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**Title:** Animal remains from the Early Makurian cemetery in El-Zuma (season 2013).

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**Journal:** *Polish Archaeology in the Mediterranean* 24/1 (Research)

**Year:** 2015

**Pages:** 425 - 430

**ISSN** 1234–5415 (Print), ISSN 2083–537X (Online)

**Publisher:** Polish Centre of Mediterranean Archaeology, University of Warsaw (PCMA UW),  
Wydawnictwa Uniwersytetu Warszawskiego (WUW)

[www.pcma.uw.edu.pl](http://www.pcma.uw.edu.pl) [www.wuw.edu.pl](http://www.wuw.edu.pl)

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**Abstract:** Excavation in 2013 of two tumuli, T.15 and T.21, making up part of the Early Makurian cemetery at El-Zuma, yielded numerous animal bones among other finds. The total from T.15 was a set of 1404 fragmentary bones belonging (with the exception of 653 that could not be identified due to the poor state of preservation) to cattle and ovicaprids. The remains came from the shaft, the burial chamber and two lateral chambers. The number of bones from T.21 was much smaller, restricted to 78 fragments, coming mostly from the burial chamber. Except for one bird bone and seven unidentified fragments, the remains belonged to an ovicaprid. Marks visible on the bones from both tumuli confirmed that the parts of cattle and ovicaprine carcasses served as food offerings for the dead.

**Keywords:** animal bones, Early Makuria, El-Zuma, offering deposits, cattle/ovicaprid

البقايا الحيوانية من مقبرة المقررة المبكرة في الزومة ( موسم 2013 )  
Urszula Iwaszczuk

**الملخص:** الحفريات في 2013 في إثنين من المدافن (*T.21* و *15.T*) تشكل جزءاً من مقبرة المقررة المبكرة في الزومة، كشفت عن العديد من عظام الحيوانات بين الإكتشافات الأخرى المجموع من *15.T* كان مجموعة من 1404 من شظايا العظام تنتمي ( باستثناء 653 التي لا يمكن تحديد نوعها لسوء حالة الحفظ ) للمواشي والأغنام والماعز و البقايا جاءت من بئر الدفن و حجرة الدفن وحجرتين جانبيتين . إن عدد العظام من المدفن *T.21* أقل ومحدود حوالي وهي حوالي 78 شظية معظمها قد جاء من حجرة الدفن بإستثناء عظام طير واحد وسبعة شظايا غير معروفة، ومعظم البقايا تعود للأغنام والماعز . إن العلامات المرئية على العظام من كلا المدفنين تؤكد على أن جزء من الماشية والأغنام والماعز المذبوحة قدمت كقرابين للموتى .

*POLISH ARCHAEOLOGY IN THE MEDITERRANEAN (PAM)*  
*Annual of the Polish Centre of Mediterranean Archaeology, University of Warsaw*

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# POLISH ARCHAEOLOGY IN THE MEDITERRANEAN

XXIV/1

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RESEARCH



## ABBREVIATIONS

<i>AA</i>	<i>Archäologischer Anzeiger; Jahrbuch des Deutschen Archäologischen Instituts</i> (Berlin)
<i>ANM</i>	<i>Archéologie du Nil Moyen</i> (Lille)
<i>ASAE</i>	<i>Annales du Service des Antiquités de l'Égypte</i> (Cairo)
<i>AV</i>	<i>Archäologische Veröffentlichungen, Deutsches Archäologisches Institut, Abteilung Kairo</i> (Berlin–Mainz am Rhein)
<i>BAAL</i>	<i>Bulletin d'archéologie et d'architecture libanaises</i> (Beirut)
<i>BAH</i>	<i>Bibliothèque archéologique et historique</i> (Paris)
<i>BAR IS</i>	<i>British Archaeology Reports International Series</i> (Oxford)
<i>BASOR</i>	<i>Bulletin of the American Schools of Oriental Research</i> (Ann Arbor, MI)
<i>BCH</i>	<i>Bulletin de correspondance hellénique</i> (Paris)
<i>BdE</i>	<i>Bibliothèque d'étude</i> (Cairo)
<i>BIFAO</i>	<i>Bulletin de l'Institut français d'archéologie orientale</i> (Cairo)
<i>BSAA</i>	<i>Bulletin de la Société d'archéologie d'Alexandrie</i> (Cairo)
<i>BSFE</i>	<i>Bulletin de la Société française d'égyptologie</i> (Paris)
<i>CCE</i>	<i>Cahiers de la céramique égyptienne</i> (Cairo)
<i>EtTrav</i>	<i>Études et travaux. Travaux du Centre d'archéologie méditerranéenne de l'Académie des sciences polonaise</i> (Warsaw)
<i>FIFAO</i>	<i>Fouilles de l'Institut français d'archéologie orientale</i> (Cairo)
<i>GAMAR</i>	<i>Gdańsk Archaeological Museum African Reports</i> (Gdańsk)
<i>GM</i>	<i>Göttinger Miszellen</i> (Göttingen)
<i>IAMS</i>	<i>Institute of Archaeo-Metallurgical Studies</i> (London)
<i>JARCE</i>	<i>Journal of the American Research Center in Egypt</i> (Boston–Princeton–New York–Cairo)
<i>JEA</i>	<i>Journal of Egyptian Archaeology</i> (London)
<i>JGS</i>	<i>Journal of Glass Studies</i> (Corning, NY)
<i>JJP</i>	<i>Journal of Juristic Papyrology</i> (Warsaw)
<i>JRS</i>	<i>Journal of Roman Studies</i> (London)
<i>MDAIK</i>	<i>Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo</i> (Wiesbaden)
<i>OIP</i>	<i>Oriental Institute Publications</i> (Chicago)
<i>OLA</i>	<i>Orientalia lovaniensia analecta</i> (Louvain)
<i>PAM</i>	<i>Polish Archaeology in the Mediterranean</i> (Warsaw)
<i>PSAS</i>	<i>Proceedings of the Seminar for Arabian Studies</i> (London)
<i>SAAC</i>	<i>Studies in Ancient Art and Civilisation</i> (Kraków)
<i>SAK</i>	<i>Studien zur altägyptischen Kultur</i> (Hamburg)
<i>SAOC</i>	<i>Studies in Ancient Oriental Civilization</i> (Chicago)
<i>WVDOG</i>	<i>Wissenschaftliche Veröffentlichungen der deutschen Orient-Gesellschaft</i> (Berlin–Leipzig)

# ANIMAL REMAINS FROM THE EARLY MAKURIAN CEMETERY IN EL-ZUMA (SEASON 2013)

Urszula Iwaszczuk

Polish Centre of Mediterranean Archaeology, University of Warsaw

**Abstract:** Excavation in 2013 of two tumuli, T.15 and T.21, making up part of the Early Makurian cemetery at El-Zuma, yielded numerous animal bones among other finds. The total from T.15 was a set of 1404 fragmentary bones belonging (with the exception of 653 that could not be identified due to the poor state of preservation) to cattle and ovicaprids. The remains came from the shaft, the burial chamber and two lateral chambers. The number of bones from T.21 was much smaller, restricted to 78 fragments, coming mostly from the burial chamber. Except for one bird bone and seven unidentified fragments, the remains belonged to an ovicaprid. Marks visible on the bones from both tumuli confirmed that the parts of cattle and ovicaprine carcasses served as food offerings for the dead.

**Keywords:** animal bones, Early Makuria, El-Zuma, offering deposits, cattle/ovicaprid

Numerous animal bone assemblages have been recovered from the cemetery at El-Zuma in Sudan. The site is dated to Phase II of the Early Makurian period in ancient Nubia (AD 450–550) (El-Tayeb 2012: 61–70). Tumuli T.15 and T.21 were investigated in 2013. The graves represented different construction types. T.15 was of type II as described by Mahmoud El-Tayeb (2005: 390–391) and consisted of the main burial chamber, two lateral chambers and a U-shaped shaft. Animal

bones were discovered in all these contexts. Traces of looting were observable only in the main burial chamber and a part of the shaft; the rest of the grave appeared not to be disturbed. T.21 was of type III (El-Tayeb 2005: 390–391) with a rectangular shaft and burial chamber in its southern part. Almost all the animal bones were found in the burial chamber. The grave had been plundered. The aim of this report is to present the results of analysis carried out on animal bones from both these tumuli.

## MATERIALS AND METHODS

The bone material consisted of 1482 fragments. Most of the bones were in a poor state of preservation. The unfavorable soil and climate conditions caused

decalcification of the remains and their disintegration into small pieces. Some of the fragments were also weathered and very fragile.

The bone material was identified anatomically and zoologically. It was impossible to identify all of the ovicaprine remains as to species, but some of them were identified by standard methods (Schramm 1967; Zeder and Lapham 2010;

Zeder and Pilaar 2010). The age of some cattle and sheep individuals was estimated on the basis of diaphysis and epiphysis fusion (Kolda 1936). Cattle bones were measured according to the unified von den Driesch method (von den Driesch 1976).

Table 1. Some measurements of cattle bones from T.15 (in millimeters)

	GLl	GLm	Bd	GLP	LG	SLC
Scapula	–	–	–	71.3	63.5	64.8
Tibia	–	–	64.2	–	–	–
Talus	70.2	–	46	–	–	–
	69.1	60	46.2	–	–	–

GLl – greatest length of the lateral half, GLm – greatest length of the medial half, Bd – greatest breadth of the distal end, GLP – greatest length of the glenoid process, LG – length of the glenoid cavity, SLC – smallest length of the neck of the scapula

Table 2. Number of identified bone fragments from tumuli T.15 (this page, continued on opposite page) and T.21 (opposite page); NISP = not identified to species

	T.15											
	Chamber 1				Chamber 2				Chamber 3			
	Cattle		Sheep		Cattle		Sheep/goat		Sheep		Sheep/goat	
	NISP	No. bones	NISP	No. bones	NISP	No. bones	NISP	No. bones	NISP	No. bones	NISP	No. bones
Cranium	–	–	–	–	–	–	–	–	–	–	–	–
Maxilla	–	–	–	–	–	–	–	–	–	–	–	–
Sternum	–	–	–	–	–	–	–	–	–	–	–	–
Costae	31	2	–	–	138	5	14	3	–	–	23	3
Vertebrae	–	–	–	–	–	–	–	–	–	–	10	3
Scapula	–	–	–	–	181	1	–	–	–	–	–	–
Humerus	–	–	–	–	53	1	–	–	–	–	–	–
Radius	–	–	–	–	–	–	–	–	–	–	–	–
Radius+ulna	–	–	–	–	–	–	–	–	–	–	–	–
Ulna	–	–	–	–	–	–	–	–	–	–	–	–
Ossa carpi	–	–	–	–	–	–	–	–	–	–	–	–
Mc	–	–	–	–	–	–	–	–	–	–	–	–
Pelvis	–	–	–	–	–	–	–	–	9	1	–	–
Femur	–	–	13	1	–	–	–	–	–	–	–	–
Patella	–	–	–	–	–	–	–	–	–	–	–	–
Tibia	7	1	–	–	–	–	–	–	–	–	–	–
Talus	1	1	–	–	–	–	–	–	–	–	–	–
Calcaneus	–	–	–	–	–	–	–	–	–	–	–	–
Mt	–	–	–	–	–	–	–	–	–	–	–	–
Ph	–	–	–	–	–	–	–	–	–	–	–	–

RESULTS

TUMULUS 15

Animal remains found in the main burial chamber were mixed with human bones and offerings, which was probably the result of grave looting. The other chambers were found blocked and had not been disturbed, hence all the objects were in place as left after the funeral ceremony. Most of the remains discovered in the shaft may have come from the main burial chamber, but material from around the grave should also be expected. The total number of bone fragments discovered in T.15 was 1404. Animal bones were badly preserved and easily disintegrated into very small pieces during exploration, making

identification entirely impossible in the case of 653 fragments. A few cattle bones were measured [Table 1]. Two talus bones came from individuals of about 126 cm and 128 cm height.

**Main burial chamber.** Only five very fragmented animal bones were discovered next to the south wall of the main burial chamber [Table 2]. Cattle was represented by an almost complete tibia and talus from the right side of the carcass (probably from the same cut of meat) and two ribs (one of them from the left side of the carcass). Marks on the ribs were left by a sharp tool, probably a knife. The cattle tibia and talus came from a young individual under

Table 2. Continued from the previous page

	T.15						T.21			
	Shaft						Main chamber			
	Cattle		Sheep		Sheep/goat		Sheep		Sheep/goat	
	NISP	No. bones	NISP	No. bones	NISP	No. bones	NISP	No. bones	NISP	No. bones
Cranium	–	–	–	–	–	–	–	–	–	–
Maxilla	–	–	–	–	15	1	–	–	–	–
Sternum	–	–	–	–	–	–	–	–	7	1?
Costae	85	4	–	–	46	1?	–	–	30	7
Vertebrae	1	1	–	–	–	–	–	–	–	–
Scapula	–	–	–	–	–	–	4	1	–	–
Humerus	–	–	2	1?	1	1	4	1	3	1?
Radius	–	–	–	–	–	–	5	1	–	–
Radius+ulna	–	–	–	–	–	–	–	–	–	–
Ulna	–	–	–	–	–	–	–	–	2	1
Ossa carpi	–	–	–	–	–	–	–	–	1	1
Mc	–	–	–	–	–	–	–	–	–	–
Pelvis	10	1	–	–	–	–	–	–	4	1
Femur	64	3?	–	–	16	1?	–	–	–	–
Patella	1	1	–	–	–	–	–	–	–	–
Tibia	23	4?	–	–	6	1?	3	1	4	1
Talus	1	1	–	–	–	–	1	1	–	–
Calcaneus	–	–	–	–	–	–	1	1	–	–
Mt	–	–	–	–	–	–	2	1?	–	–
Ph	–	–	–	–	–	–	–	–	–	–



3.5 years old, physiologically mature but morphologically immature. There was also a left sheep femur bearing marks left by skinning.

**Side chamber 2.** Animal remains left among the offerings in lateral chamber 2 were grouped in the central and northern part of the chamber and also in a vessel (No. 6). The bones were badly preserved, very fragmented, dry and fragile. The vessel contained one cattle rib, one ovicaprine rib and eight small unidentified fragments, which could have belonged to one of the said ribs. The cattle rib came from a young individual. The group in the central part of the chamber 2 consisted of a cattle left scapula and two right ribs. The ribs were those of young individuals, the scapula belonged to another, much older animal. The northern part yielded a cattle right humerus and two ribs, as well as another two right ribs that came from an ovicaprid. Cattle were represented by a young, but nearly fully grown individual under four years of age. Some bones bore marks left probably by larvae or termites/ants.

**Side chamber 3.** The bones collected in this chamber were also dry and fragile. They came from the distal part of a sheep carcass. This assemblage consisted of three ribs, two lumbar, a fragment of sacrum and an almost complete pelvis. The remains came from a young individual, although the exact age of the animal was not established. A few bones bore marks left probably by larvae or termites/ants. Marks left by a sharp tool were observed on an ovicaprine rib and lumbar.

**Shaft.** Most of the animal remains excavated in the shaft were very fragmented, dry and fragile. They formed the most numerous group of bones from T.15 and included remains of cattle and

sheep. Some bones belonged to ovicaprids of undetermined age (fragments of a rib, humerus shaft, almost complete femur, almost complete left tibia and part of the mandible). Cattle were represented by bones from both the left and right part of the carcass, among them a fragment of the left part of the pelvis, almost complete left femur, proximal and distal ends of the left tibia, almost complete right femur and tibia, right patella and talus. There were also four ribs, cervical vertebrae and some fragments of the distal end of a femur, a right tibia shaft and the shaft of another tibia. The bones belonged to an individual or individuals aged above 10 months but under four years. Some bones bore marks left probably by larvae or termites/ants. One cattle rib showed marks of filleting.

#### TUMULUS 21

The bone material from T.21 was scarce. Only 78 animal bones were discovered and seven fragments remained unidentified. The state of preservation of remains from T.21 was poor: they were very dry and fragile and because of that very fragmented. Most of the animal bones came from the burial chamber; only five unidentified fragments were found in the backfill of the shaft. The remains were located in two small vessels (Nos 2 and 3) and between them. Vessel 2 contained one bird bone and three ovicaprine bones (rib, distal end of humerus with the shaft and almost complete pelvis). The pelvis bore marks left by a sharp tool, probably a knife. Inside vessel 3 were three ovicaprine bones (rib, sternum and proximal end of tibia with the shaft). The sternum bore marks of cutting. On the chamber floor near the vessels and directly upon them were five ribs, one shaft of an ulna and one carpal

bone which came from an ovicaprid and seven sheep bones from the proximal part of the forelimb (almost complete scapula, proximal end of a humerus and an almost complete radius) and proximal and distal

part of the hind limb (distal end of a tibia with the shaft, talus, calcaneus and shaft of a metatarsus). All of the ovicaprine bones may have come from a single sheep, aged about four months.

## DISCUSSION

The analyzed animal remains from tumuli T.15 and T.21 constituted only one type of offerings for the dead. The bones recovered from the two side chambers in T.15 were undisturbed. They leave no doubt that the only rituals concerning animals that were performed were connected with preparing ritual food for the deceased. The consumption-oriented character of cattle and ovicaprine remains is attested by marks that are the result of preparing a meal (such as filleting and cutting into small portions).

The bone material from T.15 and T.21 should be analyzed taking into consideration the significance of the tumuli. Tumulus T.15 (type II) with its three chambers was surely much richer in terms of the number and quality of the burial equipment compared to tumulus T.21 (type III).

Cattle remains were not frequent in early Makurian graves, being attested only in single graves in Tanqasi (Osypińska 2008) and Kassinger Bahri (Makowiecki 2007). Other graves in Kassinger Bahri (Kołosowska and El-Tayeb 2007) and the graves in El-Ashamin (Kołosowska 2010) contained only ovicaprine bones. The lack of cattle bones is typical also of other tumuli in El-Zuma, although Marta Osypińska (2005; 2010b) was able to study the bone assemblages from the side chambers of T.2, T.5 and T.25, but not the material from the main burial chambers. Thus it seems that cattle meat was

a very precious gift offering for the dead. In turn, ovicaprids were popular as offerings during the Early Makurian period. Both T.15 and T.21 contained exclusively sheep remains. Osypińska (2005; 2010b) identified mostly goat remains at el-Sadda 1 and Tanqasi, while Daniel Makowiecki (2007) reported a sheep skeleton from Kassinger Bahri. These two species seem to have been of equal significance.

The pattern of anatomical distribution of ovicaprine remains noted in the case of T.15 and T.21 was confirmed for Kassinger Bahri by Makowiecki (2007) and for el-Sadda 1 and Tanqasi by Osypińska (2007; 2008; 2010a). Only parts rich in meat were chosen for the offerings; the most popular remains were ribs, ham and shoulder.

The age of butchered sheep is difficult to establish because of a lack or insufficient amount of data (precise age determination is based on teeth which were not found in either T.15 or T.21). Nonetheless, the results for graves T.15 and T.21 correspond to those reported by other authors (Makowiecki 2007; Osypińska 2007; 2008; 2010a). Animals intended for offerings were young, nearly fully grown but morphologically immature. The age of butchered cattle varied.

Cattle measurements indicated that the withers height of individuals from T.15 was slightly bigger than those described by Osypińska (2010b: 491).

The marks of larvae or termites/ants suggest that there must have been some fluctuation of air some time after the sealing of the chambers. The very poor state of preservation of animal bones

from tumuli T.15 and T.21 considered in the context of previous research carried out on this site (Osypińska 2005; 2010b) is proof of a progressing degradation of the site.

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National Science Center Grant No. 2014/13/N/HS3/04620

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*POLISH ARCHAEOLOGY IN THE MEDITERRANEAN (PAM)*  
*Annual of the Polish Centre of Mediterranean Archaeology, University of Warsaw*

PAM Editor-in-chief: Iwona Zych

Volume 24/1: Research

All texts peer-reviewed.

<http://www.pcma.uw.edu.pl/en/pam-journal/pam-independent-reviewers/>

Press-reviewing process: Urszula Wicenciak

Bibliographic editor: Aleksandra Zych

Language consultation: Iwona Zych

Technical editor: Iwona Zych

Digital processing: Ewa Czyżewska-Zalewska

Image processing and copyediting assistance: Ewa Czyżewska-Zalewska, Szymon Maślak, Marta Momot, Marek Puzkarski, Urszula Wicenciak

Original graphic design: Jerzy Kowalski, updated by Ewa Czyżewska-Zalewska for PCMA

DTP: Ewa Czyżewska-Zalewska, assisted by Agnieszka Dzwonek

Cover: Tumulus SB 100 from the Al-Subiyah region of Kuwait during exploration  
(Photo M. Makowski)

**ISSN 1234–5415 (Print), ISSN 2083–537X (Online)**

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Orders can be placed c/o Agnieszka Pieńkowska

[a.pienkowska@uw.edu.pl](mailto:a.pienkowska@uw.edu.pl)

University of Warsaw Press

00-497 Warszawa, Poland, ul. Nowy Świat 4

[www.wuw.pl](http://www.wuw.pl); e-mail: [wuw@uw.edu.pl](mailto:wuw@uw.edu.pl)

Internet Bookshop: [www.wuw.pl/ksiegarnia](http://www.wuw.pl/ksiegarnia)

*Printed in Poland*



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## XXIV/1

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