

ANIMAL BONE REMAINS FROM OLD DONGOLA OSTEOLOGICAL MATERIAL FROM BUILDING B.I ON KOM A

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The osteological material came from the excavations in Building B.I on Kom A in Old Dongola in the 2001 and 2003 seasons.¹⁾ There were three sources of the assemblage: unit B.I.15 which was the depository of the upper-floor toilet facilities dated on pottery grounds to the 7th century AD; the staircase B.I.1 and the fill under the stairs; and court SWN.8 in front of the palace entrance leading to the

staircase, the latter two both dated by the pottery finds to the 13th/14th century.²⁾

Altogether 2526 animal bone remains were subjected to palaeozoological analysis (*Table 1*). The low percentage of remains that could not be identified testifies to the good state of preservation of the bones. Most of the damages to the material draw from butchering and treatment by cooking.

LOCALIZATION	DETERMINED FRAGMENTS		UNDETERMINED FRAGMENTS		TOTAL	
	Fragments	%	Fragments	%	Fragments	%
B.I.15	1278	91.02	126	8.97	1404	100
B.I.1	551	81.02	129	18.97	680	100
SWN 8	410	92.76	32	7.23	442	100

Tab. 1. Osteological remains from Kom A by unit

METHODS

The results of species and anatomical determination of the bones have been presented in table form. The material was also studied in terms of the proportions of specific parts of the carcass, morphology,

age, sex, pathologies and evidence of butchering. Osteometric measurements essential for study of animal morphology were based on guidelines presented by A. Driesch³⁾ and A. Lasota-Moskalewska.⁴⁾

1) For the present season, cf. report by W. Godlewski in this volume; for the 2001 season, cf. W. Godlewski, *PAM XIII, Reports 2001* (2002), esp. 206-210.

2) The dating in all three instances, W. Godlewski (personal communication).

3) A. Driesch, "A guide to the measurement of animal bones from archaeological sites", *Peabody Museum Bulletins*, 1 (1976) esp. 25-86.

4) A. Lasota-Moskalewska, *Wstęp do archeozoologii. Szczątki ssaków* (Warszawa 1997).

The observations were analyzed relevant to the point scales described by Lasota-Moskalewska. To facilitate interpretation, the bones were studied by carcass elements

divided into eligible and not eligible for consumption. The analysis took into consideration the spatial and chronological differentiation of the material.

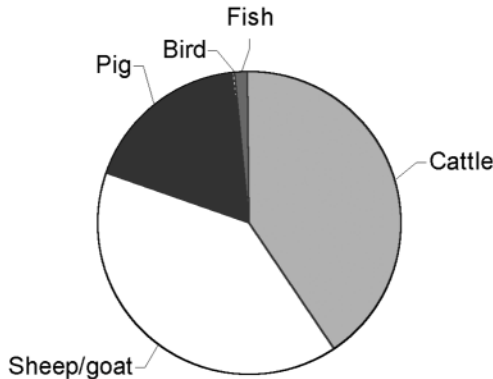
ANIMAL BONES FROM B.I.15 (7TH CENTURY)

The animal bones from the depository of the toilet facilities dated to the 7th century contained the remains of mammals, birds and fish. Among the mammals, the evidence revealed domestic animals alone: cattle (*Bos primigenius f. taurus*) over 40%, sheep (*Ovis ammon f. aries*) and goat (*Capra aegagrus f. hircus*) combined total of 39%, and pig (*Sus scrofa f. domestica*) much less, for only 18%. The percentage of birds and fish was minimal: 1.4% and 0.4% respectively (Table 2).

The anatomical determination of the bones indicated that the remains from B.I.15 were of a post-consumption nature. The quantity of edible parts of the carcass, that is, trunk and shanks, for all species of mammals was considerably higher as compared to the parts with less meat.

Few of the remains were observed to belong to young, morphologically immature animals. The highest number of such bones represented pig (4%), slightly less sheep/goat (1.6%), and the least cattle (0.7%).

SPECIES	DETERMINED FRAGMENTS	%
Cattle <i>Bos primigenius f. taurus</i>	519	40.61
Sheep/goat <i>Ovis ammon f. aries/Capra aegagrus f. hircus</i>	507	39.67
Pig <i>Sus scrofa f. domestica</i>	229	17.91
Bird <i>Aves</i>	5	0.39
Fish <i>Pisces</i>	18	1.4
TOTAL	1278	100



Tab. 2. Species participation in the assemblage from B.I.15, percentage presented in graph form

As none of the bones from this assemblage pointed to the variety of cattle bred at Dongola in the 7th century, point scales were used to compare selected osteometric values for different varieties of animals of the same species. It turned out that the cattle bones from B.I.15 originated from medium-sized individuals, representing a homogenous population. Therefore, it should be assumed that cattle breeding in Dongola in the 7th century was indigenous and stable, without cross-breeding with other varieties. A similar homogeneity of the population was observed for pig remains with no cross-breeding noted. An osteometric analysis of the small ruminants permitted their height at the withers to be calculated. Goats were 64-66 cm high, sheep 70-86 cm. Such a spread in the latter case could reflect sexual dimorphism on one hand and considerable individual differentiation on the other.

Butchering traces were noted on the bones, mainly on cattle ribs. In sheep/goat, cutting traces were also noted on the scapulas and the tibial and radial bones. In pig such evidence was observed on ribs, femorals and humeri.

DISCUSSION

Considering that the assemblage of animal bones from B.I.15 represents kitchen waste, it reflects the consumer preferences of the 7th century inhabitants of the palace at Dongola. It is to be assumed that the most frequently consumed meat was beef, mutton and perhaps also goat meat. Pork was also of some importance in the diet. It should be kept in mind, however, that the make-up of species is hardly solid

proof for breeding preferences. It can be, however, a factor to be considered in an analysis of social conditions and meat distribution within the city and palace. A large quantity of bones representing the best and most valuable parts of the dressed carcass would suggest that the slaughter of the animals and dressing of the meat took place elsewhere. The present study has demonstrated that domestic animals provided most of the meat for consumption and that beef played a significant role in the diet. As a species, cattle is more demanding in terms of fodder and more difficult to breed than sheep and goat. Considering that they are also efficient beasts of burden, as well as a source of milk and natural fertilizer, apart from meat for consumption, then the percentage of cattle bones in the assemblage is clear proof of developed husbandry in 7th century Dongola. This in turn points to easy access to pasturages. The other possibility is the high social status of palace residents, whose diet could have included more of the better and more expensive kinds of meat. It is equally viable that special herds of cattle could have been bred specifically for the needs of the palace kitchen. The high number of sheep/goat remains is not as difficult to interpret. Easily bred, these animals remain until this day the main source of meat for consumption. What is interesting is the lesser quantity of pig bones, resulting either from less stock being kept or from cultural factors. Treating pork as impure and of worse quality has been an attribute of Near Eastern and North African cultures at least since Antiquity.⁵⁾

5) H. Epstein, *The Origin of the Domestic Animals of Africa* (Leipzig 1971), esp. 332-338.

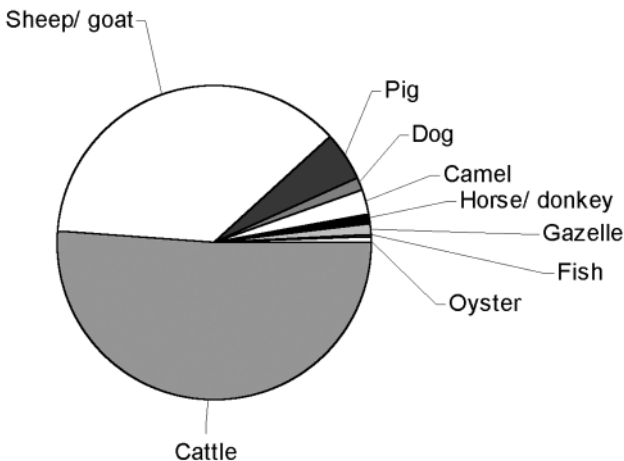
ANIMAL BONES FROM B.I.1 (13TH-14TH CENTURIES)

The greatest variety of species was noted in the osteological material studied from the main palace staircase. The bones included seven different species of mammals, as well as fish and oyster. Cattle (*Bos primigenius f. taurus*) predominated: 51%, followed by sheep/goat remains (*Ovis ammon f. aries/ Capra hircus f. aegagrus*), 37%. Next came pig (*Sus scrofa f. domestica*) 5%, camel

(*Camelus dromedarius*) 2.5%, dog (*Canis lupus f. familiaris*) 1.5%, gazelle (*Gazella*) 1%, horse or donkey 1%. One fish bone was noted and two pieces of oyster shells, which constituted 0.25% and 0.5% of the assemblage respectively (Table 3).

All the bones of the listed species were determined anatomically, but an analysis of the share of specific parts of the carcass was

SPECIES	DETERMINED FRAGMENTS	%
Cattle <i>Bos primigenius f. taurus</i>	209	50.97
Sheep/goat <i>Ovis ammon f. aries/ Capra aegagrus f. hircus</i>	153	37.31
Pig <i>Sus scrofa f. domestica</i>	20	4.87
Dog <i>Canis lupus familiaris</i>	6	1.46
Camel <i>Camelus dromedarius</i>	10	2.43
Horse/donkey <i>Equidae</i>	4	0.97
Gazelle <i>Gazella</i>	5	1.21
Fish <i>Pisces</i>	1	0.24
Oyster <i>Etheria elliptica</i>	2	0.48
OTAL	410	100



Tab. 3. Species participation in the assemblage from B.I.1, percentage presented in graph form

possible only for the small ruminants and cattle. A sizable percentage of bones from edible parts indicates that in the case of these species the remains were of a post-consumption nature.

The material from B.I.1 contained eight bones from juvenile specimens. Six came from cattle slaughtered between 12 months and 3.5 years of age. Two bones of small ruminants came from animals slaughtered one before 18 months and the other before 3.5 years of age.

Osteometric observations of cattle bones provided conclusions concerning the morphology of the species. A sizable number of skulls with the cornual processes chopped off indicated that the cattle at Old Dongola was a horned species, the horns being of large size. Such values have been noted for long-horned cattle indigenous to Africa. On the other hand, skeleton size points to medium-sized specimens. Thus, the cattle variety should be described as animals with very long

horns but with medium and even small body size.

Regarding sheep, the assemblage yielded nine examples of corkscrew-like horns growing horizontally out of the skull. The pigs from this period were small or even very small. Teeth from pigs were identified as coming from a sow in two out of three cases. The third was from a male.

Traces of processing were a characteristic attribute of the material. As many as eleven of the skulls had the horns broken off. In the other cases, the traces were all chopping marks.

While most of the cattle, sheep/goat and pig remains originating from the staircase area constituted post-consumption waste, it is important to note that the assemblage also yielded bones of animals that were "inedible", that is, camels, dogs, horses. This suggests that the fill in B.I.1 was a secondary deposit of rubbish brought here from elsewhere to be dumped.

ANIMAL BONES FROM SWN 8 (13TH-14TH CENTURIES)

The osteological material from the court in front of the palace entrance was poorer in terms of the number of species represented. Cattle (*Bos primigenius* f. *Taurus*) constituted 73% of the assemblage. The other species accounted for: sheep/goat (*Ovis ammon* f. *aries*/*Capra aegagrus* f. *hircus*) 19%, camel (*Camelus dromedarius*) 4%, horse/donkey (*Equus przewalskii* f. *caballus*/*Equus asinus*) 3%. The bones of pig and gazelle constituted no more than 1% of the set (Table 4).

In the anatomical analysis, the big number of skulls of cattle and sheep/goat is noteworthy. The post-cranial percentage in the case of these species is characteristic of post-consumption remains. Seven bones of young animals represented cattle slaugh-

tered between 15 months and 4 years of age. In terms of animal morphology, the results were identical to those discussed for B.I.1.

One bone with pathological changes was identified in the material from the courtyard. It was the jawbone of a horse or donkey with changes caused by severe inflammation resulting from the loss of a premolar.

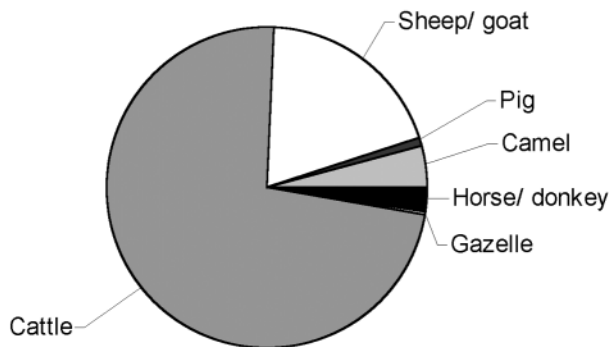
DISCUSSION

The archeozoological analysis of animal remains from the site on Kom A, the first such analysis to be conducted for Old Dongola, has contributed to our understanding of consumer meat preferences of the higher social classes in two different periods. As stated above, the meat most

commonly consumed in the 7th century was beef and mutton in practically the same quantities and some pork thrown in. Chiefly adult specimens were slaughtered, young animals being consumed only after reaching "adult" size. Seven or so centuries later, the pattern of consumption had changed with cattle becoming the chief source of meat. This is very well observable in the material from the palace courtyard, where the bones of this species predominated in the osteological assemblage. No remains of pig were discovered, this being presumably the effect of political and religious changes in the land.

All the studied remains constituted waste, yet different stages of meat processing were represented. The bones from B.I.15 were kitchen waste as indicated by the marks on bones and share of body parts. The remains from B.I.1 and SWN 8 were what was left after the butchering of carcasses, when the animal was skinned, the non-edible parts chopped off and the meat dressed. The presence of such rubbish on palace grounds should be deemed evidence of a sudden rise in demand for large quantities of meat (war, garrisoned troops etc). One should also take into consideration pauperization of the palace and its increasingly domestic character.

SPECIES	DETERMINED FRAGMENTS	%
Cattle <i>Bos primigenius f. taurus</i>	402	73.09
Sheep/goat <i>Ovis ammon f. aries/Capra aegagrus f. bircus</i>	105	19.09
Pig <i>Sus scrofa f. domestica</i>	4	0.72
Camel <i>Camelus dromedarius</i>	23	4.18
Horse/donkey <i>Equidae</i>	15	2.72
Gazelle <i>Gazella</i>	1	0.18
TOTAL	550	100



Tab. 4. Species participation in the assemblage from SWN.8, percentage presented in graph form

The excellent preservation of the animal bones from Kom A, their quantity and the good stratigraphical and chronological site evidence have also added to our knowledge of animal breeding populations. It may be assumed that the least changes occurred in cattle morphology, the species demonstrating the same attributes tirelessly from Antiquity into the Modern Age.

Of considerable importance is the study of the sheep population. The horizontal corkscrew-like horn variety recognized in the material from Kom A is no longer present in North Africa. It was common in Egypt in Antiquity and was still to be encountered in Dongola in the 14th century to judge by our research. The third

source of meat, pig, had been eliminated presumably for religious reasons. Obviously, pork disappeared from the aristocratic table quite early.

The data from archeozoological research has helped to understand various aspects of the life of the inhabitants of the Makurian capital, diet and the role of meat in it being an important element. The study has also contributed to our knowledge of stock breeding and the animal population over 700 years of the occupation of the palace. It should be kept in mind that these findings are of a provisional nature, to be confirmed and verified by future archeozoological investigations carried out in Dongola and in the territory of the Kingdom of Makuria in general.