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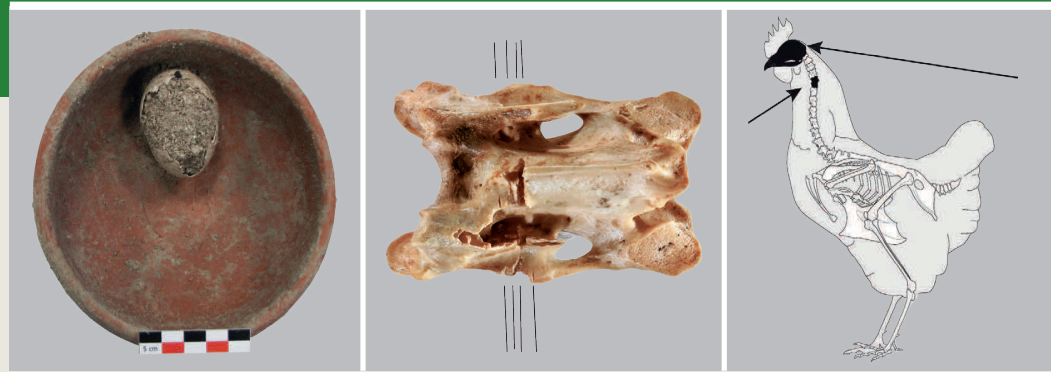
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# KOLLOQUIEN ZUR VOR- UND FRÜHGESCHICHTE 26



Sabine Deschler-Erb | Umberto Albarella  
Silvia Valenzuela Lamas | Gabriele Rasbach

## ROMAN ANIMALS IN RITUAL AND FUNERARY CONTEXTS

Proceedings of the 2<sup>nd</sup> Meeting of the  
Zooarchaeology of the Roman Period Working  
Group, Basel, 1<sup>st</sup>–4<sup>th</sup> February 2018

This volume includes a number of papers that were originally presented at the conference *Roman Animals in Ritual and Funerary Contexts*, which was held in Basel (Switzerland) from 1<sup>st</sup>–4<sup>th</sup> February 2018. The conference represented the second meeting of the International Council for Archaeozoology (ICAZ) Working Group on the *Zooarchaeology of the Roman Period*.

The articles present ritually deposited animal remains across a wide geographical range and incorporate both archaeological and zoological findings. The integration of these two strands of evidence is also one of the central concerns of the ICAZ Working Group, as in the past they have often been dealt with separately. However, it is precisely this interdisciplinary cooperation that opens up new perspectives on ritual practices in a wide variety of contexts. In this volume we see the enhancement of our understanding of ritual treatment of animals in central sanctuaries, in rural areas, at natural sites, and as part of building construction processes.

The case studies presented in this volume demonstrate how animal remains such as bones and eggshells provide information beyond diet, economy, and differences in social hierarchy. Their interdisciplinary investigation additionally enables insights into practices governed by cultural, religious, and ideological conditions.

The aim of the Zooarchaeology of the Roman Period Working Group (<https://alexandriaarchive.org/icaz/workroman>) is to represent a network of exchange and collaboration across borders and to enable the understanding of the interconnections between the research questions associated with animal remains from this important historical period.

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Sabine Deschler-Erb, Umberto  
Albarella, Silvia Valenzuela Lamas,  
Gabriele Rasbach  
ROMAN ANIMALS IN RITUAL  
AND FUNERARY CONTEXTS

DEUTSCHES ARCHÄOLOGISCHES INSTITUT  
Römisch-Germanische Kommission, Frankfurt a. M.

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# Vorwort zur Reihe „Kolloquien zur Vor- und Frühgeschichte“

In Händen halten Sie, liebe Leserin und lieber Leser, den 26. Band der „Kolloquien zur Vor- und Frühgeschichte“, der Ihnen neu und doch vertraut vorkommen mag. Denn diese Reihe, die von der Römisch-Germanischen Kommission (RGK) und der Eurasien-Abteilung des Deutschen Archäologischen Instituts (DAI) gemeinsam herausgegeben wird, existiert seit 23 Jahren, seit im Jahr 1997 die Akten des Internationalen Perlensymposiums in Mannheim als Band 1 publiziert wurden. Neu ist aber, dass die RGK erstmals die Herausgabe eines Bandes im neuen Reihenformat des DAI betreut hat. Die Aufmachung der „Kolloquien zur Vor- und Frühgeschichte“ (KVF) entspricht nun der Aufmachung zahlreicher weiterer Publikationsreihen des DAI. Das neue Layout ist moderner, attraktiver und nutzerfreundlicher. Es ist nun für viele DAI-Publikationsreihen nutzbar und hat einerseits einen hohen Wiedererkennungswert, erlaubt andererseits individuelle Anpassungen und Nutzungen.

Auch der vorliegende Band ist, wie es seit ihren Anfängen prägend für die KVF ist, ein Beispiel international ausgerichteter, Forschungstraditionen und -regionen übergreifender Wissenschaft. Inhaltlich schließt dieser 26. Band an eine ganze Reihe von KVF-Sammelbänden mit interdisziplinärer bzw. fachübergreifender Ausrichtung an. Mit KVF 26 stehen diesmal interdisziplinäre Untersuchungen zu Mensch-Tier-Beziehungen in den verschiedenen regionalkulturellen Kontexten des Römischen Reiches im Mittelpunkt und insbesondere die Rolle von Tieren in Zusammenhang mit Bestattungen und anderen Ritualen.

Knochengewebe vermag sehr gut, viele verschiedene Spuren menschlichen Handelns zu konservieren, und diese Spuren können wir als Zeugnisse dieser Handlungen, aber auch der dahinterstehenden Überlegungen, Absichten und Traditionen verstehen. So erlauben Tierknochen, aber auch andere Überreste wie Eierschalen, die Verknüpfung zoologischer Methoden und Fragen mit jenen einer sozial- und kulturhistorisch orientierten Archäologie. Tierreste sind also in jedem Sinne *archäologische* Funde, die nicht nur zu Ernährungs- und Wirtschaftsfragen Auskunft geben können, auch nicht allein zu sozialhierarchisch begründeten Unterschieden bei Bestattungsbeigaben, sondern auch zu *per se* kulturhistorischen Fragen wie eben jenen nach kulturell, religiös

bzw. weltanschaulich bestimmten Praktiken, nach Differenzen in ihrer Ausübung, nach ihren regional spezifischen Bedeutungen und nach ihren Veränderungen.

Damit liegt ein informativer und instruktiver 26. Band der KVF vor mit neuen Ansätzen, neuen Fragen und neuen Einsichten in einem neuen gestalterischen Gewand. Die Aufnahme der Reihe KVF in die einheitliche Publikationsgestaltung des DAI ermöglicht auch, diesen und weitere KVF-Bände in Zukunft in der *iDAI.world* – der digitalen Welt des DAI – unter *iDAI.publications/books* online zugänglich zu machen und zum Abruf im Open Access bereitzustellen. Zwar dient auch den interdisziplinär arbeitenden Altertumswissenschaften das gedruckt erscheinende Werk nach wie vor als Hauptmedium fachwissenschaftlichen Austauschs, doch stehen uns durch die digitale Vernetzung unterschiedlicher Daten- und Publikationsformate mittlerweile zahlreiche weitere Möglichkeiten der Veröffentlichung wissenschaftlicher Inhalte zur Verfügung. Das neue Publikationsformat ermöglicht die zukunftsweisende Verknüpfung von Print und digitalen Dokumentations- und Publikationsressourcen, z. B. durch das zeitgleiche Bereitstellen digitaler Supplemente.

Das Erscheinen von 26 Bänden in kurzen Abständen zeigt, dass die vor über 20 Jahren konzipierte Reihe erfolgreich war und ist, innovativ bleibt und in eine lebendige Zukunft blickt. Auch künftig werden Eurasien-Abteilung und RGK die Reihe „Kolloquien zur Vor- und Frühgeschichte“ im neuen Gewand und – wo sinnvoll und notwendig – als hybride Verknüpfung analoger und digitaler Wissensvermittlung fortführen. Und wie bisher werden wir in die KVF Beiträge von Tagungen und Symposien aufnehmen, an deren Vorbereitung und Durchführung wir personell bzw. organisatorisch beteiligt waren.

Zuletzt noch ein Dank an alle an der vorliegenden Publikation Beteiligten. Für die Möglichkeit im neuen Reihenformat des DAI publizieren zu können, danken wir ganz herzlichen den Kolleginnen und Kollegen der Redaktion der Zentrale. Die Bildbearbeitung der Beiträge lag in den Händen von Oliver Wagner. Johannes Gier war für das Lektorat der Beiträge verantwortlich. Lizzie Wright redigierte die englischen Texte, Hans-Ulrich Voß betreute die Drucklegung des Buches. Ihnen wie den Herausgeber\*innen des Bandes danken wir sehr für die hervorragende Vorbereitung und Durchführung der Publikation.

Frankfurt am Main, den 12.11.2020

Eszter Bánffy  
Erste Direktorin

Kerstin P. Hofmann  
Zweite Direktorin

Alexander Gramsch  
Redaktionsleiter



# Preface to the series “Kolloquien zur Vor- und Frühgeschichte”

In your hands, dear reader, you hold the 26<sup>th</sup> volume of the series “Kolloquien zur Vor- und Frühgeschichte”: It might seem to you different, but still familiar, because this series, concomitantly published by the Romano-Germanic Commission (RGK) and the Eurasia Department of the German Archaeological Institute (DAI), has been in existence for 23 years. The first volume, published in 1997, consisted of the proceedings of the “Internationales Perlensymposium” held in Mannheim. What is new is that the RGK has published a volume in the new DAI series format for the first time. The layout of “Kolloquien zur Vor- und Frühgeschichte” (KVF) now matches the layout of numerous other DAI publication series. This modern layout is more attractive and more user-friendly; the new format is mirrored across many DAI publication series. Not only does it have a distinctive design; it also enables individual adaptations and uses.

The present volume, as is characteristic of the KVF series from its beginnings, is an example of internationally oriented scholarship spanning diverse research traditions and research fields. In terms of content, this 26<sup>th</sup> volume continues a long tradition of conference proceedings with an interdisciplinary or cross-disciplinary orientation published within KVF. The focus of KVF 26 is on interdisciplinary studies of human-animal relationships in different regional-cultural contexts of the Roman Empire. In this, particular emphasis lies on the role of animals in burial and other ritual contexts.

Bone tissue excellently preserves many different traces of human actions. These traces can be interpreted as the evidence of these actions as well as of the underlying reflections, intentions, and traditions. Animal bones as well as other remains such as eggshells therefore make it possible to link zoological methods and issues with those related to socially and cultural-historically oriented archaeology. Animal remains are thus *archaeological* finds in every sense: They provide information not only about diet and economy, or about differences in grave goods based on social hierarchy. They touch on key cultural issues such as culturally, religiously or ideologically determined practices. Moreover, zooarchaeological analyses allow us to detect differences in these practices, to identify regionally specific meanings and the changes therein.

Thus, an informative and instructive 26<sup>th</sup> volume of the KVF series is available in a new design, including new approaches, new research questions, and new insights. In the future, through the incorporation of the KVF series into the common DAI publication design this and further volumes can be published online: on the *iDAI.world* platform – the digital world of the DAI – under *iDAI.publications/books* and in Open Access. Printed publications admittedly still serve as a main medium for subject-specific exchanges for interdisciplinary archaeological studies. The new publication format allows digital networking of various data and publication formats providing us with numerous additional possibilities for the publication of scientific content and enabling the future-oriented linking of print and digital documentation and publication resources, for example through the simultaneous provision of digital supplements.

The publication of 26 KVF volumes at short intervals shows that this series conceived over 20 years ago has been successful, remains innovative, and looks ahead to a lively future. From now on the Eurasia Department and the Romano-Germanic Commission will continue the series “Kolloquien zur Vor- und Frühgeschichte” in the new design and, where this seems reasonable and vital, in the form of a hybrid connection of analogue and digital knowledge. As in the past, in the KVF series we will continue incorporating proceedings of meetings and symposia in the preparation of which we are involved personally or organisationally.

Lastly we want to express our gratitude to all who participated in producing the present publication. We thank our colleagues from the editorial office at the Head Office of the German Archaeological Institute for the opportunity to publish in the new DAI series format. The digital imaging of the contributions was carried out by Oliver Wagner. Johannes Gier was responsible for the copyediting of the contributions. Lizzie Wright edited the English texts. Hans-Ulrich Voß was in charge of the editorial process. We are very grateful to all these people and to the editors of the volume for the outstanding preparation and realisation of this publication.

*Translated by Karoline Mazurié de Keroualin.*

Frankfurt am Main, 12 November 2020

Eszter Bánffy  
Director

Kerstin P. Hofmann  
Deputy Director

Alexander Gramsch  
Head of the editorial office

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(Logo: Stefanie Deschler)

# Preface

by Sabine Deschler-Erb / Umberto Albarella / Silvia Valenzuela Lamas / Gabriele Rasbach

This volume includes contributions that were originally presented at the conference *Roman Animals in Ritual and Funerary Contexts*, which was held in Basel 1<sup>st</sup>–4<sup>th</sup> February 2018 and organised by Sabine Deschler-Erb. The conference represented the second meeting of the International Council for Archaeozoology (ICAZ) Working Group on the *Zooarchaeology of the Roman Period*.

ICAZ Working Groups are largely informal and independent collectives of researchers engaged with a theme of common interest. Their association with ICAZ allows them to connect to a larger international community and benefit from a number of shared facilities, such as the ICAZ web page <<https://www.alexandriaarchive.org/icaz/index>> (last access: 20.10.20)> and Newsletter <<http://alexandriaarchive.org/icaz/publications-newsletter>> (last access: 20.10.20)>. They also enjoy the opportunity to share the ICAZ ethos of collaboration, mutual aid, and international solidarity.

The *Zooarchaeology of the Roman Period* ICAZ Working Group was originally proposed by Silvia Valenzuela Lamas and Umberto Albarella and approved by the ICAZ International Committee in 2014. The aspiration to create such a group emerged from the awareness that the Roman World was intensively connected. Nevertheless, much research on the use of animals in Roman or Romanised areas has been carried out at a localised level, often oblivious of parallel studies undertaken in other regions of Roman influence. It was clear that many of the investigated research themes – such as the use of animals in religious contexts, livestock trade, and husbandry improvements, to mention just a few – would benefit from greater integration and enhanced international synergies. This applied to the methodological approach, as well as the actual evidence from different areas of the Empire. With this objective in mind, the first meeting was organised in Sheffield (UK) 20<sup>th</sup>–22<sup>nd</sup> November 2014 by the two Working Group promoters and focused on *Husbandry in the Western Roman Empire: a zooarchaeological perspective*. The core objective of the meeting was to bring together researchers operating in different areas of the former Roman World and contiguous regions, which was successfully achieved. Some of the contributions to that conference were published in a monographic issue of the *European*

*Journal of Archaeology* (Volume 20, Special Issue 3, August 2017).

The focus on the western Empire that characterised the first meeting led to the need to open up geographically for the second meeting and focus on a thematic investigation which would be of fully international relevance. Sabine Deschler-Erb proposed to organise the second meeting in Basel (Switzerland) and this, at the very core of Europe, proved to be a very successful location. She suggested a number of possible topics to the informal membership of the group and the theme of ‘ritual’ was chosen. This was another fruitful move as there was hardly any shortage of material to present, and the conference provided a whirlwind of case studies across different areas, whose connections and shared questions could clearly be identified. The objective of the second meeting to move beyond the focus on the Western Empire was fully achieved. The list of papers included in this volume clearly shows the great geographic range on display, with different contributions presenting research based in the south, north, east, and west of the Roman area. The modern countries featured in the book include Austria, Belgium, Britain, Egypt, France, Germany, Greece, Italy, Malta, the Netherlands, Romania, Serbia, Switzerland and Turkey.

The Basel conference and its proceedings should provide an ideal springboard for further success and interconnection of researchers investigating the use of animals in Roman times.

Last but not least, we would like to express our great gratitude to all of the institutions and people who made the Basel conference and these proceedings possible. We thank the University of Basel, especially the Integrative Prehistory and Archaeological Science, for hosting the conference, as well as for technical and administrative support; the Swiss National Foundation, the Provincial Roman Archaeology Working group of Switzerland, and the Vindonissa chair of the University of Basel for their financial support; the Römerstadt Augusta Raurica, the Kantonsarchäologie Aargau, and the Römerlager Vindonissa for their warm welcome and generous catering; the organisation team, Monika Mráz, David Roth, and Viviane Kolter-Furrer, whose help was essential before, during, and after the conference; all student volunteers, Florian Bachmann, Debora Brunner, Marina Casaulta,

Laura Caspers, Sarah Lo Russo, Hildegard Müller, and Benjamin Sichert, who worked with great commitment; and the Romano-Germanic Commission, Frankfurt, who accepted these proceedings for their series. We thank Hans-Ulrich Voß and Johannes Gier, who carried out an excellent editing job.

The next conference will take place in Dublin (Ireland) on 11<sup>th</sup>–13<sup>th</sup> March 2021 and will be organised by Fabienne Pigière on the topic of *Animals in Roman economy*. It will certainly provide new opportunities for cross-fertilisation, collaboration, and exchange of ideas.





# Evidence of ritual practices from the animal remains found in the Juno Sanctuary at Tas-Silġ, Malta

by *Jacopo De Grossi Mazzorin*

## Keywords

Malta, Tas-Silġ, Phoenician-Punic, sanctuary, animal offering

## Schlüsselwörter

Malta, Tas-Silġ, phönizisch-punisch, Heiligtum, Tieropfer

## Mots-clés

Malte, Tas-Silġ, phénico-punique, sanctuaire, offrandes animales

## Introduction

Tas-Silġ is a multi-period sanctuary located in the south-eastern part of the island of Malta (*fig. 1*). The excavations were carried out between 1963 and 1970 by the Italian Archaeological Mission. Italian archaeological works were resumed on site in 1995 with a collaborative project between the Catholic University of Milan, the University of Rome La Sapienza, and the University of Salento<sup>1</sup>.

First archaeological evidence refers to a megalithic temple, which was regularly visited from the Tarxien to the Borġ in-Nadur period<sup>2</sup>. The Phoenician-Punic sanctuary was probably built around the last quarter of the 8<sup>th</sup> century BC and it was devoted to Astarte. It is worth noting that it was built on an apse of the prehistoric megalithic temple, as this was still in place at that time<sup>3</sup>.

After the Roman occupation of 218 BC, Astarte was assimilated to Juno divinity of the Capitoline triad, rather than to Venus, protector goddess of nearby Carthage. After that, several phases of restoration of the facade began until new structures linked to the cult as well as a defensive wall were built in the Hellenistic period. Subsequently, other restorations were carried out between the end of the 2<sup>nd</sup> and the 1<sup>st</sup> century BC.

The sanctuary was very rich and famous across the whole Mediterranean area; it was well known for some episodes of looting by an admiral of Massinissa and by Verre<sup>4</sup>. It is not yet clear what kind of economic activities were developed in the sanctuary, but it is clear that its economic role in the control of maritime and commercial activities was very important<sup>5</sup>. Moreover, evidence

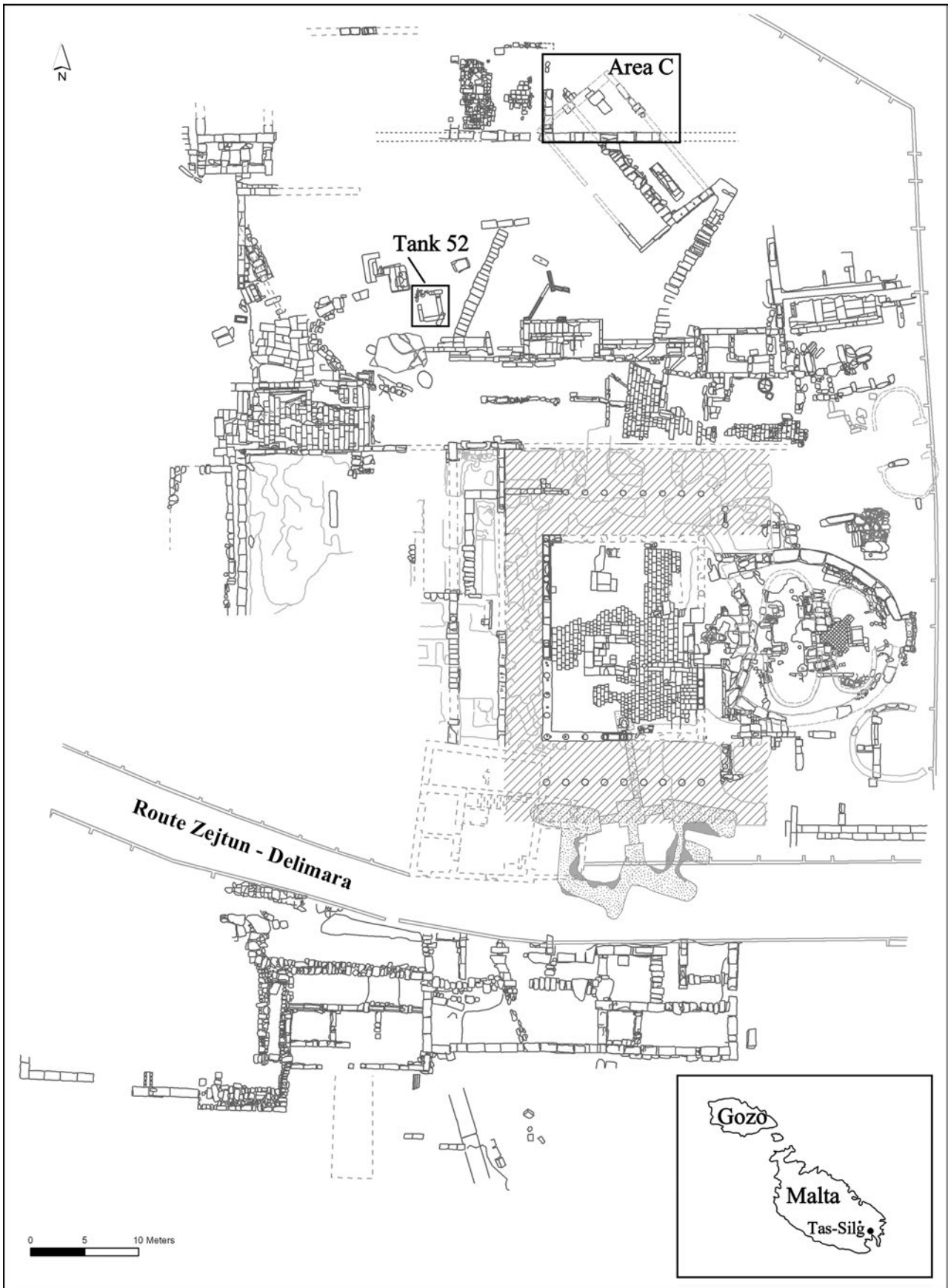
1 ROSSIGNANI 2007; SEMERARO 2007.

2 RECCHIA 2007.

3 CIASCA 1976/77; CIASCA 1999.

4 CICERO, *Verr.* II 4, 103–104; Valerio Massimo I,2.

5 CICERO, *Verr.* II 5, 184: “[...] teque, Iuno Regina, cuius duo fana duabus in insulis posita sociorum, Melitae et Sami, sanctissima et antiquissima, simili scelere idem iste omnibus donis ornamentisque nudavit”.



1 Map of the sactuary of Tas-Silg with the location of the two considered sample.

suggests that it also played an important role in controlling, if not encouraging, piracy<sup>6</sup>.

In this paper the animal remains found in a small feature called ‘Tank 52’, which was excavated during the 1960s, as well as the remains coming from the northern ‘Area C’ of the sanctuary<sup>7</sup> are discussed in detail<sup>8</sup>. The animal remains from ‘Tank 52’ clearly refer to the abandonment phase of the tank. According to the pottery, the tank, perhaps previously used for the ritual bath of the deity statue, was filled between the end of the 2<sup>nd</sup> and the

1<sup>st</sup> century BC when part of the sanctuary was restored. On the other hand, the animal remains from ‘Area C’ represent the remains of offerings practiced elsewhere and then deposited in this area during cleaning activities of the area for sacrifice or ritual meal. They are dated between the end of the 3<sup>rd</sup> century BC and the beginning of the 1<sup>st</sup> century AD. In ‘Area C’ animal remains mainly refer to sheep and goat, domestic fowl, dove, fish, and molluscs. A few cattle and wild animal remains were also identified.

## The animal remains

Taxa	‘Tank 52’		‘Area C’	
	NISP	MNI	NISP	MNI
<b>Domestic animal</b>				
Cattle – <i>Bos taurus</i>	18	2	145	5
Sheep or Goat – <i>Ovis vel Capra</i>	351		1118	
Sheep – <i>Ovis aries</i>	30	21	124	42
Goat – <i>Capra hircus</i>	21		33	
Pig – <i>Sus domesticus</i>	–	–	21	2
Dog – <i>Canis familiaris</i>	1	1	7	1
Chicken – <i>Gallus gallus</i>	546	28	351	17
Unid. Dove – <i>Columba</i> sp.	167	19	10	2
Unid. turtur – <i>Streptopelia</i> sp.	6	2	3	1
Domestic duck – <i>Anas platyrhynchos dom.</i>	3	1	–	–
<b>Wild animal</b>				
Red deer – <i>Cervus elaphus</i>	4	1	–	–
Weasel – <i>Mustela nivalis</i>	–	–	1	1
Rabbit – <i>Oryctolagus cuniculus</i>	12	3	38	4
North African hedgehog – <i>Atelerix algirus</i>	–	–	1	1
Unid. birds – <i>Aves</i> und.	14		100	
Ostrich (eggs) – <i>Struthio camelus</i>	–	–	2	
Turtle – <i>Testudo</i> sp.	12		3	
Unid. amphibia – <i>Amphibia</i> und.	1		1	
Unid. fishes – <i>Pisces</i> und.	208		344	
<b>Sea urchin – <i>Paracentrotus lividus</i></b>	<b>+++</b>		<b>+++</b>	
Unid. crab – <i>Decapoda</i> und.	1		1	
Mollusc – <i>Mollusca</i>	891		1511	
<b>Total (without sea urchin)</b>	<b>2286</b>		<b>3814</b>	
Ribs	243		644	
Vertebrae	122		326	

Tab. 1 Tas-SilĠ: The animal remains subdivided by taxon, found both in ‘Tank 52’ and in ‘Area C’<sup>9</sup> (NISP = number of identified specimen; MNI = minimal number of individuals; +++ abundant remains; MNI has been evaluated only for mammals and birds).

6 CICERO, *Verr.* II 4, 103–104 claims that pirates were wintering near the sanctuary “[...] ubi piratae fere quotanti hiemare soleant [...]”.

7 This area was excavated by Prof. G. Semeraro in 2007.

8 Also in the southern area excavated between 1996 and 2005 by the University of Malta, some layers contain ashes, votive objects

and animal bones, published in a preliminary way by CORRADO et al. 2004.

9 The MNI was calculated following BÖKÖNYI (1970) and KLEIN / CRUZ-URIBE (1984).



Cattle remains are very rare in both samples: 18 specimens from ‘Tank 52’, 145 from ‘Area C’ (corresponding respectively to the 1.6 % and 8 % of the remains from domestic species; *fig. 2*). They belong to body parts with

little meat yield, such as fragments of skull, teeth or phalanges (*tab. 2*), and were probably used for the preparation of broths or soups. Oxen were rarely sacrificed, since this animal was probably quite expensive.

	Cattle		Sheep/Goat		Pig	
	‘Tank 52’	‘Area C’	‘Tank 52’	‘Area C’	‘Tank 52’	‘Area C’
Skull + horn cores	4	11	29	67	–	2
Maxilla + upper teeth	8	38	58	170	–	1
Mandible + lower teeth	–	17	114	400	–	6
Unid. Teeth	–	12	–	8	–	1
Atlas	–	–	3	11	–	–
Epistropheus	–	–	1	8	–	1
Hyoid	–	–	5	5	–	–
Scapula	–	–	3	18	–	–
Humerus	–	3	8	37	–	1
Radius	–	7	8	37	–	–
Ulna	–	1	7	25	–	–
Metacarpus	–	9	19	86	–	2
Carpal bone	–	3	4	2	–	–
Pelvis	–	2	7	38	–	1
Femur	–	4	10	23	–	1
Patella	–	–	1	1	–	1
Tibia	–	3	8	45	–	–
Malleolus	–	2	–	–	–	–
Astragalus	1	4	–	6	–	–
Calcaneus	–	1	7	17	–	1
Other tarsal bone	–	3	2	10	–	–
Metatarsus	–	6	25	82	–	–
Metapodial	–	2	16	33	–	–
Sesamoid	–	2	–	–	–	–
First phalanx	3	5	34	89	–	1
Second phalanx	2	7	21	32	–	1
Third phalanx	–	2	12	25	–	1
	<b>18</b>	<b>145</b>	<b>402</b>	<b>1275</b>	<b>0</b>	<b>21</b>

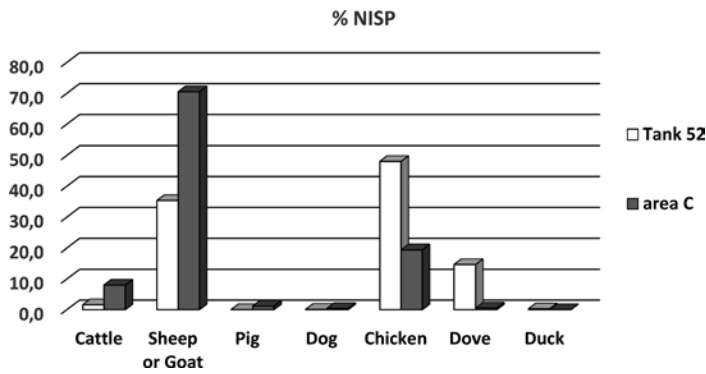
Tab. 2 Tas-Silg: Body parts of the domestic mammals by number of identified specimens (NISP) and minimum number of individuals (MNI).

Caprine remains are numerous in both samples but particularly in ‘Area C’: 402 specimens from ‘Tank 52’, 1275 from ‘Area C’ (corresponding respectively to 35.2 % and 70.4 % of the remains from domestic species; *tab. 1*; *fig. 2*). Sheep are slightly more prevalent than goats, with a ratio of 1.4: 1.

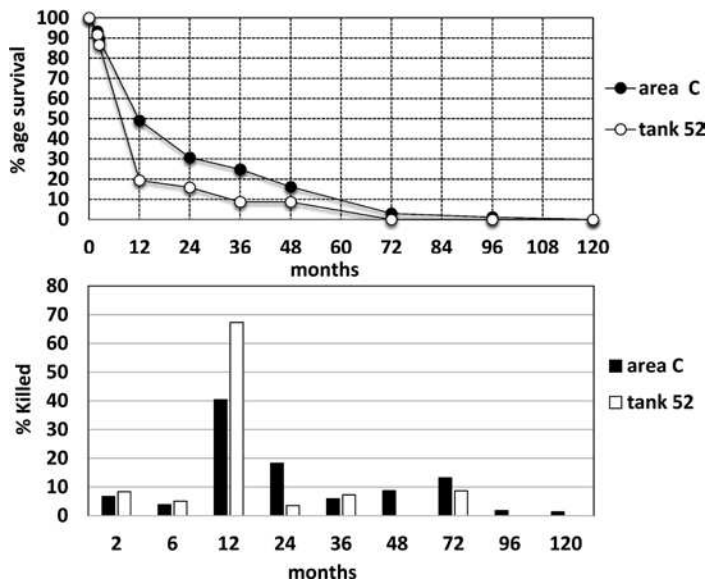
From the fusion of the articular epiphysis of long bones it was possible to establish the age of death of the caprine<sup>10</sup>. It can be seen that, in ‘Tank 52’, almost 66 % of lambs were killed within the first year of life and the remaining 33 % between two and three years of life (*tab. 3*). Instead, the sample from ‘Area C’ is quite different since only 33 % of the sample seems to have been killed in the first twelve months of life, while 20 % of the animals have

lived to past their third year (*tab. 3*). Unfortunately, epiphyseal fusion can only tell us whether an animal has passed a certain age group, but it is impossible to know the exact age of the animal. Indeed, it is more useful to observe the eruption, replacement and wear stages of the teeth (*tab. 4*) which present a longer and more exact sequence compared to the fusion of the epiphyses. The analysis of tooth stages show that over 80 % of caprine remains from ‘Tank 52’ belonged to animals killed in their first year, and particularly between 6 and 12 months; it is also worth mentioning that very few animals became adult (*tab. 4*; *fig. 3*). The animals killed at a young age (within two years) are also important in ‘Area C’, although it is less evident than in the previous sample.

10 BULLOCK / RACKHAM 1982.



2 Tas-Silġ: proportions of the domestic animals in the two considered samples ('Tank 52' and 'Area C').



3 Tas-Silġ: kill-off patterns for sheep/goats in the two samples ('Tank 52' and 'Area C').

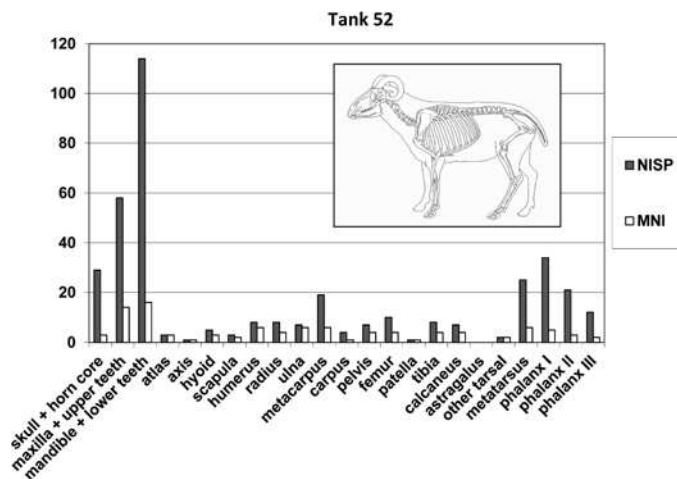
Bone	Age	'Tank 52'		'Area C'	
		U-F	U-F	U-F	U-F
Humerus (dist.)	-12 months	2-1	5-9		
Radio (prox.)	-12 months	4-3	1-4		
Pelvis	-12 months	2-1	3-13		
scapula	12 months	2-1	2-4		
First phalanx	14-35 months	17-7	30-27		
Second phalanx	14-35 months	8-10	13-11		
Femur (prox.)	35 months	3-1	4-1		
Tibia (dist.)	35 months	0-0	8-3		
Metacarpus (dist.)	48 months	1-1	5-5		
Femur (dist.)	48 months	0-0	3-2		
Tibia (prox.)	48 months	0-0	3-0		
Metatarsus (dist.)	48 months	6-0	6-4		
Metapodial (dist.)	48 months	16-0	27-0		
Humerus (prox.)	48-60 months	2-0	0-0		
Radius (dist.)	48-60 months	4-0	4-0		
Ulna (prox.)	48-60 months	0-0	8-0		
Calcaneus	48-60 months	7-0	9-5		

Tab. 3 Tas-Silġ: Frequencies of unfused (U) and fusing/fused (F) bones of caprines; fusion age according to BULLOCK / RACKHAM 1982.

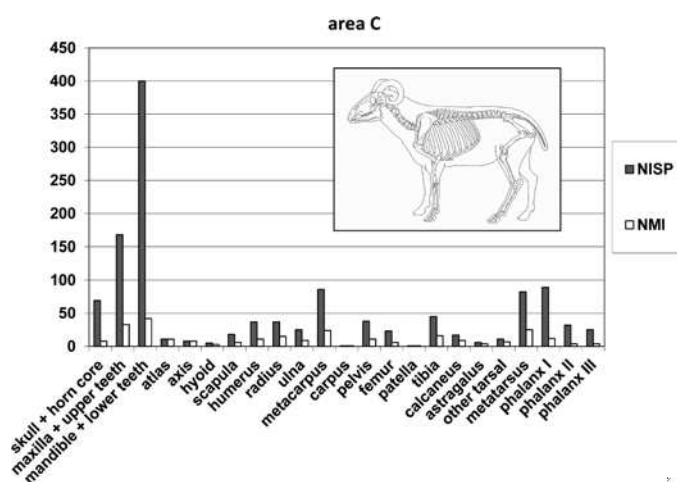
Tooth wear	Months	'Tank 52'		'Area C'	
		NISP	%	NISP	%
A	0-2	4	8.3	8.7	6.7
B	2-6	2.4	5.0	5.0	3.8
C	6-12	32.3	67.3	52.5	40.4
D	12-24	1.7	3.5	23.7	18.3
E	24-36	3.46	7.2	7.6	5.9
F	36-48	0	-	11.4	8.7
G	48-72	4.14	8.6	17.1	13.2
H	72-96	0	-	2.3	1.8
I	96-120	0	-	1.7	1.3

Tab. 4 Tas-Silġ: Caprine teeth wear stage, following PAYNE 1973.

The distribution of body parts highlights the prevalence of some elements over others. In particular, there are numerous fragments of skull, mandibles and loose teeth, metapodials and phalanges. However, this could be explained by preservation bias. Skulls and mandibles are more prone to taphonomic agents, thus loose teeth are often found scattered through deposits. In contrast, some



4 Tas-Silg: distribution of skeletal element of sheep/goat in 'Tank 52' by number of identified specimens (NISP) and minimum number of individuals.



5 Tas-Silg: distribution of skeletal element of sheep/goat in 'Area C' by number of identified specimens (NISP) and minimum number of individuals.

long bones tend to preserve better due to the high level of compact bone tissue (i.e. distal tibia and metapodials). Moreover, some bones (e.g. phalanges) occur in higher number than others in the skeleton. Nonetheless, considering the MNI, the occurrence of the various anatomical parts are relatively balanced, suggesting that whole carcasses were processed in the sanctuary (figs 4 and 5).

In both samples hind limb bones slightly prevailed. The result is not consistent with the prevalence of foreleg bones observed by Corrado et al. on material coming from the southern area<sup>11</sup>. Moreover, in 'Tank 52', long bones from the left side<sup>12</sup> were mostly represented (fig. 6), with the exception of metacarpals, suggesting a rite similar to that described in Leviticus (7,32), where the right

thigh belonged to the priest. This suggests that we might have found the remains destined for the pilgrims, although this interpretation should be treated with caution, due to the small size of the sample. This difference is not so clear in the 'Area C' sample, even if elements from the left side almost always prevailed over those from the right.

Among mammals, a small number of remains of dog<sup>13</sup>, weasel<sup>14</sup>, North African hedgehog and red deer were identified<sup>15</sup>. The presence of the last three animals on the island is of particular interest.

The so-called "Marseilles tariff" (CIS I, 165 = KAI, n. 69), dated to the end of the 4<sup>th</sup> and the beginning of the 3<sup>rd</sup> century BC, testifies that red deer were used in sacri-

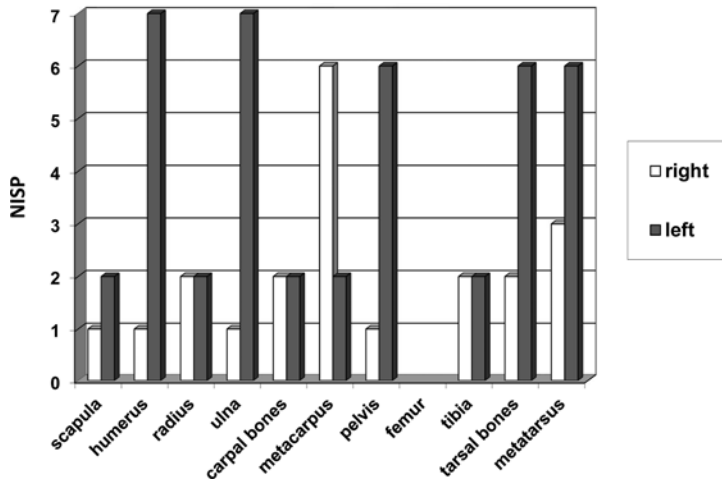
11 CORRADO et al. 2004.

12 Femurs are absent in figure 4 only because their fragmented state did not make it possible to identify the side.

13 Only one upper tooth (I3), fragments of a sternum, distal humerus, distal radius, distal tibia and two metacarpal (III and IV) in 'Area C' and one canine in 'Tank 52'.

14 An humerus in 'Area C'.

15 A fragment of maxilla in 'Area C'.



6 Tas-Silġ: number of identified anatomical elements of sheep/goat in 'Tank 52' subdivided for each body side.

fices. The remains from Tas-Silġ<sup>16</sup> refer to a very small adult. It is difficult to say whether it was an indigenous or imported animal, although the small dimension suggests the first hypothesis. Indeed, even if deer from the Pleistocene show a great variability in the size, genetic factors seem to have influenced skeleton growth. Although small, this animal is however much larger than a fallow deer<sup>17</sup>, so we can assume that it was a red deer<sup>18</sup>.

Red deer are not represented at Tas-Silġ in Prehistoric times. Since deer remains were found in many Maltese Upper Pleistocene and early Holocene contexts, it can be assumed that its extinction on the island was caused by hunting pressure from early farmers at the beginning of the Neolithic period.

The North African hedgehog, the weasel and the rabbit could have also been introduced on Malta in Roman times. With regards to the rabbit, the remains of three adults were recovered. Currently this animal is widespread across all the islands of the Maltese archipelago (Malta, Gozo, Comino, Cominotto, Filfla and Selmunett/St Paul)<sup>19</sup>, while it was absent in the Pleistocene and at the beginning of the Holocene<sup>20</sup>. Rabbit remains don't appear at Tas-Silġ in its prehistoric phases<sup>21</sup>, but they become common in the imperial phases (tab. 1). The Phoenicians probably introduced the rabbit to Malta from the coasts of the Iberian Peninsula, from where they came at the end of the 9<sup>th</sup> century BC<sup>22</sup>. Once they arrived on the southern coast of Spain, the Phoenicians

found a large quantity of rabbits. Rabbits were referred to by the Phoenicians with a Semitic word, "shephan", which they also used in reference to another similar animal: the hyrax (*Procavia capensis*); hence i-shephan-an, or the country of "hyrax", from which the Latin word "Hispania" derived from. In the sample, it is quite clear that there has not been a particular selection with regards to the parts of the body of the rabbit used in the sanctuary (tab. 5).

	'Tank 52'		'Area C'	
	NISP	MNI	NISP	MNI
Mandible	–	–	1	1
Scapula	1	1	5	3
Radius	2	2	–	–
Ulna	1	1	3	2
Pelvis	3	3	3	2
Sacrum	–	–	1	1
Femur	2	2	1	1
Tibia	1	1	1	1
Astragalus	–	–	1	1
Calcaneus	1	1	2	2
Metatarsus	1	1	15	4
Metapodial	–	–	5	–
<b>Total</b>	<b>12</b>	<b>12</b>	<b>38</b>	<b>18</b>

Tab. 5 Tas-Silġ: Body parts of rabbit by number of identified specimens (NISP) and minimum number of individuals (MNI).

16 Two second phalanges (1: GL=38.8, Bp=18.2, SD=12.7, Bd=15.8; 2: GL=36, Bp=17.6, SD=13.7, Bd=15.2), a third phalanx (DLS=36.7, Ld=34.6, MBS=9.8) and a fragment of distal humerus (Bd=46; HTC=24.9), all in 'Tank 52'.

17 DAVIS / MAC KINNON 2009.

18 Among the oldest findings in the area it should be noted that not far from Carthage the fallow deer is already present between the 1<sup>st</sup> and 4<sup>th</sup> centuries AD (NOBIS 1992).

19 LANFRANCO (1969) reports that in a map of the middle ages the island of Filfla is mentioned as "c. Furfura or Forfola full of hares", meaning "wild rabbits" with hares.

20 HUNT / SCHEMBRI 1999.

21 DE GROSSI MAZZORIN in study.

22 ZEUNER 1963, 410–411; MASON 1984, 241; MASSETI 2002, 223–226. – The presence of the rabbit in the archaeological levels of Tas-Silġ is perhaps the oldest documented so far for the central Mediterranean (MASSETI / DE MARINIS 2008).

Bird bones are particularly numerous, especially those of chicken and doves (*tab. 1*). Concerning the domestic fowl, the distribution of body parts suggests the absence of skulls and both wing and digit phalanges, which were discarded during butchery (*tab. 6*). The representation of other bones greatly differ, probably due to preservation

bias rather than to the deliberate selection of parts of the chicken (for example only three entire humeri from 53 remains from ‘Tank 52’) or due to major difficulties in identifying them due to their fragmentation (as in the case of radius and fibula).

	<i>Gallus gallus</i>				<i>Columba sp.</i>			
	‘Tank 52’		‘Area C’		‘Tank 52’		‘Area C’	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
Mandibula	1	1			–		–	
Clavicula	19	9	7		–		–	
Sternum	20		8		–		–	
Scapula	32	22	12	7	–		–	
Coracoid	34	27	31	13	18	11	3	2
Humerus	53	14	32	9	17	9	1	1
Radius	33	11	34	9	38		–	
Ulna	87	26	42	15	21	8	–	
Metacarpus II+III	36	20	19	8	3	2	2	2
Pelvis	63		12		–		–	
Femur	52	12	33	13	30	14	2	2
Tibia	78	13	45	13	37	19	–	
Fibula	12	7	2	2	–		–	
Metatarsus	20	6	51	17	3	2	2	1
Phalanges	6		23		–			–
<b>Total</b>	<b>546</b>	<b>28</b>	<b>351</b>	<b>17</b>	<b>167</b>	<b>19</b>	<b>10</b>	<b>2</b>

Tab. 6 Tas-Silg: Body parts of chicken and dove by number of identified specimens (NISP) and minimum number of individuals (MNI).

Overall, the remains belonged to adult animals, but some immature individuals were also present. The presence and absence of spurs on tarsometatarsi suggest that hen and cock remains are more or less balanced in both samples (*tab. 7,A*). The sacrificed birds were mostly adults, although some immature individuals were also present (*tab. 7,B*).

(A)	male	female
‘Area C’	10	10
‘Tank 52’	4	6
(B)	immature	adult
‘Area C’	8	13
‘Tank 52’	10	18

Tab. 7 Tas-Silg: Frequencies of male/female (A) and immature/adult (B) bones in chicken.

Dove remains were not identified at a specific level, but certainly the domestic form of *Columba livia* is present. They are more common in ‘Tank 52’ than ‘Area C’. In particular wing and thigh bones were recovered, which suggest a disarticulation process before cooking (*tab. 6*). A small number of remains of collared doves (*Streptopelia sp.*), ducks, and turtles were also present.

The majority of fish remains (146 of 208) from ‘Tank 52’ were identified to species level (*tab. 8*). They belong to 20 taxa, which have been divided, according to the number of remains referable for each of them, into two categories: rare and prevalent. These categories arise from our need to understand which species were actually fished and only subsequently sacrificed to the deity and eventually consumed.

Taxa	NISP
Ray (und.) – Rajiformes (und.)	1
Mulletts – <i>Mugil</i> sp.	4
Peacock wrasse – <i>Symphodus tinca</i>	1
Green wrasse – <i>Labrus viridis</i>	1
Mottled grouper – <i>Mycteroperca rubra</i>	3
Grouper – <i>Epinephelus</i> sp.	31
Mediterranean parrotfish – <i>Sparisoma cretense</i>	16
Sand steenbras – <i>Sciaena umbra</i>	3
Shi drum – <i>Umbrina cirrosa</i>	1
Common dentex – <i>Dentex dentex</i>	7
Two-banded sea bream – <i>Diplodus vulgaris</i>	1
Sand steenbras – <i>Lithognathus mormyrus</i>	2
Red porgy – <i>Pagrus pagrus</i>	24
Gilt-head bream – <i>Sparus aurata</i>	25
European conger – <i>Conger conger</i>	2
Moray – <i>Muraena helena</i>	6
Forkbeard – <i>Phycis phycis</i>	6
Mackerel – <i>Scomber japonicus</i>	1
Little tunny – <i>Euthynnus alletteratus</i>	11
Pisces (und.)	62
<b>Total</b>	<b>208</b>

Tab. 8 Tas-SilĠ: The fish remains of the ‘Tank 52’ (NISP = number of identified specimen).

The first category includes all the species for which only one anatomical element has been identified. Among these: an unidentified species belonging to the order Rajiformes, the peacock wrasse (*Simphodus tinca*), the green wrasse (*Labrus turdus*), the Shi drum (*Umbrina cirrosa*), the common two-banded sea bream (*Diplodus vulgaris*) and the mackerel (*Scomber japonicus*). The scarcity of the remains belonging to these species should probably be interpreted as the result of occasional fishing and therefore their presence should be random. On the contrary, it is possible to include, in the aforementioned category of predominant species, those represented by a great number of remains. Among these there are: the groupers (*Epinephelus* sp. and *Mycteroperca rubra*), the gilt-head (sea) bream, the red porgy (*Pagrus pagrus*), the Mediterranean parrotfish (*Sparisoma cretense*) and the little tunny (*Euthynnus alletteratus*). To be included in the list, but with a lower number of remains, also the mullets (*Mugil* sp.), the sand steenbras (*Lithognathus mormyrus*), the moray (*Muraena helena*), the common dentex (*Dentex dentex*), the European conger (*Conger conger*) and the forkbeard (*Phycis phycis*). The absence of signs of butchery and burning on the bones meant that it was not possible to determine the type of preparation or the type of consumption of the

23 There were also numerous shells of *Elicidae* whose food utilisation is not at all certain.

fish. However, from a qualitative analysis the taxa which were present it was possible to assume the type of fishing and exploitation of the environment. The presence of parrot fish (*Scaridae*), bream, red porgy, groupers of medium-small size (most of the remains belong to small fish) suggest an exploitation of the coasts, because these fishes have gregarious habits and probably they were caught with the aid of nets or traps. The use of these tools would also explain the presence of those species that have been included in the “rare” category, as they would occasionally be caught with a trap. Migratory fishes, such as tuna and mackerel (*Scombridae*), are represented by few remains belonging to large individuals that probably were caught offshore with the help of canes or boulters.

Among molluscs<sup>23</sup>, cockles (*Cerastoderma edule*) are present with percentages of 74 % from ‘Tank 52’ and 58 % from ‘Area C’. There are also a few remains of clams (*Ruditapes decussatus*), murex (*Hexaplex trunculus*) and limpets (*Patella* spp.) (tab. 9).

Taxa	‘Tank 52’	‘Area C’
	NISP	NISP
<i>Patella caerulea</i>	8	201
<i>Patella rustica</i>	2	16
<i>Patella aspera</i>	–	5
<i>Haliotis tuberculata</i>	–	1
<i>Steromphala varia</i>	1	14
<i>Phorcus turbinatus</i>	2	65
<i>Trochidae da det.</i>	–	5
<i>Columbella rustica</i>	3	2
<i>Cerithium vulgatum</i>	4	32
<i>Luria lurida</i>	–	3
<i>Hexaplex trunculus</i>	11	106
<i>Conus ventricosus</i>	–	1
<i>Stramonita haemastoma</i>	–	1
<i>Spondilus gaederopus</i>	–	2
<i>Ostrea</i> sp.	–	7
<i>Pectinidae ind.</i>	–	1
<i>Callista chione</i>	–	1
<i>Acanthocardia aculeata</i>	–	1
<i>Cerastoderma edule</i>	662	883
<i>Venus verrucosa</i>	1	–
<i>Ruditapes decussatus</i>	46	94
<i>Sepia</i> sp.	12	6
und. <i>Mollusca</i>	–	2
und. <i>Helicidae</i>	139	62
<b>Total</b>	<b>891</b>	<b>1511</b>

Tab. 9 Tas-SilĠ: Numbers (NISP) of sea molluscs for sample. Numerous but hardly quantifiable fragments of sea urchins and crabs come from the ‘Tank 52’. For what concerns ‘Area C’, the count has been conducted in a more precise way (N = 1367). From this sample, it was possible to identify, in addition to fragments of endoskeleton (N = 893) and spines (N = 79), numerous elements of the so-called lantern of Aristotle (N = 395), which corresponds to the buccal apparatus of the sea urchin.

## Conclusion

Although the island was conquered in 218 BC, for more than a century “many aspects of Punic culture and ideology remained well established, mainly in the sphere of religion and funeral rituals”<sup>24</sup>. This can be also noted in animal use for ritual practices, which seem more connected to rituals related to Astarte than to the cult of Hera/Juno<sup>25</sup>. In this way, it is not significant what ‘is present’, but rather what ‘is not present’ in terms of animal remains. The total absence of pig remains in ‘Tank 52’<sup>26</sup> should be highlighted, since this animal was considered impure in the Semitic region from which the Phoenicians came. The Romans evidently excluded the pig from the *hostiae animales* in order to respect the religious sensitivity of indigenous people.

Moreover, the high prevalence of dove and turtledove remains is likely related to Astarte, since these animals were sacred to her<sup>27</sup>. The so-called “Feast of the Good Crossing” was celebrated in the sanctuary dedicated to Venus, whose Phoenician-Punic building is linked to the cult of Astarte. The myth predicted that doves were leaving to escort Venus on her journey towards Libya<sup>28</sup>.

In the Maltese sanctuary, food was consumed during all ritual practices such as sacrifices, ritual banquets and libations. The ways these practices were carried out are partially known thanks to written and iconographic sources. The food was offered to the deity on the altar. Part of this was partially consumed by the officiant and part was given to those who were offering the sacrifice<sup>29</sup>. Some rules governing these sacrifices are described in the so-called “Marseilles tariff”, written between the end of the 4<sup>th</sup> and the beginning of the 3<sup>rd</sup> century BC. The most valuable animal was the ox, followed in order of importance by deer, calf, ram, goat, lamb, and birds. All of these animals are well represented in the two assemblages analysed here.

The consumption of animals as food is attested by the huge amount of faunal remains recovered from inside ‘Tank 52’ and by the pottery types related to consumption (51.4%), a higher percentage than those relat-

ed to rituals and ceremonial activities (35.7%)<sup>30</sup>. The preparation and cooking of food was probably a widespread practice within the sanctuary.

Domestic caprines, a higher percentage of sheep than goats, were mostly killed between the ages of 6 and 12 months. The anatomic portions present indicate a relative balance between the different parts of the body, indicating that the animals were probably brought whole into the sanctuary and not just as portions of meat<sup>31</sup>. There is a slight predominance of the bones of the hind limb, in contrast to what was observed by Corrado et al. in the assemblage from the southern area, where those of the anterior limb prevailed<sup>32</sup>. Furthermore, the right skeletal elements of these limbs seem to be more frequent than those of the left side (with the exception of the metacarpus), perhaps testifying a practice similar to the one described in Leviticus (7,32) in which the right thigh belonged to the priest. In this case, therefore, the portions for the pilgrims would be present; although the small size of the sample leads us to consider these data with great caution.

In the area excavated by the University of Malta there is not a large variety of animals, 96% of the remains belong to caprines and the rest to bovines. Similarly, in the two samples under consideration, cattle bones are not abundant, but it must be considered that the sacrifice of an ox was rather expensive and perhaps only undertaken in exceptional cases<sup>33</sup>.

Finally there are numerous remains of sea animals, such as molluscs, echinoderms, and fish. Their high percentage<sup>34</sup> among the animal remains reflects the importance of sea food for the Phoenician-Punic culture<sup>35</sup>. Among fish, there are species of high quality, especially *Sparidae*, *Serranidae*, and *Scaridae* (fig. 7). Concerning the high quality of *Scaridae* and *Sparidae*, Athenaeus in the *Deipnosophists* asserted that “not even scraps are given to throw away to the gods”.

The consumption of animals as food is indicated by the large quantity of recovered faunal remains and by

24 BRUNO 2004, 18.

25 On the reasons that led to assimilate Hera/Juno and not Aphrodite/Venus, see BRUNO (2004, 118–120).

26 Pigs remains do occur in ‘Area C’, yet in very small number: 21 specimens corresponding to the 1.2% of the domestics.

27 Doves and turtledoves are always associated, even in the Greek world, with the Great Mothers to whom they are often sacrificed (see CATTABIANI 2000, 311–318) as well as among the Jews in whom the sacrifice of doves and turtledoves was foreseen to purify the new mothers (Leviticus 12,8).

28 AELIAN, *De Nat. Anim.* IV,2.

29 AMADASI GUZZO 1988.

30 QUERCIA 2007, 351.

31 Not all parts of the body underwent the same treatment (AMADASI GUZZO, 1988, 100) and could be sold to pilgrims in the sanctuary itself.

32 CORRADO et al. 2004, 50–53, figs 4–5.

33 Even among the Jews the animal sacrifice was provided only in exceptional cases, such as in the atonement of sins committed by an ordained priest (Leviticus 4,3).

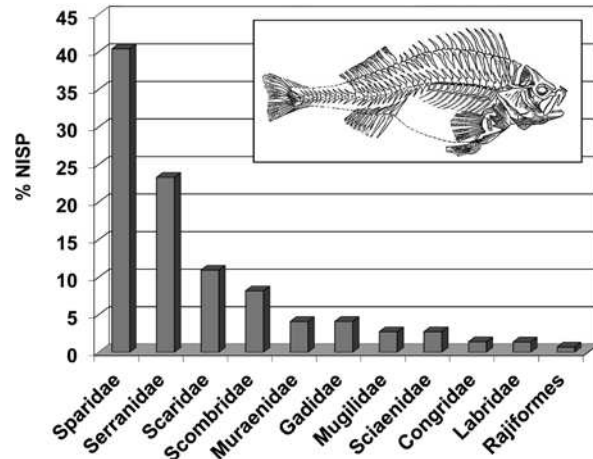
34 The soil of the two samples was completely sieved, this has allowed for the retrieval of even the smallest specimens, such as the various anatomical parts of sea urchin.

35 For a careful assessment of the consumption of fish in the Phoenician-Punic world, see CAMPANELLA / NIVEAU DE VILLEDARY Y MARINAS 2005.



pottery types mainly related to consumption. Food preparation and cooking was probably a widespread practice within the sanctuary. Chemical analysis carried out on organic residues of pottery documents the presence of fatty acids referable to herbivores and marine animals into the pottery used for cooking<sup>36</sup>.

Not only do zooarchaeological data significantly increase our knowledge on the cultic practices carried out in the Sanctuary, they also provide us with a clear insight into the political strategy of the Romans. In fact, although pig actually constituted one of the main *hostiae* in Roman sacrifices, in the Tas-Silġ Sanctuary the pig was not used, so as to not disturb or offend the local people, who might have disapproved of the introduction in the sacred space of an 'impure' animal. Furthermore, animals that were sacred to Astarte but not to Juno, such as the doves, were still largely sacrificed. This may well imply that former cultic practices were still in use.



7 Tas-Silġ: percentages of the different taxa of fishes coming from the 'Tank 52'.

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36 NOTARSTEFANO 2012, 133–138.



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## References of figures

Fig. 1: Courtesy of G. Semerano.

Jacopo De Grossi Mazzorin  
 Dep. of Cultural Heritage  
 University of Salento (Lecce, Italy)  
 via di Birago 64  
 I-73100 Lecce  
 jacopo.degrossi@unisalento.it

## Abstract

This paper describes the study of an animal bone assemblage from a tank (the so called ‘Tank 52’) recovered at the Phoenician and Punic Sanctuary of Tas-Silġ on Malta. During the 2<sup>nd</sup> and 1<sup>st</sup> centuries BC, the tank was used for ablution practise and then it was filled up with ceramics and animal bones. Archaeological excavation carried out in 1968 by the late lamented Prof. A. Ciasca

brought to light a large amount of animal remains, which have been analysed in detail here. The remains mostly belong to sheep and goat and precious families of fishes, such as *Sparidae*, *Serranidae* and *Scaridae*. Results from an analysis using Gas-chromatography suggests that fish carcasses were probably processed and eaten on site. Mollusc remains belong to *Cerastoderma*,

*Tapes* and Cuttlefish. Several spines of sea-urchin and crab chelae were also found. Moreover, it should be highlighted that there is almost a total absence of pig remains, since this animal was considered impure in the

Semitic region from which the Phoenicians came. The Romans evidently excluded the pig from the *hostiae animales* in order to respect the religious sensitivity of indigenous people.

## Zusammenfassung

### Rituelle Praktiken auf der Grundlage von Tierresten aus dem Heiligtum der Juno von Tas-Silġ

Die Ausgrabungen im phönizisch-punischen Heiligtum von Tas-Silġ im Süden Maltas erbrachten zahlreiche Tierknochen. In dieser Studie werden besonders die Knochen aus einer steingefassten Grube vorgestellt (sog. Tank 52), die im 2./1. Jahrhundert v. Chr. angelegt wurde. Zu Beginn wohl für rituelle Waschungen genutzt, wurde sie mit Keramikscherben und Tierknochen verfüllt. Die bei Ausgrabungen des kürzlich verstorbenen Prof. A. Ciasca im Jahr 1968 geborgenen Knochen stammen vor allem von Schafen und Ziegen aber auch Überreste von zahlreichen unterschiedlichen Fischarten konnten nachgewiesen werden (so z. B. *Sparidae*, *Serranidae* und *Scaridae*).

Die Ergebnisse einer gaschromatographischen Analyse deuten darauf hin, dass die Fische wahrscheinlich vor Ort verarbeitet und gegessen wurden. Molluskenreste gehören zu *Cerastoderma*, *Tapes* und Tintenfischen. Es wurden auch mehrere Stacheln von Seeigel und Krabbscheren gefunden. Hervorzuheben ist das weitgehende Fehlen der Überreste von Schweinen, da dieses Tier den Phöniziern als unrein galt. Die Römer schlossen das Schwein offensichtlich von den *Hostiae animales* aus und respektierten damit wohl die religiösen Riten der einheimischen Bevölkerung.

## Résumé

### Pratiques rituelles établies à partir de restes animaux trouvés dans le sanctuaire de Junon de Tas-Silġ

Cet article présente l'étude d'un ensemble osseux trouvé dans une citerne (la « citerne 52 ») du sanctuaire phénicien et punique de Tas-Silġ sur l'île de Malte. La citerne fut utilisée pour des ablutions durant les 2<sup>e</sup> et 1<sup>er</sup> siècles av. J.-C., puis fut comblée avec de la céramique et des os d'animaux. Des fouilles archéologiques menées en 1968 par la regrettée prof. A. Ciasca ont mis au jour une grande quantité de restes animaux que l'on a analysés ici en détail. Les restes se réfèrent principalement aux moutons et chèvres, ainsi qu'à de précieuses familles de poissons comme les *Sparidae*, *Serranidae* et *Scaridae*. Les

résultats d'une analyse utilisant la chromatographie gazeuse suggèrent que les carcasses des poissons furent traitées et mangées sur place. Les restes de mollusques appartiennent aux *Cerastoderma*, *Tapes* et seiches. On a également trouvé quelques épines d'oursins et pinces de crabes. Il faut en outre souligner l'absence presque totale de restes de porcs, ceux-ci étant considérés comme impurs dans la région sémitique d'où venaient les Phéniciens. Les Romains ont visiblement exclu le porc des *hostiae animales* pour respecter la sensibilité religieuse des autochtones.