Nadine Nolde

The animal bones from trench 224.14 in the 'pottery courtyard' of the Great Enclosure in Musawwarat es-Sufra

The 2014 excavation of trench 224.14 provided a sample of 484 animal bones and teeth (425 g).[1] Many of them are highly fragmented and weathered. The bones were analysed in the osteological collection in the Forschungsstelle Afrika, Institute of Prehistoric Archaeology in the University of Cologne.

The number of identified species (NISP) amounts to only 48 fragments, but in respect to the total weight of bone it becomes apparent that the ratio of undeterminable bones only accounts for half of the total weight. This indicates that the unidentified fragments are considerably splintered and therefore lighter than the identified. However, the NISP is too small for statistical analysis (fig. 1). As such the raw data merely allows a qualitative evaluation.

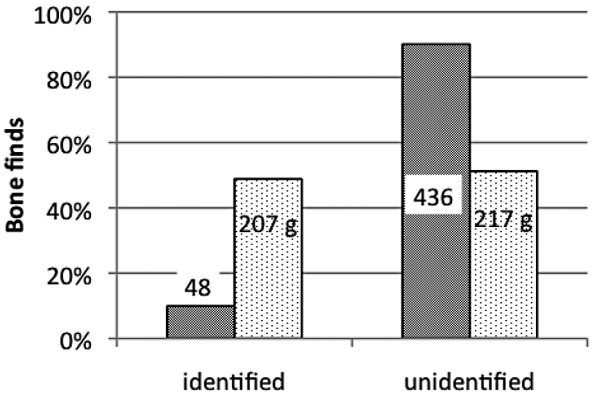

Fig. 1: Ratio (NISP) and weight (g) of identified and unidentified animal bones from trench 224.14

With the exception of a bird long bone, the material contains solely mammals, 42 pieces of them belonging to domestic taxa. Bones of bovine (*Bos taurus*) and sheep (*Ovis aries*) or Goat (*Capra hircus*) are the most frequent (tab. 1). With only one tooth fragment equids are rarely represented. The gazelle is the only wild animal in the faunal material. Since it is not possible to make a morphological distinction between the dorcas gazelle (*Gazella dorcas*) and the Dune-gazelle (*Gazella leptoceros*) from this assemblage, the identification of the bones is limited to *Gazella sp*. in this case.

	NISP	Weight (g)
Cattle (*Bos taurus*)	22	151.8
Sheep (*Ovis aries*)	1	1.9
Sheep/Goat (*Ovis aries/Capra hircus*)	18	32.9
Gazelle (Gazella sp.)	3	2.2
Equid (Equidae)	1	7.2
Human (*Homo sapiens s.*)	2	11.4
Bird, unidentified (Aves ind.)	1	0.4
Total	**48**	**207.8**

Tab. 1: Distribution of species

Unexpectedly, human remains, probably in a secondary context, brought in secondary, are represented by two cranial fragments of at least one individual, though these pieces dit not fit together.[2]

Cattle (*Bos taurus*)

With 22 bones, cattle is the most abundant animal in the analysed assemblage (tab. 2).[3]

Different stages of epiphyseal line fusion and size dimension indicate the presence of one foetal cattle and one adult individual at the very least. Of the foetal cattle, there is a left femur, a right and left radius, and a left ulna revealing an age between 250

1 For the archaeological context see Näser and Wetendorf, this volume.

2 These pieces were registered under find no. 224.14-002-053; they derive from the middle layer of the ash deposit; cf. Näser and Wetendorf, this volume.

3 An atlas and a metacarpus come from contexts 224.14-001 and 224.14-015 respectively. All other pieces derive from the main ash deposit. For the archaeological contexts see Näser and Wetendorf, this volume.

Cattle bones	NISP	Weight (g)
Cranium (Pars petrosa)	1	7.4
Mandibula	1	1.5
Deciduous tooth	1	3.9
Tooth fragment	2	8.6
Atlas	1	3.2
Epistropheus	1	2.8
Cervical vertebra	1	4.9
Costa	4	17.3
Scapula	1	2.8
Radius	3	27.6
Ulna	1	2.9
Metacarpus	1	13.2
Metatarsus	1	23.8
Phalanx 1 a/p	2	11.1
Total	**22**	**151.8**

Tab. 2: Distribution of bovine bones over the skeleton

and 260 days after conception[4] (fig. 2). The left ulna and the left radius are part of one individual. Due to the fact that all of the foetal bones origin from the main ash deposit it is probable, that in addition to the left ulna and radius also the femur and the right radius belong to the same individual. Because of the strong fragmentation, an anatomical measurement of the bovine bones was not feasible. Therefore, estimation about body size and growth habit based on the metric level is not possible; however, the bones seem to originate from small animals.

In spite of the high fragmentation, cut or chop marks could not be observed on any of the pieces. This could be due to the poor preservation of the bone surface rather than to an absence of marks. The assemblage of bones demonstrates no preference of certain skeletal regions with bones coming from various parts of the skeleton.

In waste deposits typical for consumption, a higher proportion of leftovers, such as portioned ribs, vertebras and crushed bones from the meat-rich extremities would be expected. Kitchen waste, which consists of non-recoverable remains of bones and waste from the preparation of meals including bones from skulls, hands or feet, would also be a part of such deposits. The non-specific distribution pattern present in the analysed material suggests a mixed waste disposal from different contexts, which can range from food and kitchen waste to useless offal.

The metacarpus from find context no. 224.14-015 and eight fragments from the main ash deposit (three ribs and a first phalanx) show traces caused by contact with fire. Four of the bones from the deposit are grey-white coloured, sometimes still with black or gray carbonisation from the compacta. These patterns occur when fire reaches a temperature of approximately 550°C.[5] The metacarpus and four further burned fragments (two tooth fragments, a rib and a cervical vertebra) are completely calcined and were exposed to temperatures in excess of 700°C. It is possible that people threw some of their waste, be it the offcuts from meat preparation or leftovers from meals, into the fire which was used for pottery production.

Sheep (*Ovis aries*) and goat (*Capra hircus*)

The small domestic ruminants are represented by 19 bone finds (tab. 3).[6] Due to the close morphological similarity of sheep and goat, only a right lower jaw fragment could be identified as being from a sheep.[7] The remaining 18 fragments give no hints for precise information on the species. The size and growth habit of six bones from this group also offer the possibility of belonging to a gazelle species.

Bones of small ruminants	NISP	Weight (g)
Cranium	3	5.3
Mandibula	3	4.7
Thoracic Vertebra	2	2.2
Costa	4	2.9
Scapula	1	1.1
Radius	1	1.1
Coxa	1	1.5
Femur	3	14.1
Metatarsus	1	2.0
Total	**19**	**34.8**

Tab. 3: Distribution of bones from small ruminants over the skeleton

4 Habermehl 1975: 65. Based upon the data of Regli 1963 and Bünger 1972.

5 Wahl 1981: 273.

6 One rib fragment comes from context 224.14-005; all other pieces are from the main ash deposit.

7 Halstead and Collins 2002.

Fig. 2: Bones of the foetal cattle: left femur, left ulna, left and right radius.

An assessment of the individual age was only possible in one femur. At time of death the proximal epiphyseal line was still unfused, which indicates an age less than three or three and a half years. Similarly to the bovine bones there is neither overrepresentation of skeletal regions nor visible traces of slaughtering, but ten of the small domestic ruminant bones show influence of fire activity. There is the possibility that after a meal these were disposed of in the fire used for pottery production.

Equid (*Equus caballus* or *Equus asinus*)

Only one lower first premolar belongs to an equid.[8] Due to the poor preservation of the tooth an exact determination is impossible; the fragment could originate either from a donkey or a small horse.

Gazelle (*Gazella sp.*)

The gazelle is represented by bones of one right pelvis, one skull fragment (orbital surface of zygomatic bone) and one fragment from a charred sacrum of at least one individual.

Unidentified bird (*Aves ind.*)

One small fragment of a long bone points to a bird, which is about the size of a chicken. However, neither bone nor the species could be determined in this case.

Human (*Homo sapiens*)

Homo is represented by two fragments from the parietal region of the skull (fig. 3).[9] Although both pieces are from the same region of the cranium, they could not be joined to each other. Therefore it is disputable whether they come from the same or two different individuals.

8 This piece comes from context 224.14-005.

9 For the provenance of these fragments see above note 2.

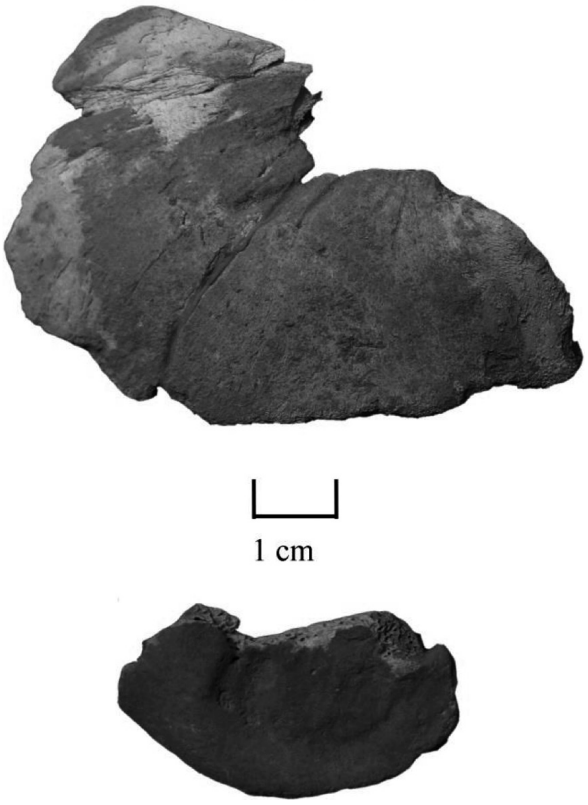

Fig. 3: Cranium fragments of homo.

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Zusammenfassung

Die Analyse von 484, zum Teil stark fragmentierten und verwitterten, Tierknochen aus dem ‘pottery courtyard’ in Musawwarat es-Sufra ermöglichte die Bestimmung von 22 Rinder-, 19 Ovicapriden-, drei Gazellenknochen, einem Equidenzahn und einem nicht näher bestimmbaren Knochen eines hühnergroßen Vogels. Überraschenderweise traten auch zwei Schädelfragmente von mindestens einem Menschen zu Tage, die möglicherweise aus einem sekundären Kontext in den Befund gelangten. Die heterogene Verteilung der Tierknochenfunde über das Skelett lässt auf ein gemischtes Spektrum aus Schlacht-, Küchen- und Speiseabfällen schließen; auffällig war ein relativ großer Anteil verbrannter und kalzinierter Knochen, die möglicherweise zur Entsorgung in das Feuer für die Keramikproduktion geworfen wurde.

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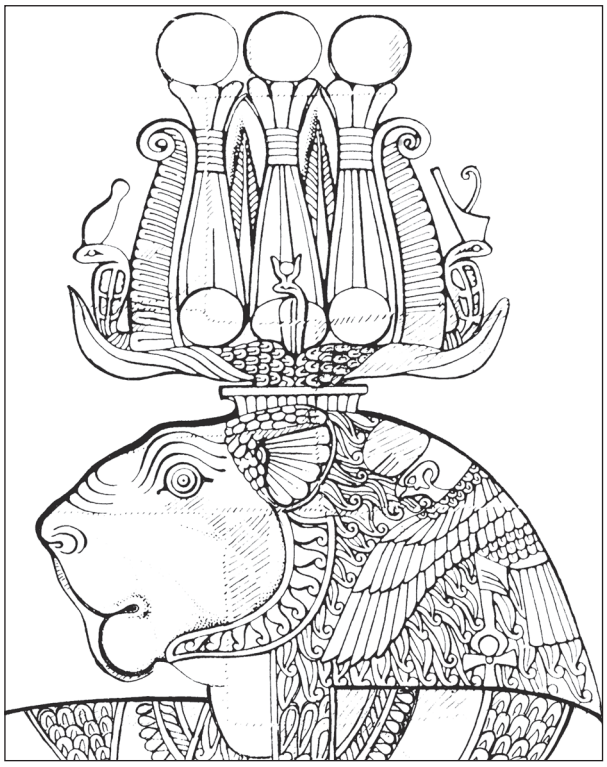

Heft 25
2014

Herausgeber: Sudanarchäologische Gesellschaft zu Berlin e.V.
c/o Humboldt-Universität zu Berlin
Institut für Archäologie – Lehrbereich Ägyptologie und Archäologie Nordostafrikas
Unter den Linden 6 • 10099 Berlin

Verantwortlich für die Herausgabe: Angelika Lohwasser

Layout & Satz: Frank Joachim

Erscheinungsort: Berlin

Internetpräsenz: www.sag-online.de

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Bankverbindung der SAG: Deutsche Bank 24 AG
BLZ 100-700-24 BIC DEUTDEDBBER
Kto.-Nr. 055-55-08 IBAN DE36100700240055550800

Die Zeitschrift Der Antike Sudan (MittSAG) erscheint einmal im Jahr und wird an die Mitglieder der Sudanarchäologischen Gesellschaft kostenlos abgegeben. Preis pro Heft: 19,50 Euro + Versandkosten.

Sudanarchäologische Gesellschaft zu Berlin e.V.

Angesichts der Tatsache, daß die globalen wirtschaftlichen, ökonomischen und politischen Probleme auch zu einer Gefährdung der kulturellen Hinterlassenschaften in aller Welt führen, ist es dringend geboten, gemeinsame Anstrengungen zu unternehmen, das der gesamten Menschheit gehörende Kulturerbe für künftige Generationen zu bewahren. Eine wesentliche Rolle bei dieser Aufgabe kommt der Archäologie zu. Ihre vornehmste Verpflichtung muß sie in der heutigen Zeit darin sehen, bedrohte Kulturdenkmäler zu pflegen und für ihre Erhaltung zu wirken.

Die Sudanarchäologische Gesellschaft zu Berlin e.V. setzt sich besonders für den Erhalt des Ensembles von Sakralbauten aus meroitischer Zeit in Musawwarat es Sufra/Sudan ein, indem sie konservatorische Arbeiten unterstützt, archäologische Ausgrabungen fördert sowie Dokumentation und Publikation der Altertümer von Musawwarat ermöglicht. Wenn die Arbeit der Sudanarchäologischen Gesellschaft zu Berlin Ihr Interesse geweckt hat und Sie bei uns mitarbeiten möchten, werden Sie Mitglied! Wir sind aber auch für jede andere Unterstützung dankbar. Wir freuen uns über Ihr Interesse!

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ISSN 0945-9502

Der antike Sudan. Mitteilungen der Sudanarchäologischen Gesellschaft zu Berlin e.V.

Kurzcode: MittSAG

Heft 25 • 2014