS

Pigbones bore no traces of pre-consumption or consumption treatment, but there is no other reason to keep this animal than for meat. On the other hand, it is difficult to connect pigbones with Coptic or Pharaonic activity. They could also reflect a carnivore feast, especially the piglet bones. Pig images are known from Egyptian temples, but they do not rather appear in funerary contexts (Ikram 1995: 31; see Kőrösi 2010: 66).

The two camel bones are difficult to interpret in the context of the material from Sheikh Abd el-Gurna. They demonstrated butchery marks, which indicated that they had been subjected to human activity. However, it is impossible to prove on the basis of these remains that Egyptians in either the Coptic or the Pharaonic period ate camel meat. Equally well they could represent remains of a quartered animal carcass thrown away for sanitary reasons and dragged by dogs or hyenas to their lair in the cave.

Finally, a sequence of occupation of the Sheikh Abd el-Gurna burial caves by human and non-human inhabitants could be established based on an analysis of the faunal assemblage, even though conclusions in this respect will have to remain speculative. Hyenas came after the last interment but before the monks moved out. Their bones bore traces of gnawing and fire. Dogs, the remains of which bore no traces of processing but only some

pathological alterations, may have lived with the monks as companion animals or after the hermitage had been abandoned at the end of the 8th century. Some time after that foxes of two species started to use Tomb 1152 as their lair.

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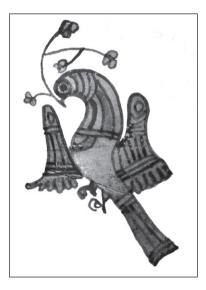
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# POLISH ARCHAEOLOGY IN THE MEDITERRANEAN



# **RESEARCH 2009**





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