

FAUNAL REMAINS FROM THE BANGANARTI CHURCH

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Faunal material originated from all areas of the Banganarti church site and from all levels. In total, 1234 animal bone fragments were analyzed. Most of this was post-consumption waste, but non-consumption

pieces were also noted. Destructive causes other than human consumption included depositional factors, the main reason for bone fragility being considerable collagen loss due to a hot dry climate.

RESEARCH METHODS

Bones were studied for species and anatomical identification, as well as sex and age, wherever diagnostic attributes allowed. Statistical analyses were carried out concerning species, anatomy and age of the animals, and complete bones were subjected to osteometrical measurements for the purpose of animal morphology studies. The bones were also examined for pathological changes, consumption and tool marks.¹⁾

To facilitate analysis and interpretation, the fragments were divided into three groups depending on their find context: *Group I* (6th-first half of 10th century) from the Lower Church and layers below the floor of Upper Church; *Group II* (10th-13th century) from Upper Church (layers between floor and remains of collapsed vault); *Group III* (13th-c. 18th century), squatter occupation within the partly ruined church through all later layers to ground surface.

EXAMINATION RESULTS

Remains of mammals, birds, fish and oysters were recognized in all three groups, mammals being the most widely represented. Bird and oyster remains were much less in evidence. Material identified anatomically and to species comprised 84.11% of the total recovered. The bones of small ruminants, sheep and goat, constituted practically half the sample (52.90%). The remaining domesticated

mammal species appeared in much smaller quantities. The most frequent wild mammals were bat (2.30%), gazelle (2/30%) and rodents (0.70%). The remaining material represented birds, fish and oyster (less than 6% of the total).

ANATOMY

The anatomical distribution of the remains of sheep, goat and cattle, the three most

1) Detailed results including charts and osteometrical measurements will be published in the final report.

frequently represented consumption species at Banganarti, followed a similar pattern, but with observable differences. While all the skeletal parts were represented, the relative proportions of body parts for the small ruminants were typical of consumption waste. The trunk and proximal parts of chest and back limbs, body parts attractive from the point of view of consumption, predominated over the distal parts of limbs, finger segments and skull. For cattle, crania were the most frequent, followed by trunk and femural parts. Relatively few upper forelegs, also attractive nutritionally, were noted, and the same was true of distal-leg fragments and finger segments. The most frequently noted pig remains came from the upper forelegs, thorax and skull. Proximal parts of back limbs, distal parts of back limbs and finger segments appeared in smaller quantities, thus representing a full anatomical distribution despite the limited number of remains.

ANIMAL AGE

Few morphologically immature animal remains were identified. Among the small ruminants (3.64% of the total), seven bones were aged less than 15-20 months,

six less than 3.5 years, five less than 20-24 months old, one between 3-3.5 years and the last less than seven months old. Five of eight cattle bones (3% of the total) identified as morphologically immature were less than 3.5-4 years, and four less than two years old. Six pig bone fragments were recognized as belonging to immature individuals, but only one could be aged at 3.5 years. A single bone of a dog less than 18 months old was observed as well.

MORPHOLOGY

Osteometrical measurements were taken from 51 bone fragments, of which 31 were of sheep and goats, 14 of cattle, one of pig, and one of dog. The withers height of six sheep bones constituted 54.72 cm, 56.29 cm, 61.61 cm, 61.61 cm, 64.98 cm and 75.24 cm. Three goat horn fragments and two cattle horns were recognized, of which one of the latter measured 24 cm.

TRACES OF USE

No evidence of tooling was found on the material from Banganarti, but consumption marks – chopping filleting and burning – were identified on sheep/goat and cattle bones (10 and 8 respectively).

FAUNAL ANALYSIS

Analyses of the faunal material by stratigraphic groups, as described above, revealed that the four most frequently represented domesticated species (sheep, goat, cattle, pig) occurred in similar proportions in all three groups (*Table 1, Fig. 1*). Sheep and goat were clearly the most frequent, repeatedly exceeding in quantity the bones of other species. Both remain the most popular and most frequently bred domesticated species in Nubia and northern Sudan, due to their

reasonable fodder requirements, easy breeding and adaptation to the difficult climate. Sheep are bred for their meat, wool and hide, whilst goats are mostly producers of milk and secondarily of meat. This would not have altered much from earlier periods in terms of proportions. Meat-oriented animal husbandry of small ruminants was extensive, too, compared to the percentage of young representatives of other species amongst the remains. Slaughter marks on the bones of relatively

young individuals indicate consumption purposes. The age at death was both very young and up to three years of age, when the animals would have reached adult size.

Sheep horns were not recovered from amongst the Banganarti material, suggesting that this species may have been hornless. Sheep withers height ranged between 56 and 64 cm, with one at 75 cm. The morphological attributes of sheep from the Banganarti assemblage compare to measurement taken by the author of animals bred today in the vicinity of the site and classified as the Sudan Desert type. Not much can be said about the morphology of goats from the Banganarti site beyond the fact that they were probably of a horned variety.

Cattle remains constituted the next most common group, indicating that they were bred in the Banganarti region. Interestingly, the quantity of head remains far exceeded that of the other body parts. This could be due to culinary preference, brains being considered a delicacy. The presence of skull bones as well as finger elements indicate on-site slaughtering and carving of the carcasses. The largest quantity of head bone and most of the finger segments were noted in material classified as Group III, that is, from the period after the building ceased to function in the religious sense. The same is true of the small ruminants, where all finger segments were found with material from the later phases. Osseous remains from Group II included a disproportionately large quantity of cranial bones compared to

other body parts. The proportions of the remains from Group I, of cattle as well as the small ruminants, were typically post-consumption.

Compared to small ruminants, slightly fewer (3%) cattle bones were noted as coming from morphologically immature individuals (2-to-4 years of age), although all came from adult-size individuals. Indeed, very young animals were not observed. This again indicates utilitarian breeding for consumption purposes.²⁾

Only two cattle horns were noted. The one measured basal circumference points to a primigenic cattle type. The small quantity of horns can suggest similarity with modern husbandry in the region, where hornless females and bulls with very small horns are preferred. Unfortunately, none of the measured bones was suitable for calculating animal height.

Pig was the third most common species in the material from all three chronological groups, bone distribution pointing univocally to breeding for consumption. The species is virtually absent in modern Nubian animal husbandry, but it has been noted in the Dongola period levels, and it also likely that the local village population persisted in traditional pig breeding and pork consumption during the Islamic period.³⁾ Today in Sudan pigs are not bred by Muslims.

The following three domestic animal species were typically found in minimum quantities, since they were not regularly consumed. Sixteen fragments of horse or

2) Cattle in this region have always been used mainly in agriculture, but were also the main provider of manure widely used in architecture, the Banganarti church not excluded, as a component of *muna* (mortar). Cattle now are little bred in the region.

3) Pigs were apparently popular in Nubia before the invasion of Shah Turan, the older brother of Saladin, in 1173 and the sources state that invaders killed 700 pigs in Ibrim following its conquest (after E.W.A. Budge, *A History of Ethiopia, Nubia and Abyssinia* (London 1928)). The animals were also popularly believed to protect horses and donkeys from disease (G. Schweinfurth, *The Heart of Africa* (London 1874)).

BANGANARTI

SUDAN

SPECIES	Determined fragments	Percentage %
GROUP I		
Sheep/goat (<i>Ovis ammon f. aries/Capra aegagrus f. hircus</i>)	71	59.66%
Cattle (<i>Bos taurus primigenius</i>)	33	27.73%
Pig (<i>Sus scrofa f. domestica</i>)	7	5.88%
Camel (<i>Camelus dromedaries</i>)	1	0.84%
Horse/donkey (<i>Equidae</i>)	1	0.84%
Rodent (<i>Rodentia</i>)	1	0.84%
Birds (<i>Aves</i>)	1	0.84%
Oyster (<i>Etheria elliptica</i>)	4	3.36%
TOTAL	119	100%
GROUP II		
Sheep/goat (<i>Ovis ammon f. aries/Capra aegagrus f. hircus</i>)	237	57.52%
Cattle (<i>Bos taurus primigenius</i>)	106	25.72%
Pig (<i>Sus scrofa f. domestica</i>)	15	3.64%
Dog (<i>Canis lupus f. familiaris</i>)	3	0.72%
Camel (<i>Camelus dromedaries</i>)	8	1.94%
Horse/donkey (<i>Equidae</i>)	4	0.97%
Gazelle (<i>Gazella</i>)	9	2.18%
Rodent (<i>Rodent</i>)	7	1.7%
Birds (<i>Aves</i>)	7	1.7%
Fish (<i>Pisces</i>)	3	0.72%
Oyster (<i>Etheria elliptica</i>)	12	2.91%
Snail cauri (<i>Cypraea moneta</i>)	1	0.24%
TOTAL	412	100%
GROUP III		
Sheep/goat (<i>Ovis ammon f. aries/Capra aegagrus f. hircus</i>)	241	49.89%
Cattle (<i>Bos taurus primigenius</i>)	125	25.87%
Pig (<i>Sus scrofa f. domestica</i>)	15	3.1%
Dog (<i>Canis lupus f. familiaris</i>)	15	3.1%
Horse/donkey (<i>Equidae</i>)	11	2.27%
Camel (<i>Camelus dromedaries</i>)	25	5.17%
Gazelle (<i>Gazella</i>)	15	3.1%
Ichneumon (<i>Mungos ichneumon</i>)	3	0.62%
Birds (<i>Aves</i>)	20	4.14%
Fish (<i>Pisces</i>)	3	0.62%
Oyster (<i>Etheria elliptica</i>)	8	1.65%
Snail cauri (<i>Cypraea moneta</i>)	2	0.41%
TOTAL	483	100%

Table 1: Species participation in the material from Banganarti Church, presented by stratigraphical groups.

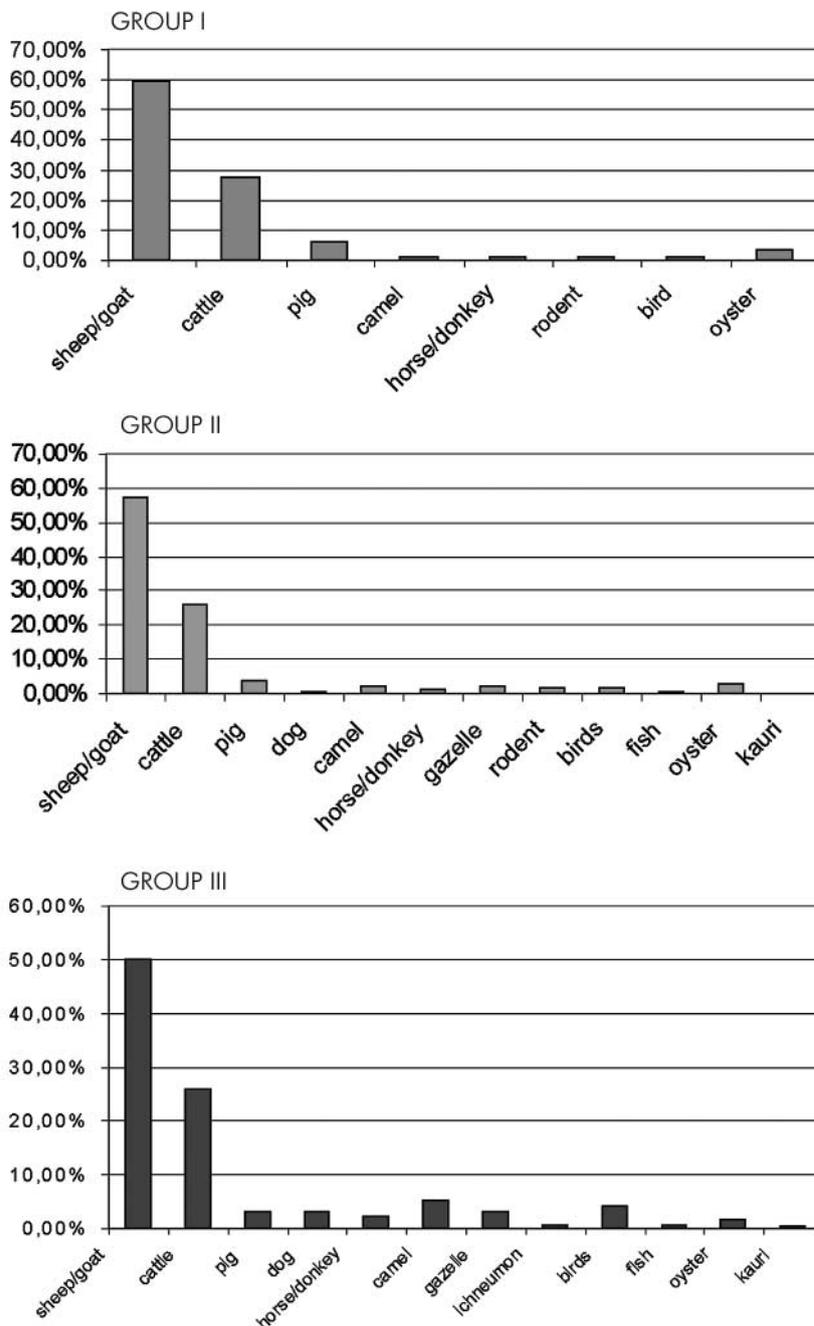


Fig. 1. Species participation in the material from Banganarti Church, percentages represented in graph form.

donkey were recognized, mostly in Group III. No evidence of consumption was noted, but since all the remains came from edible parts, cooking is not excluded. Nonetheless, dogs could have dragged fragments of carcasses to the spot. Camel and dog remains occurred in smaller quantities and most likely were carcass remains as well. The single dog bone came from a medium-sized animal (32 cm at the withers).

The remaining species represent wild animals (only 7.7% of the total), although their occurrence is strongly related to human activity. They are mostly birds, including one example of a predator bird from room 1 of the western annex. Also noted were small fragments of rodent bones discarded by birds. Ostrich eggshell fragments frequent on Dongola-period sites are undoubtedly post-consumption remains.⁴⁾ Also noted were the remains of gazelle, which is still hunted today in the vicinity of the site. These are most likely the remains of *Gazella dorcas* and *Gazella thomsoni*, both species recognized in the Dongola-period material from Old Dongola.⁵⁾ The remains of at least seven bats, completeness indicating carcasses, were noted in one of the vaulted rooms of Annex W. Also identified was an ichneumon, still

known to inhabit the region and regarded by the local population as a poultry-killer.

The most numerous among recorded mollusks were oyster shells (*Etheria elliptica*). Although fragmentary, some shells were of quite a large size.⁶⁾ Oysters have been eaten since prehistoric times, the meat being as nutritious as mammal meat in terms of the glycogen content.

Interestingly, a complete *Aspatharia rubens* shell was identified from a layer below the latest (brick) floor of the church (Group II). The mollusk lives in rivers and buries itself in mud near the seasonal water reservoirs in the dry season. Its presence intimates that such food was collected, either for animals (pigs?) or for people.

Kauri shells, of which three fragments were found (Groups II and III), were used in northern Africa as elements of decorated dress or as a form of coinage, from antiquity until modern times.

Rodents were recognized in the Group I and Group II assemblages, and in fact are considerably more frequent than the inventory would suggest.

Fish remains were not numerous, but were recovered in two of the faunal groups (Group II and Group III). The majority were derma shields and large ribs.

CONCLUSIONS

The analysis of faunal material from the Baganarti churches, dated to the Dongola period, provides evidence for breed preferences, consumption practices and economic status, as well as the nature of the ecosystem and changes in the immediate vicinity of the site.

In the Dongola period, before the raising of the 'Upper Church', faunal remains were of post-consumption character, consisting of cattle, pigs and, chiefly, small ruminants (Group I). They must have been brought to the site from the immediate vicinity for use by the

4) Ostriches are not found today in the region.

5) Unpublished report by A. Lasota-Moskalewska in the Dongola mission archives.

6) Separated shells were used as spoons in the Dongola period (B. Żurawski, personal information).

workers building the church. The analysis confirms the presence of an organized and permanent human settlement, producing kitchen garbage later deposited indirectly as construction material.

Most of the faunal remains from Group II derive from the later phases of the functioning of the 'Upper Church', when the building served as a church and particular rooms seem to have been used as living quarters. Indeed, post-consumption waste had not been expected in such quantity from these layers in view of the sacral character of the building.

The latest remains (Group III) indicate that the ruins served as a periodic shelter and animal enclosures and indeed the site

seems to have served the local villagers as a dump until very recently. Slaughtering and butchering is in evidence, and dogs and other animals must have dragged animal carcasses to the site as well.

Animal husbandry in the area has not changed fundamentally from the Dongola period. Sheep and goats are still the most commonly bred species, preferred for their meat and milk, while cattle were bred not only for their meat but also as draught animals, their manure being utilized for both agricultural and architectural purposes. Pigs were bred in the Dongola period, and most probably even later, although today cultural factors have eliminated this practice.