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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.

KOLLOQUIEN ZUR VOR- UND FRÜHGESCHICHTE 26

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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	Kerstin P. Hofmann	Alexander Gramsch
Erste Direktorin	Zweite Direktorin	Redaktionsleiter

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

In your hands, dear reader, you hold the 26th 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 26th 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 26th 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

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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 1st–4th 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) 20th–22nd 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 11th–13th 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.

Diversity in unity: Animals in Roman ritual and funeral contexts

by *Sabine Deschler-Erb*

Religion was of great importance in the ancient world, playing a vital role in public and political life, as well as in the life and death of each individual. A common thread amongst most polytheistic ancient religions was the major role of animals in ritual sacrifice and funerary cult. There is a large body of literature dealing with Roman religion, which relies on written and iconographic sources[1]. This, however, refers mostly to the Mediterranean region, and it is unclear how relevant it is to the rituals performed across the many other provinces of the Empire. Furthermore, for the study of the so-called 'mystery cults', which have been transmitted only orally from one follower to the other, the information value of these 'classical' sources is limited.

In the last 20 years bioarchaeological research has become increasingly important for the study of rituals and religion in antiquity, especially in northern Europe, as assemblages from the Mediterranean are still quite rarely analysed and published[2]. Several reviews about animal bone remains in ritual contexts, covering a relatively wide cultural, diachronic and geographical spectrum, have recently been published[3]. It should be noted that many of these volumes lack a synthesis and a conclusion in regards to their religious relevance. Concerning the Roman period, the archaeozoological data from Roman ritual and funeral contexts has been augmented tremendously in the last few years. Mainly the north-western provinces have been the subject of broad and comparative studies[4]. They suggest that a great diversity of cults and rituals co-existed within the Roman Empire. Wherever the Romans went, they brought their Gods with them, but they also accepted, adapted or transformed local Gods. New cults and rituals were developed by integrating aspects of different religions, with variations in different places (syncretism). This can, for instance, be seen through the analysis of bones of sacrificed animals of which there are 17 examples in this volume *(fig. 1)*.

Before bones can provide real information about ancient rituals some questions around methodology must, however, be examined. As usual, the archaeological context is extremely important when analysing bone finds. In ritual contexts this is even more compelling than in profane ones, as detailed observation (e.g. the position of bones in a pit), can give a crucial hint to understand the action. For this reason we decided as editors of this volume to give each contributor as much space as possible for site descriptions and detailed plans.

Many archaeozoologists would have liked to be present on the excavation where the remains they analyse come from. This helps enormously in the interpretation of ABGs (Associated Bone Groups), even if the context they come from was not explicitly sacred, as for instance the case of the multiple dog burial from the amphitheatre of *Viminacium* (Vukovic et al. 237–256). Even if it is clear that these dogs were treated in a very unusual way, the background of this deposit remains less clear. Similarly, the interpretation of the extraordinary sacrifice of two bullocks at *Briga* (Bourgois 1–17) would have been enhanced by a detailed observation and better documentation during the excavation. The sacrifice of cattle actually is rarely proven in archaeology – in contrast to written sources[5]. Therefore the example of *Briga* is an interesting case. The enormous amount of meat produced, which suggests a high number of participants at the feast, and the great importance of the sacrifice(s) is only of real significance if the two bullocks had been buried at the same time. But without seeing the remains *in situ* during the excavation, this is not possible to ascertain.

There are other cases in which the interpretation of a sacred place or deposit was only possible through the analysis of the animal bones, such as the foundations touched by a narrow trench in the *vicus* of Munningen (Deschler-Erb / Schaflitzl 53–60), or the deposit found in front of the southern gate of *Vindonissa,* which was

1 E.g. Rüpke 2016, Scheid 2016.
2 Livarda et al. 2018, 4.
3 E.g. Ekroth / Wallenstein 2013; Jones O'Day et al. 2004; Livarda et al. 2018; Pluskowski 2012.
4 E.g. Lepetz / Van Andringa 2008; Deschler-Erb 2015; Groot 2008; King 2005.
5 Deschler-Erb.

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1 The main archaeological sites referred to in the articles.

first interpreted as a cremation grave and then turned out to be a ritual deposit with 21 oil lamps, coins, and sheep legs[6].

Excavation methods can also have an influence on the bioarchaeological results, especially in funerary contexts. At many excavations, cremations are collected by hand (Lepetz 141–174; Pigière 175–183; Groot 61–78), but if sieving is used, not only the number of human and animal bones increases, but the remains of smaller animals, such as songbirds, fishes and foetal mammals, are more likely to be recovered[7]. In order to identify these bones properly, it is important that the specialist involved in the study is trained not only in human but also in animal bones, and the use of a microscope is vital. This is, unfortunately, often not the case[8]. As a consequence, methodologies for both excavation and analysis should be described in detail in every study, in order to aid reliable and accurate comparative work concerning similarities or diversity of rituals. Through the sieving of sediments from graves and sanctuaries (e. g. in Kempraten: Häberle et al. 79–99), however, the number of finds increases to a great degree. In terms of financial and human resources, it is not possible to analyse all of them, and sampling strategies need to be developed. These discussions around methodology will hopefully continue in the future and lead to improvements in the recovery and study of animal finds.

So far the data available suggest that cremation was the most important Roman burial method over a long period of time, and fire played an important role for cult and ritual in general[9]. This has the positive side effect that bones are preserved even in regions with acidic soils, as for instance in southern Netherlands (Groot 61–78). Cremated bones have even helped to identify the first phase of the sanctuary in the western civilian settlement of the legionary fortress of *Vindonissa*, where the archaeological structures remained unclear[10]. By comparing ritual deposits from the Gaulish and Germanic provinces, it can be seen that burnt offerings were rare, but their frequency increased with Roman influence, mainly in public cult[11]. Burnt offerings were also rare in other regions of the Roman Empire, such as Britannia, although new research in that part of the empire has shown that this was a part of accepted orthopraxy in certain ritual contexts (Rainsford et al. 185–199).

In the majority of cases animal bones from sanctuaries, however, are unburnt. Archaeozoologists tend to interpret them often as the remains of feasting, as can be seen in this volume (Bourgois 1–17; De Grossi Mazzorin 25–37; Kunst et al. 123–140; Häberle et al. 79–99; Trentacoste 217–236; Höpken / Fiedler 113–121; Höpken / Berke 101–111). Feasting played a very wide-ranging social and political role in societies all over the world, e. g. in the form of meat sharing in geometric and archaic Greece (Sossau 201–215), and it is therefore an important topic in ethnography and archaeology[12]. The problematic interpretation of animal bones as the waste from feasts has recently been discussed again by Rowley-Conwy[13]. This interpretation can logically be made for stratified material from sanctuaries, but it is much harder to do for bone remains which have been found in a domestic context. A. Trentacoste (217–236) mentions several criteria which are helpful for the interpretation of bones found in a semi-subterranean shrine at Orvieto/Italy. These criteria include the occurrence of a large quantity of well-preserved bones, the special location, and the presence of banqueting ceramics. Other finds (e. g. ceramics, glass, and metal objects) are also important factors[14], although some uncertainty will probably never be completely eliminated. The existence of universal rules in terms of how the remains of feasting will look is unrealistic. Each case must be evaluated separately.

This volume also presents other kinds of deposits. A significant example is the *Ploutonion* of *Hierapolis*, where animals were sacrificed by suffocation caused by toxic

6 Trumm et al. 2019.
7 Cf. Baerlocher et al. 2013.
8 Deschler-Erb et al. in print.
9 Cf. Deschler-Erb 2015, 46–47.
10 Lawrence 2018, 111.
11 Deschler-Erb 2015, 161–165.
12 Cf. Dietler / Hayden 2001; Jones 2007; Hastorf 2016.
13 Rowley-Conwy 2018.
14 Cf. criteria catalogue in Deschler-Erb 2015, 119–144.

2 Relief showing a *suovetaurilia*, a Roman sacrifice in which a pig, a sheep, and a bull were sacrificed (Musée du Louvre, numéro d´inventaire MA1096).

fumes. This is a case where the written evidence and the animal remains complement each other well (De Grossi Mazzorin / Minniti 38–52). The multiple deposits with mandibles of cattle, pig, and sheep/goat which have been found in the *Domna* and *Domnus* sanctuary of Sarmizegetusa are also remarkable. It's likely that they are food offerings for the Gods (Höpken / Fiedler 113–121), which could be related to a local tradition. Overall, there is a large variety of animal rituals perceivable from Roman bone complexes, but there is a shortage of archaeozoological studies – not only in this volume, but also in general – which reflect the public Roman animal sacrifice described by ancient authors or depicted on Roman reliefs, such as the killing of a single bull or of a *suovetaurilia (fig. 2)*[15]. This kind of sacrifice was probably too rare to leave its mark in the archaeological record.

When archaeologists are excavating a sanctuary or a ritual deposit the first question is often to which deity or deities it was dedicated. Sometimes archaeological finds are helpful and there are several examples given in this volume, such as the curse tablets dedicated to *Mater Magna* from the sanctuary of Kempraten-Seewiese (Häberle et al. 79–99). At this site a mithraeum has also been identified by the standardised structures which can be found in every region of the Roman Empire[16]. So-called 'snail pots' in the ritual pit of Straubing speak in favour of *Sabazios* (Höpken / Fiedler 113–121). In *Carnuntum* a consecration inscription and snake-decorated pottery indicate the veneration of *Jupiter Heliopolitanus* (Kunst et al. 123–140). In Sarmizegetusa a consecration inscription has been found mentioning *Domna* und *Domnus*, two local deities (Höpken / Fiedler 113–121). In other cases texts from ancient writers help to identify the gods which have been venerated in the sanctuaries: for example *Pluto* in *Hierapolis* (De Grossi Mazzorin/ Minniti 39–52) and *Juno* in Tas Silġ/Malta (De Grossi Mazzorin 25–37). The bone assemblages which have been found in all of these sanctuaries differ completely

15 Rüpke 2016; Scheid 2016.

16 Martens 2004.

from each other in many respects, such as animal species (domestic and wild), skeletal parts, ages, and treatment (burning, butchering/feasting, deposits of whole animals or parts of them). Unfortunately, for each of these deities in general only one sanctuary has to date been analysed archaeozoologically. Therefore it cannot be said if there is a bone spectrum specific for a single deity. An exception is *Mater Magna* which has been worshipped together with *Isis*. There are three sites which are dedicated to at least one Goddess and which have also been analysed archaeozoologically: *Baelo Claudia*/ Spain[17], Mainz/Germany[18], and Kempraten-Seewiese (Häberle et al. 79–99). At these three sites birds play a special role. It could be concluded that birds, mainly domestic chicken, played a special role in female cults. In *mithrea*, however, there is also a dominance of chicken, but in the mithraeum of Tienen only cocks were present, which fits with the hypothesis that this cult was accessible only for men[19]. Though the structures of *mithrea* look very similar across the whole Empire, there are differences in the animal bone remains, mainly concerning the chicken, but also the pig and sheep/goat bone frequency[20]. It is therefore quite possible that regional differences and varieties existed in animal sacrifices for other cults.

One possible reason for these differences could be the different economic bases in the various regions of the Roman Empire[21]. These are related to natural (e. g. climate, ecology, soil conditions, topography), cultural (e. g. trade routes, agriculture), and political factors, and had an influence on rituals and the animals offered. The mutual dependency of economy and rituals is the subject of ongoing discussions[22]. In this volume Häberle et al. 79–99 compare the archaeozoological results from the residential area and two different sanctuaries (Gallo-Roman/*Mater magna* temple and *mithraeum*) within the same vicus. Commonalities (mainly concerning domestic mammals) could only be seen between the residential area and the Gallo-Roman temple area. A special fishing activity which can probably be traced back to an indigenous tradition, however, is only attested at the sanctuary. It can be concluded that the identity of the people who visited this sanctuary and sacrificed animals played an important role. Even if these people were living in the Roman Empire their sacrifices were more linked to Celtic than Roman customs. A similar case is presented by De Grossi Mazzorin 25–37 with the example of the *Juno* temple in Malta. The temple was first devoted to the Phoenician goddess *Astarte*. After the Roman occupation of 218 BC, the deity was assimilated to the Roman Goddess *Juno*. Among the bones from the Roman period there is an almost total absence of pig remains. Since this animal was considered impure in the Semitic-Phoenician culture, it is likely that in the Roman period people continued to show consideration for this tradition.

The faunal remains from a 4th century Church in ʼAin el-Gedida in the Egyptian desert are found in a completely different context, but the question of identity is also important here. An unusual predominance of pig bones is attested and according to the authors, this reflects the diet and economy of the early Christian communities (Crabtree / Campana 19–24). Thus, eating or not eating pork is not only a question of religion, but also identity and economy.

Identity also plays a crucial role in burials, even though it has to be considered that animal deposits in tombs do not necessarily reflect the food habits of the living. Pigs and chicken are typically found in burials in many regions of the Roman Empire. However, compared to Pompeii, there is an abundance and diversity of meat in the burials of northern France, which continued from the Iron Age to the Roman period (Lepetz 141–174). The same can be said for southern Belgium (Pigière 175–183) and the Roman Netherlands (Groot 61–78). In the burials dated from Late Antiquity, the significance of chicken increases and one could ask whether there is any relationship with the mystery cults that became important at the same time. Nevertheless, there are notable regional differences also in burials. As an example, F. Pigière 175–183 discusses the deposition of geese (domestic or graylag) in graves of modern southern Belgium, which can't be observed in other regions.

The papers within this volume show the great diversity in animal bone assemblages from ritual and funerary contexts, in terms of local, social, economic, and political aspects. There is a fascinating coexistence of continued, but modified, indigenous traditions and the introduction of completely new cults. Archaeozoology can contribute a great deal to our understanding of the aspects of continuity, adaption and change, because archaeozoologists are often working on different periods and therefore have a broad knowledge of these processes. Therefore, the analysis of animal bone remains should be intensified

17 Lignereux / Peters 2008.
18 Hochmuth et al. 2005, Hochmuth / Witteyer 2008.
19 Lentacker et al. 2004.
20 Deschler-Erb 2015, 211–213.
21 E. g. Groot / Deschler-Erb 2015.
22 E. g. The Oxford Roman Economy Project Conference "The Economics of Roman Religion" on sept 22/23 2016, http://oxrep.classics.ox.ac.uk/pages/the_economics_of_roman_religion/.

because it can give a new impetus to the study of religion, a highly controversial topic of our time.

Although the ICAZ RPWG in Basel had contributions from both the western and eastern parts of the empire, studies from western Latin speaking areas dominated the programme. For future meetings we would like to try and address this imbalance so that both areas are more equally represented. The Eastern empire plays a particularly important role, as it was influenced by the Greek-Hellenistic culture and persisted for longer. The whole Mediterranean area and beyond was involved in the economic and cultural networks of the Roman Empire, and all regions are important to understand the overall system. Through this volume, we are taking some early steps in this direction (De Grossi Mazzorin / Minniti 39–52; Crabtree / Campana 19–24), and we are confident that further working group meetings will benefit from more discussion from the Eastern Provinces. In addition, our links with other disciplines such as classical archaeology (see Sossau's chapter 201–215), archaeobotany, history, and iconography are also important, and should be developed further in future meetings.

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Fig. 1: G. Rasbach, RGK. – Fig. 2: Musée du Louvre.

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Deux dépôts exceptionnels à *Briga* (« Bois l'Abbé » Eu, France) : Le sacrifice de bovins au IIIe siècle de notre ère

de *Alice Bourgois*

Mots-clés

« Bois l'Abbé », Eu (Dép. Seine-Maritime, Normandie), sacrifice, rituel, offrande, bovin, bouvillon

Schlüsselwörter

„Bois l'Abbé", Eu (Dép. Seine-Maritime, Normandie), Heiligtum, Opfer, Rinder

Keywords

"Bois l'Abbé", Eu (Dép. Seine-Maritime, Normandie), sacrifice, ritual, offering, ox, bullock

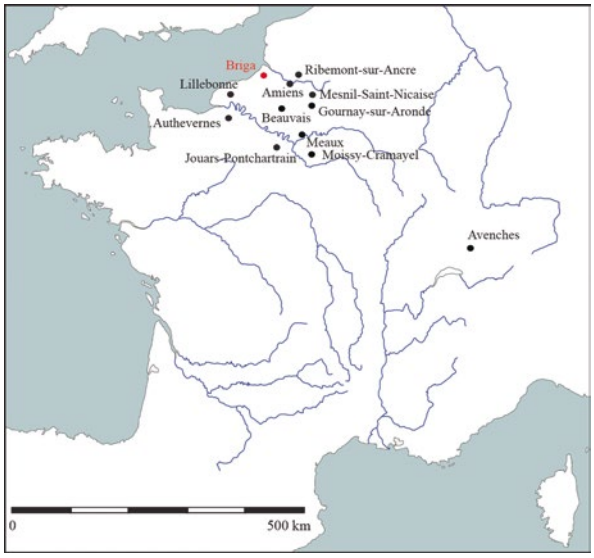
La plupart des dépôts d'ossements animaux découverts dans l'agglomération antique de *Briga*, située au lieu-dit du « Bois l'Abbé » à Eu, en Seine-Maritime (France), sont composés de restes de moutons[1]. Toutefois, deux inhumations de jeunes bovins décharnés ont été fouillées en 2009[2]. Ces structures se démarquent des autres dépôts par leur taille, leur composition, leur excellente conservation, leur ordonnancement et leur localisation. Cette découverte exceptionnelle dans l'enceinte sacrée du sanctuaire monumental présente un très grand intérêt pour l'étude des pratiques rituelles en Gaule romaine.

Le site de « Bois l'Abbé » : une bourgade oubliée du nom de *Briga*

Découvert à la fin du XVIIIe siècle, à la lisière de la forêt d'Eu, près de la frontière septentrionale de la Normandie *(fig. 1)*, le site archéologique du « Bois l'Abbé » appartenait à l'ancienne catégorie des « grands sanctuaires ruraux » du nord de la France[3]. Les recherches archéologiques récentes, en particulier les campagnes de fouilles successives menées sous la direction d'Etienne Mantel entre 2006 et 2018, ont permis d'écarter définitivement cette théorie désuète de grand sanctuaire rural. C'est une véritable petite ville qui s'étend sur plus de 60 hectares sous le couvert forestier du « Bois l'Abbé ». L'agglomération était implantée sur le point culminant du plateau naturel entre la vallée de la Bresle et le vallon de Saint-Pierre-en-Val. Suite à la découverte de la plaque dédicatoire de la

1 Bourgois et al. 2019.
2 Mantel 2010, 56.
3 Mangard 2008, 199.

doi: 10.34780/rwda7nbbc6



1 Carte des sites évoqués dans le texte.

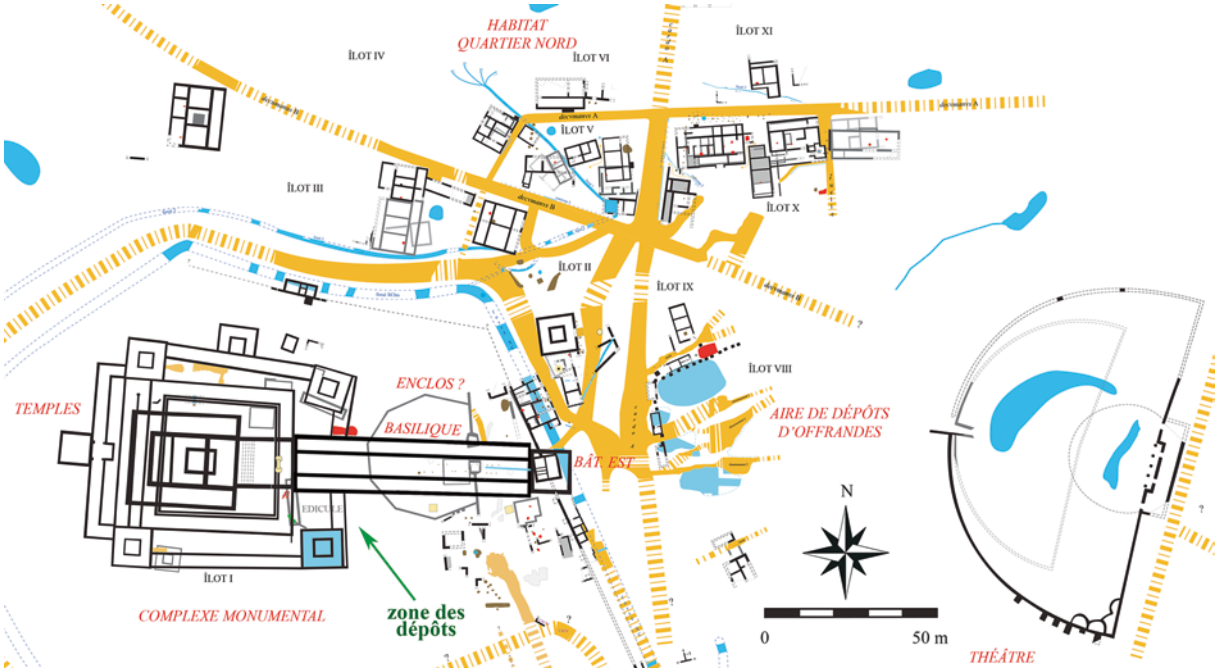
basilique mentionnant comme divinité tutélaire le dieu Mercure sous la formule *Mercurio Brigensi*, le site archéologique du « Bois l'Abbé » a été rebaptisé *Briga* dans une partie de la documentation[4]. Cette bourgade, située à environ 105 km de *Juliobona* (Calètes), 76 km de *Samarobriva* (Ambiens) et 92 km de *Caesaromagus* (Bellovaques), semble être le chef-lieu d'un *pagus* méconnu installé à la frontière de ces trois cités : le *pagus* des *Catuslugi*, mentionné sur la plaque dédicatoire de la basilique ainsi que sur celle du théâtre[5]. En l'état actuel des connaissances, ce *pagus* paraît plutôt rattaché à la cité bellovaque, bien qu'une partie des chercheurs privilégient toujours l'hypothèse d'une subdivision du territoire ambien[6].

Les opérations archéologiques actuelles s'inscrivent dans un projet collectif de recherches associant la Direction Régionale des Affaires Culturelles de Normandie à l'université de Strasbourg, elles portent sur différents secteurs de l'agglomération : le quartier nord qui correspond à un quartier résidentiel des IIe et IIIe siècles, la zone d'habitats précoces au sud (Ier siècle), l'aire de dépôt rituels du Haut Empire à l'Est et le centre monumental composé d'une série de temples (un grand temple hexastyle central et six temples à plans centrés, ou *fana*, périphériques), d'une basilique et d'au moins deux bâtiments dont le rôle n'est pas certain *(fig. 2)*. C'est sous le centre monumental que les niveaux les plus anciens ont été découverts, notamment une aire de dépôts rituels du second Age du Fer, caractérisée par une terre très sombre et organique, riche en offrandes et en restes de banquet. Après la monumentalisation du sanctuaire qui recouvre ces « terres noires », les dépôts rituels se poursuivent dans le secteur Est et, dans une moindre mesure, dans le sanctuaire où des animaux sacrifiés sont ensevelis devant les façades des différents *fana*. Ces dépôts de carcasses animales se poursuivent jusqu'à la fin du IIIe siècle. Dans le dernier quart du IIIe siècle, l'agglomération est massivement désertée et les bâtiments du complexe monumental commencent à être démantelés. La ville abandonnée a servi de carrière durant tout le Haut Moyen Age jusqu'à ce que la forêt d'Eu recouvre presque intégralement les ruines de l'ancienne *Briga*.

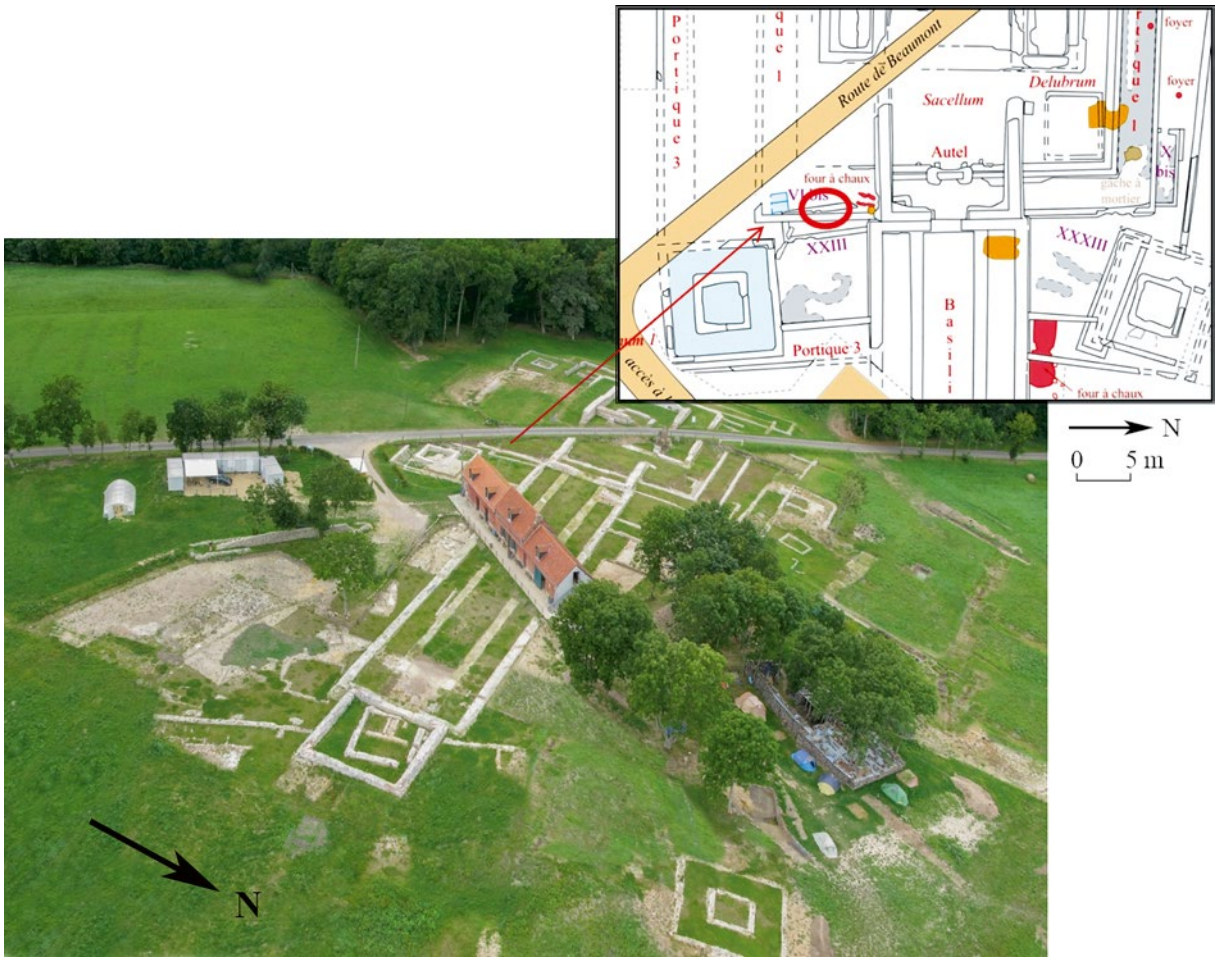
Les dépôts dont il est question ici ont été datés de la fin du IIIe siècle. Ils se présentent sous la forme de deux fosses ovoïdes, mesurant respectivement 120 cm par 80 cm et 100 cm par 50 cm, peu profondes, creusées de part et d'autre de la fondation du mur externe de la galerie ouest d'un ancien portique arasé à la fin du IIe siècle pour être remplacé par un autre portique embrasant un secteur plus vaste. Les fosses sont enserrées par les vestiges d'un petit bâtiment oblong de la première moitié du Ier siècle de notre ère et d'emploi inconnu, appelé édicule, lui aussi désaffecté au moment de la déposition des carcasses *(fig. 3)*. Cet édicule est d'ailleurs scindé en deux parties par le mur du premier portique. Ces deux parties correspondent aux espaces VI bis, à l'ouest et XXIII à l'est, les deux fosses ont donc été enregistrées dans leur espace respectif comme les U.S. 2 6 bis 10 et 2 23 10[7]. Dans cet article, pour plus de fluidité, nous renommerons le dépôt 2 6 bis 10 « dépôt ouest » et le dépôt 2 23 10 « dépôt est ». Les deux fosses se superposent aux murs arasés de l'édicule et entaillent la fondation de l'ancien portique *(fig. 4)*. La stratigraphie du secteur, la position spatiale des creusements et l'agencement des deux dépôts montrent qu'ils ont été fait dans la même temporalité, sur une période très courte voire simultanément, mais la rupture que constitue l'ancien mur du portique entre les deux fosses et l'absence de mobilier datant dans la fosse est ne permet pas d'affiner cette contemporanéité (les deux dépôts sont-ils espacés de plusieurs années, mois, semaines ou de quelques heures ?).

A la fin du IIIe siècle, la zone où sont creusées les deux fosses est désormais une vaste cour étendue d'ouest en est, entre le grand temple et le dernier état du portique qui enceint le sanctuaire ; cette cour est fermée au nord par le *sacellum* et au sud-est par le temple en eau[8].

4 Mantel et al. 2007.
5 Mangard 1982.
6 Pichon 2015.
7 Mantel et al. 2010, 55.
8 Le temple en eau est un *fanum* équipé d'un niveau de sol étanche composé de mortier de tuileau et bordé, formant ainsi un bassin peu profond en guise de niveau de circulation (Mantel et al. 2009, 75).



2 Plan du centre de l'agglomération de *Briga* – état de la recherche 2016 (dessin numérique A. Bourgois, E. Mantel, J. Paretias).



3 Localisation des dépôts dans le centre monumental de *Briga* (cliché aérien S. Charrier 2010, dessin numérique A. Bourgois, E. Mantel).

4 Emplacement des dépôts de part et d'autre de la fondation arasée de l'ancien portique, avec en haut à droite un bassin abandonné au milieu du Ier siècle de notre ère (cliché E. Mantel).

Un four à chaux est installé à quelques mètres des deux dépôts, peu de temps après l'enfouissement des carcasses, au début de la phase de récupération des matériaux dans le dernier quart du IIIe siècle. Les dépôts de bovins se trouvent ainsi face au grand temple, à une douzaine de mètres de l'autel principal (dont il ne reste aujourd'hui que le socle), bien que le mur sud du *sacellum* ne permette pas une liaison directe et empêche toute visibilité sur la cour depuis les marches de l'escalier monumental *(fig. 2 et 3)*. Toutefois, il est possible qu'une porte soit implantée dans ce mur et ouvre un passage vers la cour sud[9]. Cet emplacement spécifique des deux dépôts au sein de l'espace sacré laisse entrevoir leur dimension rituelle et leur lien avec l'activité religieuse.

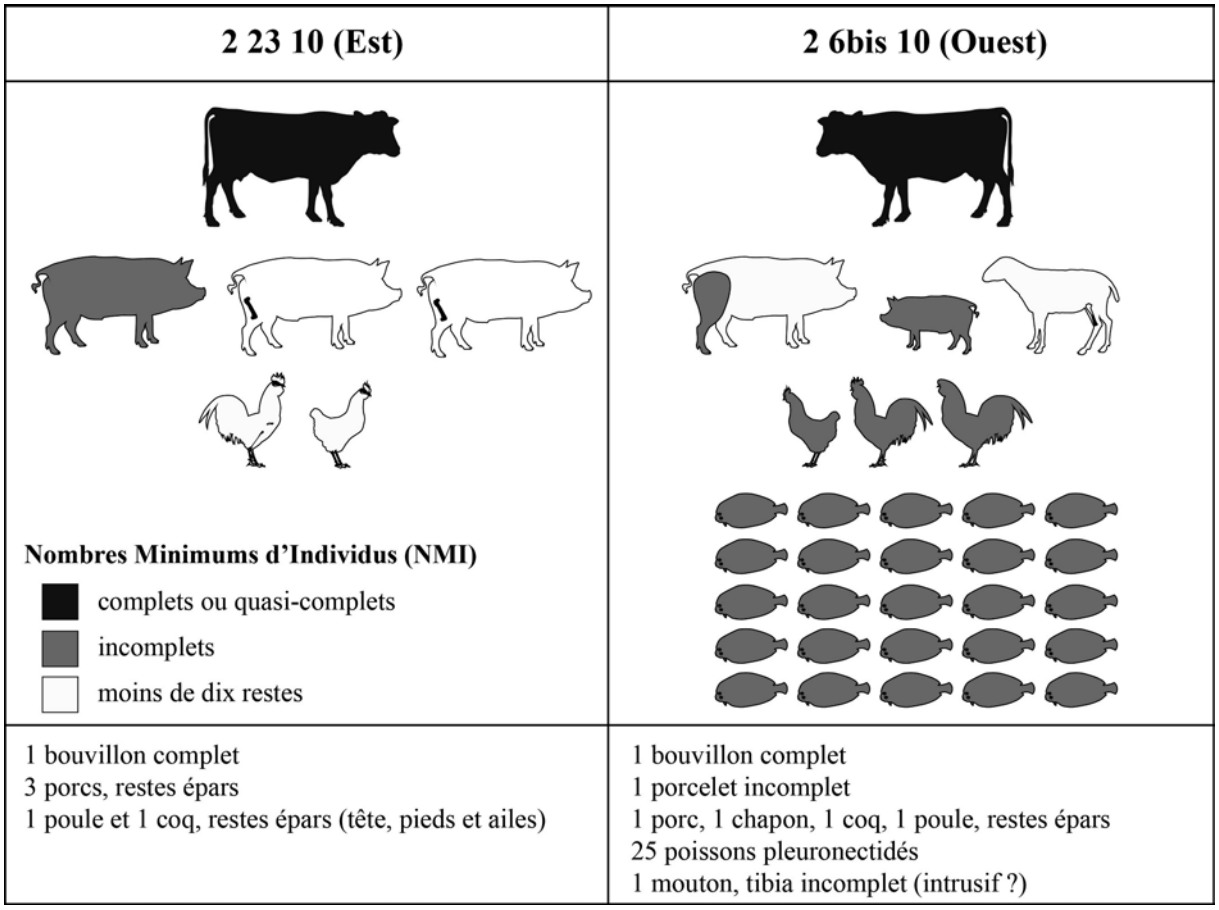
Composition des deux dépôts de la fin du IIIe siècle

Les deux dépôts ont été repérés en 2007, ils ont fait l'objet d'une fouille minutieuse en 2009, associée au tamisage sur terre humide de l'intégralité de leur comblement (mailles de 2 et 5 mm) qui a permis de récupérer les ichtyorestes. La fosse ouest contenait 1545 restes, pour un poids total de 18 kg et la fosse est contenait 790 restes pour un poids total de 16,5 kg. L'essentiel de ces ossements, soit 62 % des restes de la fosse ouest et 77 % de ceux de la fosse est, correspond aux différentes parties squelettiques de deux jeunes bovins (*Bos taurus*). Outre les deux carcasses de bovins (une par dépôt), les deux fosses contenaient des restes de porc (*Sus scrofa domesticus*) et de coq (*Gallus gallus*). La fosse ouest comportait également un grand nombre d'arêtes et de vertèbres de poissons de la famille des pleuronectidés. La partie distale du tibia gauche de capriné, découverte dans la fosse ouest, est sans doute intrusive. Les éléments indéterminés des deux fosses (3,5 % du poids des restes) sont des esquilles de grand bétail, vraisemblablement des fragments de crâne et de côtes de bovins, abîmés par le séjour en terre, et onze restes d'oiseaux indéterminés issus de la fosse ouest. Au total, la fosse ouest contenait les restes d'au moins sept animaux terrestres différents (quatre mammifères et trois oiseaux de basse-cour) et d'une vingtaine de poissons. Ces ossements animaux étaient accompagnés d'un gobelet en céramique à décor guilloché complet mais retrouvé brisé et de six monnaies, dont un antoninien de l'empereur gaulois Tetricus (≈ 271–274) qui conforte l'hypothèse d'un ensevelissement postérieur à 269–270[10]. La fosse est, quant à elle, contenait les restes d'au moins quatre mammifères et de deux gallinacés différents *(fig. 5)*, sans aucun mobilier archéologique associé.

Les bovins

Les seuls animaux complets[11] des deux fosses sont les bovins, c'est sur ces deux individus que l'étude va s'attarder le plus longuement. Ces deux animaux sont jeunes et d'âges similaires, néanmoins les deux méthodes classiquement utilisées pour estimer les âges des animaux (éruption dentaire et épiphysation du squelette) ont donné des informations partiellement contradictoires. L'examen des mandibules découvertes dans la fosse de l'est permet d'estimer que l'animal avait entre 28 et 36 mois au moment de sa mort[12]. Les épiphyses soudées des phalanges proximales indiquent également que l'animal avait plus de 18 mois ; en revanche, les épiphyses distales

9 Mantel et al. 2016, fig. 144.
10 Mantel et al. 2010, 56.
11 Les squelettes de bovins ne sont pas véritablement complets, une dizaine d'os manquent sur chaque squelette ; une partie des éléments manquants (notamment des éléments du carpe et du tarse ainsi que la plupart des sésamoïdes) ont probablement disparus lors des manipulations des couches stratigraphiques, car le secteur des temples a été grandement remanié au Moyen Age et à l'époque moderne. Il manque également deux phalanges proximales et trois phalanges médiales au bovin de la fosse ouest.
12 Silver 1969, 296; Schmid 1972, 77.



5 Nombres minimums d'individus schématisés dans les dépôts est (2 23 10) et ouest (2 6bis 10).

non soudées des métapodes issus de la même fosse donne une estimation en dessous de 20–24 mois[13]. Le bovin du dépôt ouest pose le problème inverse : il présente une dentition plus jeune que son homologue oriental avec un âge compris entre 24 et 28 mois, mais les deux paires de métapodes ainsi que les ulnas fournissent une estimation située au-delà de 24–30 mois mais avant 36 mois. Ces divergences entre les usures dentaires et la croissance des os peuvent avoir différentes origines. Il est possible que lors de l'ensevelissement des carcasses, les fossoyeurs aient inversé, volontairement ou accidentellement, une partie des ossements, notamment les pieds ou les mâchoires, mais cette hypothèse n'est valable que si l'on admet que les deux dépôts sont simultanés, or ce point est encore à débattre. Une autre éventualité serait un retard des épiphysations lié à la castration, au moins sur l'animal du dépôt est.

On ne peut développer les questions relatives à la castration sans se pencher sur le sexe originel des deux animaux : veaux ou génisses ? Le traitement appliqué aux carcasses et le jeune âge des bovins, complexifie la détermination. En effet, une grande partie des méthodes employées pour différencier les mâles des femelles n'ont pas pu être utilisées. La première, basée sur l'examen des chevilles osseuses et la forme du crâne[14] est inapplicable ici puisque les cornes ont été prélevées et que les crânes sont trop fragmentés *(fig. 6)*. La seconde méthode, sur la forme du pubis, est une technique relativement fiable pour des animaux adultes mais pas dans le cas de bovins immatures ; en l'occurrence, les quatre coxaux découverts dans les deux fosses présentent des caractéristiques plutôt masculines, mais les animaux demeurent trop jeunes pour que ces critères soient pris en compte *(fig. 7)*. La dernière méthode fait intervenir l'ostéométrie. Là encore, seules les parties anatomiques ayant atteint leur taille adulte sont mesurables. Les ossements entiers et épiphysés se limitent aux phalanges des deux fosses et aux métapodes du bovin de la fosse ouest. En utilisant ces données métriques, on constate que le bovin de la fosse ouest est très certainement un mâle, car les me-

13 Barone 1986, 76.

14 Chaix / Méniel 2001, 78.

6 Crâne fragmenté et remonté du bouvillon de la fosse est, il présente des traces de décapitation (section des condyles occipitaux).

7 Vue médiale des coxaux droits des deux jeunes bovins.

sures prises sur les phalanges se rapprochent des gabarits masculins obtenus pour d'autres sites, comme Amiens – quartier du Palais des Sports[15]. Celles des paires de métacarpes et métatarses sont également similaires aux métapodes des mâles du Nord de la Gaule[16]. Grâce à ces mêmes mesures, la hauteur au garrot du jeune bovin de la fosse ouest a pu être estimée entre 1,39 m ou 1,41 m[17]. Il s'agit d'une taille standard pour un bœuf romain dans le nord de la Gaule puisque la moyenne se situe vers 1,46 m pour les individus castrés[18]. Le second bovidé paraît très légèrement plus petit, mais l'écart est si réduit que l'on peut supposer qu'il s'agit également un mâle.

Alors, ces deux jeunes mâles sont-ils castrés ? Les effets généraux de la castration sur les stades épiphysaires sont mal connus, de même, il existe d'infimes variations des stades épiphysaires entre mâles et femelles. Néanmoins, on sait qu'ils touchent les métapodes en provoquant un certain retard de l'âge de suture[19], d'où l'hypothèse d'au moins un castrat parmi les deux victimes, sa présence expliquerait les anomalies dans le calcul des âges d'abattage. En ce qui concerne la castration des bœufs de labour, l'agronome romain du Ier siècle de notre ère Columelle explique qu'elle s'effectue généralement entre un et deux ans[20]. Les deux animaux présents dans les fosses de *Briga* ont vraisemblablement déjà dépassé cet âge, ils sont donc potentiellement castrés. S'ajoute, enfin, une variabilité individuelle consécutive aux modes d'élevage et à la génétique. Il faut également rappeler que les méthodes utilisées en archéozoologie pour l'estimation des âges ne sont pas infaillibles. Dans le cadre d'un sacrifice, les deux types de victimes, veaux castrés (bouvillons) ou entiers (taurillons), peuvent être offerts en fonction des exigences liturgiques[21]. L'intérêt de parvenir à déterminer si les bovins de ces dépôts sont castrés ou non n'est donc pas négligeable.

Les cochons

Le dépôt ouest comprenait un porcelet incomplet abattu entre 8 et 10 mois. La plupart des restes de suidés de la fosse appartiennent vraisemblablement à cet animal. Le deuxième cochon, âgé de 42 mois environ[22], n'est représenté que par un jambon droit. Dans la fosse est, les restes de suidés sont moins nombreux et plus disparate ; ils proviennent d'au moins trois individus différents, bien que le seul os présent en trois exemplaires dans le dépôt soit le fémur droit. Tous les membres disloqués de

15 Lepetz 2010, 421.
16 Lepetz 1996, 36.
17 D'après les coefficients donnés par Matolcsi, cité dans Chaix / Méniel 2001, 58.
18 Lepetz 1996, 40.
19 Guintard / Borvon 2009, 127.
20 Columelle, *De re rustica* VI, 26.
21 Capdeville 1976, 117.
22 Les épiphyses proximales du tibia et de la fibula sont soudées, mais pas le distal du fémur pourtant sensé se souder à la même période, aux alentours de 42 mois (Barone 1986, 76).

8 Talus altéré droit de porc trouvé dans la fosse ouest.

9 Talus altéré droit de porc trouvé dans la fosse est.

cette fosse peuvent en réalité appartenir à plus de trois individus. L'un des cochons était âgé d'environ 42 mois, d'après l'épiphysation du radius gauche. Les jambons droit et gauche proviennent d'un ou plusieurs individus de moins de 24 mois, comme le montrent les épiphyses non soudées des tibias et des fibulas. En outre, deux talus (un dans chaque dépôt) présentaient une altération spécifique, caractérisée par une disparition plus ou moins avancée du périoste dans la partie distale *(fig. 8 et 9)*. Cette altération est similaire à celles observées dans le quartier nord de la ville de *Briga*, à Ribemont-sur-Ancre dans la Somme ainsi que sur d'autres sites. Ces stigmates sont souvent interprétés comme les traces d'une technique de préparation culinaire ou de conservation ; la salaison est régulièrement évoquée[23]. L'archéologie expérimentale n'a jamais permis de vérifier cette hypothèse[24], il semble donc que d'autres phénomènes interviennent dans la détérioration de cette partie osseuse, probablement certains types de cuisson, éventuellement avec salaison et fumaison préalables. La répartition anatomique des restes de porcs découverts dans les deux fosses laisse toutefois présager qu'il s'agit bien de pièces de viandes préparées à l'avance et donc, potentiellement, des salaisons ; pour le porcelet de la fosse ouest, cependant, un doute persiste.

La volaille

Les trois gallinacés de la fosse ouest sont incomplets, il s'agit d'un coq, d'une poule et d'un chapon. L'association des trois sexes est intéressante, elle pourrait revêtir une symbolique particulière ; pour les Romains, les castrats ne sont pas des mâles « diminués » mais des animaux spéciaux, différents des mâles et des femelles, équivalents donc à un troisième sexe[25]. Le déséquilibre entre les parties droites et gauches est également à souligner ; sur les 105 restes de volailles de ce dépôt, 40 d'entre eux sont des membres droits, 18 sont des membres gauches et 14 n'ont pas pu être latéralisés (les 33 os restants sont des éléments du rachis). Il y a donc *a priori* deux fois plus de restes droits que de gauches. Cependant, la présence de deux crânes, de deux séries de vertèbres et de deux sternums permet d'envisager la consommation puis le dépôt d'au moins deux volailles presque entières mais désarti-

23 Fercoq-du-Leslay / Lepetz 2008.
24 Méniel 2001, 24.
25 Capdeville 1971, 287.

10 Emplacement du gobelet à décor guilloché apparu lors de la deuxième passe de la fouille de la fosse ouest (cliché E. Mantel).

culées. Dans le dépôt est, seuls 11 restes de volaille ont été recensés : deux carpométacarpes, deux crânes, quatre tarsométatarses fragmentés en cinq morceaux, un limbosacral et un tibiotarse, ce qui donne un NMI de deux individus, un mâle et une femelle. Là encore, malgré un petit nombre de reste, on constate qu'il y a une sélection de deux sexes différents.

Organisation des dépôts

Dans la fosse ouest, les os longs du bouvillon étaient déposés près de la surface, alignés d'est en ouest. Le coxal droit et les sternèbres du bovin, toujours en connexion mais lacérées par un couteau, ainsi que quelques restes de porcs se trouvaient également dans la partie supérieure du dépôt. Les côtes étaient en vrac dans la fosse, elles ont vraisemblablement été déposées juste avant les membres. La colonne vertébrale, encore en connexion de la troisième thoracique à la dernière lombaire, est apparue lors de la deuxième passe. L'atlas et l'axis toujours assemblés se trouvaient à proximité, au sud-ouest de la fosse. La céramique était déposée entre ces deux parties du rachis *(fig. 10)*. Enfin, au fond de la structure se trouvaient les deux scapulas, les métapodes, les phalanges, les mandibules et le crâne fragilisé par le séjour en terre et écrasé sous le poids des autres restes.

Dans la fosse est, les métapodes droits du bouvillon sont apparus lors de la première passe. Les phalanges distales sont dans un plus mauvais état de conservation que le reste des ossements. Le crâne partiellement fragmenté et fragilisé, le fémur gauche, les plats de côtes du bovin ainsi qu'un fémur de suidé se trouvaient également dans la partie supérieure du dépôt. La deuxième passe a révélé la mandibule droite bien conservée, les deux coxaux désolidarisés, un métatarse planté à la verticale contre la paroi de la fosse, ainsi que les dernières vertèbres thoraciques. Une fois les deux coxaux prélevés, une grande partie de la colonne vertébrale est apparue, appuyée contre la paroi sud de la fosse, elle était connectée depuis l'atlas jusqu'à la cinquième thoracique. Une scapula incomplète de porc se trouvait également à proximité. A l'est de la fosse, reposaient le tibia droit, le talus droit et la partie lombaire de la colonne vertébrale du bouvillon. Dans le fond de la fosse, se trouvaient les membres antérieurs soigneusement alignés sur les deux scapulas *(fig. 11)*. Bien que non soudées, les épiphyses des os longs étaient encore connectées aux diaphyses. Ils étaient accompagnés par un coxal et une mandibule de porc immature et par une partie des hauts de côtes de bœuf.

11 Alignement des membres antérieurs décharnés du bouvillon au fond de la fosse est (cliché E. Mantel).

La viande, les tendons, les cornes et la graisse des deux bouvillons ont été prélevés à l'aide d'au moins deux instruments : un gros ustensile tranchant et une lame plus petite, comme en témoignent les nombreuses et nettes entailles présentes sur la totalité des os et les fines incisions visibles sur les phalanges. L'organisation du dépôt ouest correspond assez bien aux étapes de la découpe bouchère bovine décrites, dans l'ordre, par Yves Lignereux et Joris Peters pour la période romaine[26]. L'ordre de déposition de la fosse est diffère de la fosse ouest bien qu'il reste logique. Contrairement à son homologue ouest, les membres antérieurs du dépôt est ont, semble-t-il, été désossés immédiatement après la levée de l'épaule comme l'atteste l'alignement des os longs au fond de la fosse. Les étapes suivantes sont les mêmes que pour le dépôt ouest : levée de l'échine avec séparation et décarnisation des trains de côtes, puis levée et traitement du membre pelvien. Le seul élément inhabituel est le dépôt des pieds, du crâne et des mandibules en dernier, alors qu'il s'agit normalement de la première étape de boucherie, comme c'est d'ailleurs le cas dans la fosse ouest. Ce choix est peut-être symbolique ou découle plus simplement d'une contrainte technique. Par exemple, si l'animal a été découpé sur sa peau et qu'elle était encore reliée à la tête, aux pieds, voire à la queue, il serait normal que ces parties soient évacuées en dernier, en phase finale de la découpe. On soulignera d'ailleurs la présence de la queue dans le dépôt ouest, alors qu'elle est absente du dépôt est. Elle a peut-être été prélevée, pour la tannerie, pour être exposée ailleurs en commémoration du rituel ou brûlée comme offrande supplémentaire aux dieux[27].

Outre leur emplacement au cœur du sanctuaire, le caractère particulier de ces deux dépôts s'entrevoit ainsi dans leur ordonnancement ; les os n'ont pas été déversés, comme cela est souvent le cas dans les dépotoirs ordinaires, ils ont été déposés à plat et avec minutie, au fur et à mesure de la découpe. Une partie des processus transverses de vertèbres thoraciques et lombaires sectionnés ont également été trouvés dans les fosses. On peut en déduire que le lieu de dépeçage et de préparation de la viande se situait à proximité immédiate des deux fosses, dans l'ère sacrée. La présence d'artefacts dans la fosse ouest, le choix des victimes et la disposition des ossements sont autant d'éléments qui plaident en faveur d'une dimension cultuelle ; l'enfouissement même de ces restes a probablement fait l'objet d'un rituel[28].

Sacrifier les bêtes, nourrir les hommes

Pour être mis à mort, les deux bouvillons ont probablement été assommés avant d'être égorgés[29], malheureusement l'état de fragmentation et de dégradation des crânes ne permet pas de repérer un enfoncement lié à un coup de marteau ou de hache sur le frontal. L'arrière des crânes était mieux conservé *(fig. 4)*, il est donc presque certain que le coup n'a pas été porté sur la nuque comme c'est le cas par exemple dans le sanctuaire gaulois de Gournay-sur-Aronde[30]. Le soin apporté au désossage de ces deux bouvillons contraste avec ce qui est habituellement rencontré dans les boucheries urbaines gallo-romaines, y compris celles situées à proximité des sanctuaires, comme à Meaux ou à Jouars-Pontchartrain[31]. Classiquement, la rapidité de l'action prévaut sur la qualité de la découpe, à toutes les étapes[32]. S'ensuit soit un concassage des os pour extraire la

26 Lignereux / Peters 1996.
27 Dans les sacrifices grecs, la queue fait partie des éléments brûlés sur l'autel (Ekroth 2007), cette pratique semble se poursuivre dans le monde romain où la queue peut correspondre à la *palasea* ou l'*offae penitae* (Arnobe, *Adversus nationes* VII, 24).
28 Van Andringa 2012.
29 Méniel 1992, 19.
30 Brunaux 1997, 580.
31 Lepetz 2007.
32 Canny / Yvinec 2008.

moelle et le collagène, pour le bouillon ou pour l'artisanat, soit une récupération par les artisans pour la fabrication d'objets en os[33]. Ici, les os longs sont tous entiers. Les traces de couperets sont surtout concentrées autour des articulations et au niveau des insertions musculaires difficiles à trancher. Les incisions fines et les coups de couteaux liés à la décarnisation sont au contraire très nombreux. La minutie de la découpe et la non-récupération des ossements pour d'autres activités participent au caractère spécifique de ces deux dépôts qui viennent illustrer les propos sur les connaissances nécessaires à la découpe des chairs du sacrifice de Mary Beard, John North et Simon Price[34]. Le lieu de la découpe est incertain, mais plusieurs contraintes techniques et spatiales doivent être soulignées. L'organisation des deux dépôts, et plus particulièrement celle du dépôt ouest, laisse penser qu'il y a une évacuation des os au fur et à mesure de la découpe des carcasses. Dans le cadre d'un sacrifice, les bœufs sont logiquement abattus près de l'autel, à l'intérieur du *sacellum*, puisque l'examen des *exta* fait partie du sacrifice et suppose que les animaux soient éviscérés à proximité de l'autel[35]. Cet espace autour de l'autel est assez restreint *(fig. 2)* et il est difficile (mais pas impossible) de déplacer les pesantes carcasses en une seule partie. Il a donc très probablement fallu dépecer les animaux sur le lieu de mise à mort, puis les découper en gros quartiers transportables. La deuxième étape de la découpe a ainsi pu avoir lieu ailleurs, y compris à l'extérieur de l'enceinte sacrée. Néanmoins, le fait que les ossements des deux bouvillons soient inhumés dans le sanctuaire, à quelques mètres de l'autel, permet de privilégier l'hypothèse d'une découpe bouchère interne à l'*area sacra*. Cet atelier de boucherie peut être temporaire ou fixe, installé en plein air (dans une cour) ou dans un lieu couvert (dans un portique ou la basilique). Un point d'eau à proximité s'avère nécessaire pour ce type d'activité sanglante et de fait salissante, or la présence du *fanum* en eau permet de supposer que ce secteur du sanctuaire était approvisionné en eau via un système de tuyauterie, mais il reste aussi la possibilité d'utiliser quelques seaux.

Les quatre scapulas présentaient des perforations dues à une suspension à un croc de boucher, ce qui implique la présence d'au moins un support mural ou aérien auxquels ont pu être installés les crochets *(fig. 12)*. La perforation des scapulas est parfois interprétée comme le signe que la palette a été fumée avec l'os, notamment dans les sites suisses et germaniques[36]. Dans le cas de *Briga*, il parait plus vraisemblable d'associer ces perforations à une suspension « simple » ; l'organisation des dépôts et la taille imposante des victimes laissent penser que les animaux ont été dépecés et démembrés sur le dos, à même le sol, sur leur peau étalée[37]. Dans un tel schéma, les membres antérieurs ont été levés en premier pour permettre au boucher d'atteindre la cage thoracique et le rachis. La pièce de viande complète ainsi prélevée est suspendue pour éviter de souiller la viande

12 Exemple de perforation observée sur la scapula droite du bouvillon de la fosse est (cliché A. Bourgois).

33 Rodet-Belarbi 2003.
34 Beard et al. 2006, 34.
35 Van Andringa 2008.
36 Schmid 1972, 42. Selon Elizabeth Schmid, Sabine Deschler-Erb et Maaike Groot, la palette de porc ou de bœuf est fumée avec l'os, l'ensemble est suspendu par un crochet dans un fumoir et la viande n'est désossée qu'après fumage sur le lieu de consommation, les scapulas perforées sont ainsi découvertes dans les dépotoirs des tavernes ou des habitations (Deschler-Erb / Groot 2019, 67).
37 Lignereux / Peters 1996, 48–49.

en l'absence de table. Toutefois, la viande des bouvillons a très bien pu être fumée, soit de manière rapide pour lui apporter une saveur particulière et assainir la viande avant cuisson ultérieure (dans ce cas, l'épaule a éventuellement pu être passée au fumoir avec l'os), soit de manière prolongée pour être conservée longuement, auquel cas la viande de l'épaule aura été désossée au préalable[38]. Et si les palettes ont été fumées, on peut supposer que le reste de la viande l'a également été mais il est impossible de le savoir.

Un bœuf romain d'1,40 m au garrot devait fournir en moyenne 345 kg de matières consommables[39]. Si d'aventure, les deux dépôts sont contemporains, le double abattage de deux bovins engendre la production de près de 690 kg de viande. A ces bœufs s'ajoutent les restes d'un porcelet fendu en deux, quelques morceaux de porcs adultes, plusieurs volailles et d'une vingtaine de poissons. Au total, la quantité de viande et de graisse devait donc avoisiner les 700–720 kg (entre 350 et 360 kg par dépôt). L'énorme quantité de viande laisse présager la distribution ou la vente d'une partie des chairs aux habitants de la ville ou aux fidèles venus au sanctuaire et l'organisation de banquets. Ces derniers peuvent prendre différentes formes. Tout d'abord, celle d'un *symposium* réunissant un nombre restreint de convives, probablement l'élite locale, les officiants et le(s) commanditaire(s) du sacrifice[40]. La présence des petites espèces complémentaires aux deux bouvillons rend crédible cette possibilité ; les poissons, les volailles et les cochons correspondent soit à des offrandes non consommées, soit aux restes d'un repas pris à proximité du lieu du sacrifice par une poignée de privilégiés, la deuxième hypothèse paraît plus probable vu l'état de désarticulation de ces assemblages. Comme l'a souligné William Van Andringa[41], à partir du IIe siècle, l'architecture de la plupart des sanctuaires gallo-romains est telle qu'il est impossible de réunir un grand nombre de convives, le centre monumental de « Bois l'Abbé » ne fait pas exception à la règle. A la fin du IIIe siècle, un *symposium* peut avoir lieu dans les portiques ou les cours autour du grand temple de *Briga*, mais pour organiser un plus vaste banquet, rassemblant la multitude, il doit se dérouler sur la place publique au sud du centre monumental, en suivant la même hypothèse que pour Ribemont-sur-Ancre[42]. La consommation des viandes du sacrifice a également pu se faire devant les maisons aux portes ouvertes[43]. Les distributions gratuites et officielles de viandes à Rome deviennent plus fréquentes à partir du règne d'Aurélien[44], sinon, la viande était vendue sur les marchés[45].

Il est impossible de donner une estimation fiable du nombre de convives et/ou de consommateurs puisque l'on ignore qu'elle était la ration individuelle carnée et si les deux bovins ont bien été sacrifiés simultanément. On ignore également comment sont attribuées les pièces de viande de différentes qualités et si les portions variaient en poids. Selon les règles sociales romaines, la sélection des morceaux obéit à la hiérarchie des rangs et des statuts sociaux[46], on pourrait ainsi imaginer plusieurs « profils » de consommateurs : d'une part les membres de l'élite, qui ont participé au *symposium* et qui ont probablement consommé les poissons marins et les jambons, des mets salés très réputés, ainsi qu'une partie des viandes des bouvillons (peut-être les meilleurs morceaux) ; d'autre part, le reste de la population qui reçoit une ration « standard »[47]. Pour illustrer la grande complexité de ces questions, procédons à deux spéculations différentes ; en prenant la quantité arbitraire de 100 g de viande pour une journée, le contenu des deux fosses pouvait nourrir jusqu'à 7200 personnes (3600 par dépôt). Autre estimation : l'unité de mesure des masses chez les Romains était la *libra*, estimée à 327 g, si chaque convive a reçu une *libra* de viande, on peut estimer qu'ils étaient environ 2200 au total (1100 par dépôt). Pour comparaison, dans sa synthèse sur le sacrifice animal, William Van Andringa écrivait qu'avec un bœuf gras il était possible de nourrir 3000 personnes[48]. Les archéologues de *Briga* quant à eux considèrent que le théâtre du site pouvait accueillir en-

38 Dès l'antiquité, il était recommandé, lorsque cela était possible, de désosser la viande avant de la saler et de la fumer, car l'os et l'humidité contenue dans la moelle peuvent nuire à la bonne conservation. Ces recommandations que l'on trouve initialement chez les agronomes latins (Caton, *De re rustica*, 162 ; Columelle, De re rustica XII, 53) persistent aux périodes postérieures, par exemple au Moyen-Age (Audoin / Marinval-Vigne 1987, 48) et encore aujourd'hui chez les artisans fumeurs. Les scapulas de bœuf (contrairement à celles des porcs) sont des os lourds et encombrants comme le signale Yves Lignereux et Joris Peters (Lignereux / Peters 1996, 61), leur seul avantage est d'offrir un meilleur maintient à la viande qui pourrait, dans certains cas, faciliter l'exportation comme c'est le cas pour les demi-crânes de porcs ou les jambons. Cela n'a donc aucun intérêt dans le cas présent puisque les os sont restés dans l'enceinte du sanctuaire.

39 Lepetz 1996, 137.

40 Corbier 1989, 110.

41 Van Andringa 2008.

42 Fercoq-du-Leslay / Lepetz 2008.

43 Huet et al. 2004, 198.

44 Estienne et al. 2004, 285 ; André 2009, 144.

45 Scheid 2005, 261.

46 Nadeau 2010, 315.

47 Perrot 2010, 287. Etait-elle réellement standard ? On peut envisager une différence de proportion en fonction du rang, du sexe, de l'âge, du statut (servile, libre, citoyen, non-citoyen) ou du lieu de résidence.

48 Van Andringa 2008.

viron 5000 personnes[49]. Ainsi, malgré l'important nombre de variables inconnues, on peut tout de même conclure grâce à ces simulations que le *pagus catuslugi* installé autour de *Briga* disposait d'une population suffisante pour justifier la mise à mort de deux bovins simultanément.

La signification d'un double sacrifice ?

Le dépôt des carcasses dans l'aire sacrée, à proximité du *sacellum*, permet d'émettre l'hypothèse de sacrifices publics. Les bovins sont des victimes qualifiées de « majeures », en opposition aux victimes dites « mineures » comme les moutons ou les porcs, moins coûteuses et moins prestigieuses[50]. Les bœufs castrés et les taureaux sont donc réservés aux cérémonies importantes, notamment celles dédiées à des divinités supérieures, comme Jupiter ou les empereurs divinisés[51]. Cette hypothèse, bien qu'invérifiable, expliquerait la position des deux fosses dans un espace vraisemblablement associé au temple principal du complexe monumental. Elle justifierait en outre le grand nombre de convives ainsi que le choix des victimes : de grands animaux, jeunes (n'ayant pas connu le joug) et parfaitement sains, au moins du point de « vue » l'ostéologie : les bovins ne souffraient d'aucun traumatisme, ni d'aucune malformation osseuse. L'acte d'ensevelissement des restes osseux à l'intérieur de l'aire sacrée, associés à des offrandes monétaires et céramique dans le cas de la fosse ouest, avec un ordonnancement soigné en guise de possible mise en scène, pourrait revêtir un caractère chtonien. Ensevelis dans des fosses rituelles, les ossements décharnés de ces deux bouvillons peuvent ainsi constituer une part pour les dieux[52]. Cette hypothèse résonne avec la légende de Prométhée qui tenta de tromper Jupiter en ne lui offrant que les os d'un bœuf décharné recouverts de graisses[53].

Dans la majorité des cérémonies une seule victime est immolée, l'abattage concomitant de plusieurs victimes rendrait le rituel exceptionnel, à l'instar du suevotaurile qui consistait à sacrifier un bœuf, un bélier et un porc, d'autant plus qu'il s'agit ici de deux victimes majeures[54]. Trois hypothèses peuvent être envisagées pour la découverte faite à *Briga* : les deux sacrifices ont eu lieu en différé ; les deux animaux étaient prévus dès le départ pour le sacrifice (double sacrifice) ; le premier sacrifice a échoué, pour une raison inconnue, et le second bouvillon est une *succidanea hostia*, c'est-à-dire une victime de substitution[55]. La dernière hypothèse semble être la plus fantaisiste et il serait difficile d'expliquer pourquoi les deux fosses contenaient des restes de porcs et de volailles associés aux bouvillons, elle permet en revanche de justifier l'absence de poisson et d'offrande matérielle dans le dépôt est. La multiplicité des dépôts de moutons dans le grand sanctuaire, devant les façades des temples secondaires, laisse entrevoir une répétition des sacrifices ovins à un rythme régulier, éventuellement saisonnier ou annuel[56]. La présence de deux dépôts de bovins dans la même zone pourrait ainsi correspondre à la même logique de la répétition d'un même rite à différentes dates. L'association bœuf, porc, coq et poule dans les deux contextes fournie une ébauche de redondance. L'espace autour du *sacellum* est trop restreint pour multiplier les enfouissements de gros animaux aussi fréquemment que pour les caprinés, ce qui pourrait expliquer qu'il n'y ait pas eu d'autre découverte similaire jusqu'à présent à *Briga*. Cependant, les deux dépôts conservent chacun leurs spécificités et d'une certaine façon on peut estimer qu'ils se complètent. La symétrie relative des deux fosses *(fig. 3)*, la concentration des poissons dans la fosse ouest, la possibilité d'une inversion des pattes ou des têtes entre les deux fosses et l'absence de monnaie et de céramique dans le dépôt est[57], sont autant d'indices, légers mais réels, qui permettent de fléchir en faveur d'un sacrifice concomitant des deux bouvillons.

Un double sacrifice de bovins est un évènement spécial, lié à une cérémonie importante ; il peut ainsi marquer un changement dans la nature ou l'utilisation du sanctuaire. Ces deux dépôts précèdent de peu les premières récupérations de matériaux à l'extrême fin du IIIe siècle, l'inhumation des restes de ces bouvillons a ainsi été perçue par les archéologues comme un possible dépôt de clôture[58]. L'hypothèse d'un (double) dépôt de clôture est valable mais reste très vague : quelles étaient

49 Mantel 2010, 33.
50 Van Andringa 2008.
51 Capdeville 1976.
52 Van Andringa 2012.
53 Nasrallah 2011.
54 Schultz 2016, 67.
55 Capdeville 1971.
56 Bourgois et al. 2019.
57 Selon cette hypothèse, l'offrande constituée de six monnaies et d'un gobelet en céramique du dépôt ouest serait la signature d'un unique sacrifice impliquant les deux bovins des deux fosses.
58 Aubin et al. 2014, 246–247.

les modalités du sacrifice ? Quelle est sa signification réelle ? A quelle règle liturgique correspondent ces offrandes ? Il est possible que ce double sacrifice de bovins soit expiatoire, en lien avec la fermeture du sanctuaire et l'abandon d'au moins une partie de la ville. Dans ce cadre, le sacrifice serait destiné à purifier la ville et ses habitants, coupables d'abandonner un lieu sacré[59]. La proximité de ces dépôts de bouvillons avec le four à chaux, installé dans l'espace VI pour la récupération des matériaux du complexe monumental, à moins de cinq mètres des deux inhumations peut constituer un indice supplémentaire. L'hypothèse d'un sacrifice propitiatoire ne peut toutefois pas être écartée, puisque la ville faisait face à des difficultés majeures du dernier tiers du IIIe siècle : insécurité causée par les pirates, les bagaudes, les raids barbares et les luttes politiques, violentes intempéries, mauvaises récoltes, etc. La présence d'une monnaie de Tetricus et la grande quantité de viande produite par deux sacrifices de bouvillons, suffisante pour nourrir une légion, permet aussi d'envisager la célébration d'une victoire militaire ou la préparation des prochaines batailles.

Les possibilités sont en réalité très nombreuses et il n'y a aucune certitude à propos de la concomitance des deux sacrifices ; ce sont les prêtres et les décurions qui sont chargés de définir les règles des sacrifices dans chaque cité, chaque ville et pour chaque divinité[60]. Les suggestions proposées ici pour les deux dépôts de bouvillons ne sont que des exemples visant à alimenter les discussions au sujet des pratiques rituelles dans le nord de la Gaule romaine. Contrairement aux dépôts de moutons découpés qui sont régulièrement attestés sur des sanctuaires gallo-romains, comme par exemple à Authevernes (Eure) et à Mesnil-Saint-Nicaise/Nesle (Somme) pour citer deux exemples récents ou à Uley au Royaume-Uni, les cas comparables aux deux dépôts de bouvillons mis en scène de *Briga* sont extrêmement rares pour la période romaine. Il existe un cas original et tardif à Moissy-Cramayel où trois bovins non consommés ont été enterrés dans une fosse carré de manière à former une figure géométrique[61]. D'autres inhumations de bovins spéciales et potentiellement rituelles sont connues à Passewaaijse-Hogeweg (Pays-Bas) : la structure 55 contenait une vache non découpée et la structure 49 contenait des pieds et un crâne de bœuf[62]. Autre cas intéressant à Avenches-en-Chaplix en Suisse : bien que la viande du bœuf inhumé n'ait pas été prélevée, un membre antérieur et la queue ont été prélevés et la carcasse a été manipulée pour être mise en scène[63]. Ces exemples restent très différents des deux bouvillons de « Bois l'Abbé ». D'autres exemples sont connus par les sources épigraphiques, on peut citer deux vaches qui ont été sacrifiées à Dea Dia au début du IIIe siècle à Rome[64].

Conclusion

Malgré la rareté d'une telle découverte archéologique, les deux dépôts de *Briga* décrits dans ces pages sont l'illustration concrète des pratiques sacrificielles romaines, avec une sélection précise des victimes en fonction de leur âge, de leur sexe et de leur état de santé. Ces structures sont d'autant plus intéressantes qu'elles témoignent de l'application des dogmes romains dans des provinces éloignées que la littérature latine ignore bien souvent (comme la Gaule Belgique dans le cas présent) et qui n'est de fait généralement attestée que par l'épigraphie. Ces dépôts montrent également le lien tangible entre le sacrifice sanglant et la consommation des viandes prélevées sur l'animal sacrifié. Enfin et surtout, ils permettent de s'interroger sur le devenir des parties non consommables des victimes et leur valeur symbolique à l'époque impériale, les dépôts de *Briga* viennent démontrer que l'os n'est pas un déchet.

L'analyse de ces deux dépôts est aussi à mettre en parallèle avec celle des nombreux dépôts d'os de moutons découverts dans le même sanctuaire[65]. La récurrence des sacrifices selon les mêmes règles de sélection et de « mise en scène » permet d'aborder la question de la saisonnalité de ces pratiques rituelles.

59 Huet et al. 2004, 202–203.
60 Cicéron, *De legibus* II, 12.
61 Cotté / Desayaud 2013.
62 Groot 2008, 126 ; 132.
63 Méniel 1992, 45 ; Lachiche / Deschler-Erb 2007, 130.
64 Lepetz / Van Andringa 2008, 45.
65 Bourgois et al. 2019.

Ces deux dépôts exceptionnels viennent également documenter une période encore méconnue archéologiquement pour le nord-ouest de la Gaule mais qui fait actuellement l'objet de réflexions poussées : la fin du IIIe siècle[66]. Des changements importants s'opèrent dans les années 270 de notre ère (pillages, mutations religieuses, instabilités politiques…), ils marquent une rupture radicale dans la région où de nombreux sites urbains et ruraux sont désertés. Les deux dépôts de *Briga* sont effectués sur la très courte période qui va du règne de Tetricus à l'abandon de la ville dans les années 270–280, ils font ainsi partie des derniers témoignages des pratiques sacrificielles romaines publiques officielles en Gaule.

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Crédits photos

Fig. 2 : Dessin numérique A. Bourgois, E. Mantel, J. Paretias. – Fig. 3 : Cliché aérien S. Charrier 2010, dessin numérique A. Bourgois, E. Mantel. – Fig. 4 ; 10–11 : Cliché E. Mantel. – Fig. 12 : Cliché A. Bourgois. – Toutes les autres images : Auteure.

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Résumé

L'identification de restes de sacrifices sanglants n'est pas chose aisée. Le rituel s'accompagne de gestes et d'une spiritualité que l'archéologie ne peut documenter. Certains critères et des observations faites durant la fouille peuvent cependant permettre d'identifier des dépôts particuliers, liés probablement à des pratiques rituelles. Par exemple, les dépôts de restes d'animaux abondent particulièrement dans le grand sanctuaire de la ville de *Briga*, sur le site archéologique de « Bois l'Abbé », à Eu (Normandie), aux confins des territoires bellovaques, ambiens et calètes. Quarante dépôts furent découverts de 2005 à 2016. La plupart appartiennent à des ensembles osseux de moutons, mais deux d'entre eux, décrits plus bas, se distinguent des autres par leur disposition et l'espèce abattue. En 2009, on a exhumé une carcasse de bouvillon de chaque côté d'un ancien mur de portique au sein de l'enclos sacré du sanctuaire monumental. De la céramique et six pièces de monnaie datant de la fin du 3e siècle ap. J.-C. (règne de Tetricus) accompagnaient les ossements du premier dépôt. Tous les indices permettent d'envisager l'hypothèse de sacrifices publiques et officiels. Le choix de grands animaux (Bos taurus) signifierait peut-être que le sacrifice était lié à un événement important pour les habitants de *Briga* et leur vie publique, peut-être à l'abandon et désacralisation du grand sanctuaire où étaient enterrés les bouvillons.

Zusammenfassung

Zwei außergewöhnliche Deponierungen in *Briga* („Bois l'Abbé", Eu, Frankreich): Die Rinderopferung im 3. Jahrhundert n. Chr.

In archäologischen Befunden die Spuren von Opferpraktiken zu erkennen, ist schwierig. Das Ritual wird von Gesten und einer Spiritualität begleitet, die die Archäologie nicht dokumentieren kann. Einige Kriterien und Beobachtungen, die während der Ausgrabungen gemacht wurden, ermöglichen es jedoch, spezielle Befunde zu identifizieren, die wahrscheinlich mit rituellen Praktiken in Verbindung stehen. Ein Beispiel hierfür sind spezielle Deponierungen von Tierknochen, wie sie bei Ausgrabungen in dem römischen Heiligtum der Stadt *Briga*, auf der Fundstelle „Bois l'Abbé", nahe Eu (Normandie) zutage gekommen sind. Die Fundstelle liegt an der Grenze der Gebiete der Belloker, Ambianer und Caleten. Zwischen 2005 und 2016 konnten 40 solcher Gruben detailliert untersucht werden. Während 38 Gruben Knochen von Schafen ABG (associated bones groups) enthielten, fielen zwei sowohl durch ihre Lage zu beiden Seiten einer Portikus als auch durch ihren Inhalt heraus. In ihnen waren Rinderknochen deponiert und in einer der Gruben lagen zusätzlich Keramikscherben und sechs Münzen aus dem Ende des 3. Jahrhunderts n. Chr. (Regierungszeit des Tetricus). Die Opfertiere aber auch die besondere Lage der Deponierungen lassen vermuten, dass die Rinder als Opfer eines offiziellen Ritus der Einwohner von *Briga* anzusprechen sind. Möglicherweise sind sie mit der Aufgabe und Profanisierung des Heiligtums am Ende des 3. Jahrhunderts in Zusammenhang zu bringen.

Abstract

Two exceptional deposits at *Briga* ("Bois l'Abbé", Eu, France): The sacrifice of cattle in the 3rd century AD

Identifying remains of bloody sacrifice is a difficult work. The ritual is accompanied by gestures and a spirituality that archaeology cannot document. However, some criteria and observations made during the excavations make it possible to identify special deposits, probably linked with ritual practices. For example, the deposits of animal remains are particularly abundant in the great sanctuary of the town of *Briga*, on the archaeological site of "Bois l'Abbé", at Eu (Normandy), situated at the border between the Bellovaci, Ambiani and Caleti territories. Forty deposits were discovered between 2005 and 2016. Most of them are sheep ABG (associated bones groups), but the two deposits that will be described here differ from the others by their arrangement and the slaughtered species. In 2009, two carcasses of bullocks were exhumed on both sides of an ancient portico wall, within the sacred enclosure of the monumental sanctuary. The animal bones of the first deposit were accompanied by a ceramic and six coins dating from the end of the 3rd century AD (Tetricus reign). All clues allow us to propose the hypothesis of public and official sacrifices. Choose major victims (Bos taurus) could mean that the killing of these animals was linked to an important event for the residents of *Briga* and their public life, maybe the abandonment and deconsecration of the great sanctuary where bullocks skeletons are buried.

Faunal remains from a 4th–5th century church complex at ʻAin el-Gedida, Upper Egypt

by *Pam J. Crabtree / Douglas V. Campana*

Keywords

ʻAin el-Gedida, Late Roman Egypt, Christianity, faunal remains, animal husbandry, hunting

Schlüsselwörter

ʻAin el-Gedida, spätrömisches Oberägypten, Christentum, Jagd, Tierhaltung, Landwirtschaft

Mots-clés

ʻAin el-Gedida, Égypte romaine tardive, chrétienté, restes de faune, élevage, chasse

Introduction

The Edict of Milan in 313 ended the Roman Empire's persecution of Christianity. By the early 4th century, Christianity was well established in Egypt, and Egypt was home to the eremitic tradition and early monastic communities. Excavations at the site of ʻAin el-Gedida *(fig. 1)* provided a unique opportunity for archaeologists to study an early church complex in the Egyptian western desert. The site of ʻAin el-Gedida is located in the Dakleh Oasis of Upper Egypt and was initially surveyed by the Dakleh Oasis Project in 1980 *(fig. 1)*. Subsequent excavations were carried out by the local Coptic and Islamic Inspectorate between 1993 and 1995. At that time, the site, which includes both a church and settlement evidence, was identified as a rural village or a monastic community. Subsequent excavations were carried out by Dr. Nicola Aravecchia between 2006 and 2008 under the direction of Professor Roger Bagnall of Columbia University and the Institute for the Study of the Ancient World at New York University *(fig. 2)*.

Ceramics and other archaeological materials recovered from the 2006–2008 excavations indicate that the site was occupied from the early 4th through the early 5th centuries CE. Aravecchia has argued that the site is not necessarily monastic[1]. He has suggested that the site may represent an agricultural settlement with wage or tenant labour, possibly seasonal and dependent on the nearby site of Kellis. The closest architectural parallel to the Church at ʻAin el-Gedida is the small east church at Kellis. While not addressing Roman ritual per se, the study of the faunal remains recovered from this early Christian settlement can shed light on Late Roman diet and economy in the early Christian oasis communities of the Egyptian desert.

1 Aravecchia 2018.

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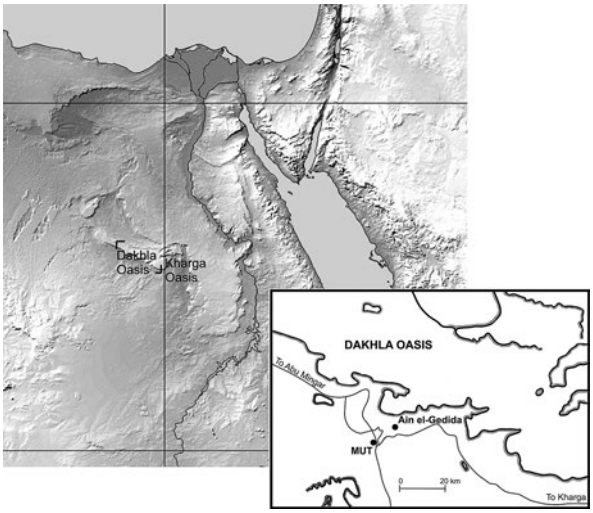


1 Map showing the location of ʻAin el-Gedida and the Dakleh Oasis.

2 Plan of ʻAin el-Gedida Mound 1 showing the areas that were excavated, courtesy of Dr. Nicola Aravecchia.

Materials and Methods

Over 1900 animal bones and fragments recovered from the excavations at ʻAin el-Gedida in the Dakleh Oasis in western Egypt were studied during January of 2011. The following information was recorded for each bone fragment: species, body part, portion, and degree of fragmentation. The condition of the bones, including evidence for weathering, gnawing, and butchery, was also recorded. Ageing data were based on both epiphyseal fusion of the long bones[2] and dental eruption and wear[3], and bone measurements were recorded[4]. The data were entered on a personal computer using *FAUNA*, a Windows-based update to the *ANIMALS* software[5].

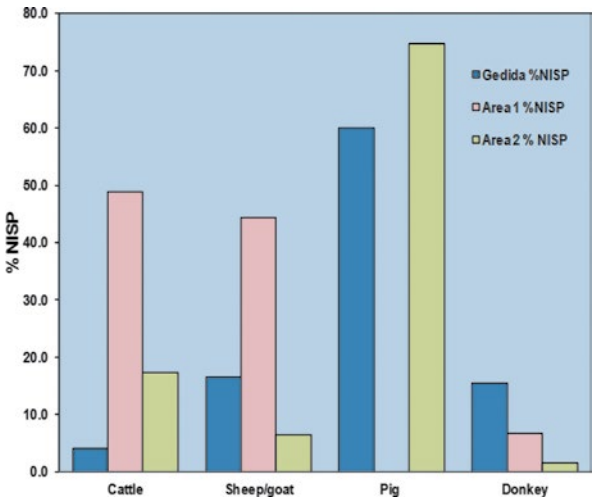
Results

The animal bones identified to species are shown in *table 1*. The ʻAin el-Gedida faunal collection is dominated by the remains of domestic mammals, including pigs, caprines (sheep and goats), donkeys, and cattle. Small numbers of both sheep and goat bones were identified, but the vast majority of the remains were indeterminate sheep/goat fragments. All the identified bird bones were those of domestic chickens, and chickens are the most common bird species at the neighbouring site of Amheida as well. Chickens would have been an important source of both meat and eggs. A small number of gazelle (*Gazella dorcas*) bones were recovered, indicating that animal husbandry was supplemented by occasional desert hunting.

2 Silver 1969.
3 Grant 1982; Payne 1973.
4 Following von den Driesch 1976.
5 Campana 2010.

	N
Domestic Mammals	
Donkey (*Equus asinus*)	58
Cattle (*Bos taurus*)	32
Sheep (*Ovis aries*)	2
Goat (*Capra hircus*)	6
Sheep/goat	58
Pig (*Sus scrofa*)	240
Dog (*Canis familiaris*)	47
Cat (*Felis catus*)	5
Wild Mammals	
Gazelle (*Gazella dorcas*)	3
Domestic Birds	
Chicken (*Gallus gallus*)	8
Higher order taxa	
Large mammal "cattle-sized"	29
Small artiodactyl	118
Equid	4
Rodent, cf. Rat (*Rattus* sp.)	12
Unidentified rodent	8
Small carnivore	2
Small mammal	4
Chicken-sized bird	5
Unidentified mammal	1277
Unidentified bird	22
Unidentified	2
Total	1942

Tab. 1 Animal bones identified from the 2006–2008 excavations at ʻAin el-Gedida.



3 Species ratios based on NISP for the large domestic mammals from the church complex at ʻAin el-Gedida and Areas 1 and 2 at Amheida (Roman *Trimithis*).

Although the ʻAin el-Gedida bones were carefully collected, many were in a relatively poor state of preservation. 98 bone fragments were clearly burned or calcined, and burning can often lead to bone fragmentation. A number of the excavation units included the remains of hearths and cooking areas, so the animal bones are likely to be a direct reflection of diet. Many of the bones were encrusted with salt deposits, and this may have led to bone fragmentation as well. A number of the bones showed clear evidence for rodent gnawing, but very few had obvious signs of weathering suggesting that they were rapidly buried.

The species ratios for the large domestic mammals were calculated based on fragment counts or NISP[6]. In these calculations, the indeterminate equid remains were included with the identified donkey bones. The species ratios are shown in the *figure 3*, along with the data from Areas 1 and 2 at Amheida. Area 1 is a 3rd century middle class household that was involved in the trans-Saharan trade, while Area 2 is a wealthy 4th century urban villa that was owned by a pagan whose dining room was decorated with the images of pagan gods. The quantitative data for cattle, caprines, pigs, and donkeys show that the ʻAin el-Gedida assemblage (NISP = 400) was dominated by the remains of pigs, followed by caprines and donkeys; cattle bones were relatively rare. When compared to the large assemblage from Area 2 at Amheida (NISP = 1388), the ʻAin el-Gedida faunal collection includes more caprines and donkeys and somewhat fewer cattle and pigs. Both the ʻAin el-Gedida assemblage and the Area 2 faunal collection are dominated by the remains of pigs. The small Area 1 assemblage (NISP = 45), on the other hand, includes more cattle and donkeys and no pigs at all. While the Area 1 assemblage is much smaller than the faunal assemblages recovered from Area 2 and ʻAin el-Gedida, the absence of pigs is still unusual. The bones were recovered from the refuse contexts in the back part of the house; the front rooms of the house were quite clean. However, the depositional context alone does not explain the absence of pigs. The inhabitants of Area 1 were engaged in the trans-Sahara trade, and the choice of animals other than pigs may be consistent with a more mobile lifestyle.

McKinnon has shown that increased pork consumption is characteristic of Roman sites throughout the Mediterranean[7], and we have argued elsewhere that the high

6 See Lyman 2008 for a full discussion of quantification methods.

7 McKinnon 2010.

4 Dog skull from ʻAin el-Gedida.

proportions of both pigs and chickens seen at Amheida Area 2 may reflect a high-status 'romanised' identity[8]. The high numbers of pigs seen at ʻAin el-Gedida may also indicate a strong Roman identity, even though the inhabitants of the site represent a very different status than that of the villa owner at Amheida Area 2. The higher proportions of donkeys and caprines at ʻAin el-Gedida are probably more typical of rural sites in Egypt.

Close examination of the cattle remains from ʻAin el-Gedida suggests that they were primarily working animals. All three first phalanges show evidence for lipping on the proximal joint surface. This pathological condition is likely to be the result of traction, i. e., the use of cattle to pull ploughs and carts[9]. Pigs, on the other hand, seem to have made up a substantial part of the diet at ʻAin el-Gedida, as they did at Amheida Area 2.

Not all the faunal remains recovered from ʻAin el-Gedida were the remains of meals. The remains of commensal species, including a dog, a cat, and commensal rodents, were well represented in the faunal assemblage. A partial cat skeleton was recovered from Room 10, and the remains of a dog were recovered in Room 19. A view of the dog skull is shown in *figure 4*. The dog skeleton included a complete radius with a greatest length (GL) of 160.5 mm. This radius came from a dog with a withers height of about 51.7 cm. Although the ʻAin el-Gedida assemblage produced a substantial number of donkey bones, there is no clear butchery evidence to suggest that they were part of the diet.

Conclusions

The faunal assemblage from ʻAin el-Gedida is what might be expected from a late Roman agrarian site in Upper Egypt. Donkeys and cattle are likely to have served as working animals, while pigs, caprines, and chickens played a major role in the diet. The site was populated by commensal animals, including cats, dogs, and rodents. The diet was supplemented by occasional gazelle hunting, but most of the meat was derived from domestic sources.

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Abstract

The 4th–5th century church complex at ʻAin el-Gedida in the Dakleh Oasis, Upper Egypt, was excavated between 2006 and 2008 by Dr. Nicola Aravecchia under the direction of Prof. Roger Bagnall. This church complex is one of the earliest examples known from Egypt to date. Our paper presents a short study of the animal bone remains that were recovered from ʻAin el-Gedida and compares them to the 3rd and 4th century faunal assemblages that were recovered from the town of Amheida (Roman *Trimithis*) in the Dakleh Oasis. The mammal remains were dominated by the remains of pigs, caprines, cattle, and donkeys, but the cattle and donkeys appear to have been working animals. Recent research suggests that the site may have been a Christian agricultural settlement with wage or tenant labour.

Zusammenfassung

Faunenreste aus einem Kirchenkomplex aus dem 4. und 5. Jahrhundert in ʻAin el-Gedida, Oberägypten

In den Jahren von 2006 bis 2008 wurde in ʻAin el-Gedida (Oase Dakhla, Oberägypten) von Dr. Nicola Aravecchia unter Leitung von Prof. Roger Bagnall ein Kirchenkomplex aus dem 4./5. Jahrhundert archäologisch untersucht. Es handelt sich um eine der frühesten aus Ägypten bekannten Anlagen dieser Art. Die während der Ausgrabung geborgenen Tierknochen werden hier mit Funden des 3./4. Jahrhunderts aus der nahe gelegenen Siedlung von Amheida (römisch *Trimithis*) in der Oase Dakleh verglichen. Es zeigt sich die Dominanz von Schwein und Ziegen in der Ernährung, während die Knochen von Rindern und Eseln als Überreste von Arbeitstieren anzusprechen sind. Dies unterstützt die Interpretation des Ortes als christlich geprägte Siedlung mit abhängiger Pacht- und Lohnarbeit.

Résumé

Vestiges d'un ensemble d'églises du IVe et du Ve siècle à Ain el-Gedida, en Haute Égypte

Le complexe ecclésiastique des 4e/5e siècles à 'Ain el-Gedida dans l'oasis de Dakhla en Haute-Égypte fut fouillé entre 2006 et 2008 par le Dr. Nicola Avarecchia sous la direction du Prof. Roger Bagnall. Ce complexe ecclésiastique est l'un des plus anciens d'Égypte connus à ce jour. Cet article présente une brève étude d'ossements d'animaux mis au jour à 'Ain el-Gedida et les confronte aux ensembles faunistiques des 3e et 4e siècles collectés dans la ville d'Amheida (la *Trimithis* romaine) dans l'oasis de Dakhla. Les restes de mammifères comprenaient surtout des porcs, caprins, bovins et des ânes, mais les bovins et les ânes semblent avoir servi d'animaux de trait. Des recherches récentes suggèrent qu'il s'agirait d'un habitat agricole chrétien composé de salariés ou de métayers.

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[1].

First archaeological evidence refers to a megalithic temple, which was regularly visited from the Tarxien to the Borġ in-Nadur period[2]. The Phoenician-Punic sanctuary was probably built around the last quarter of the 8th 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[3]. 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 2nd and the 1st 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[4]. 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[5]. 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*".

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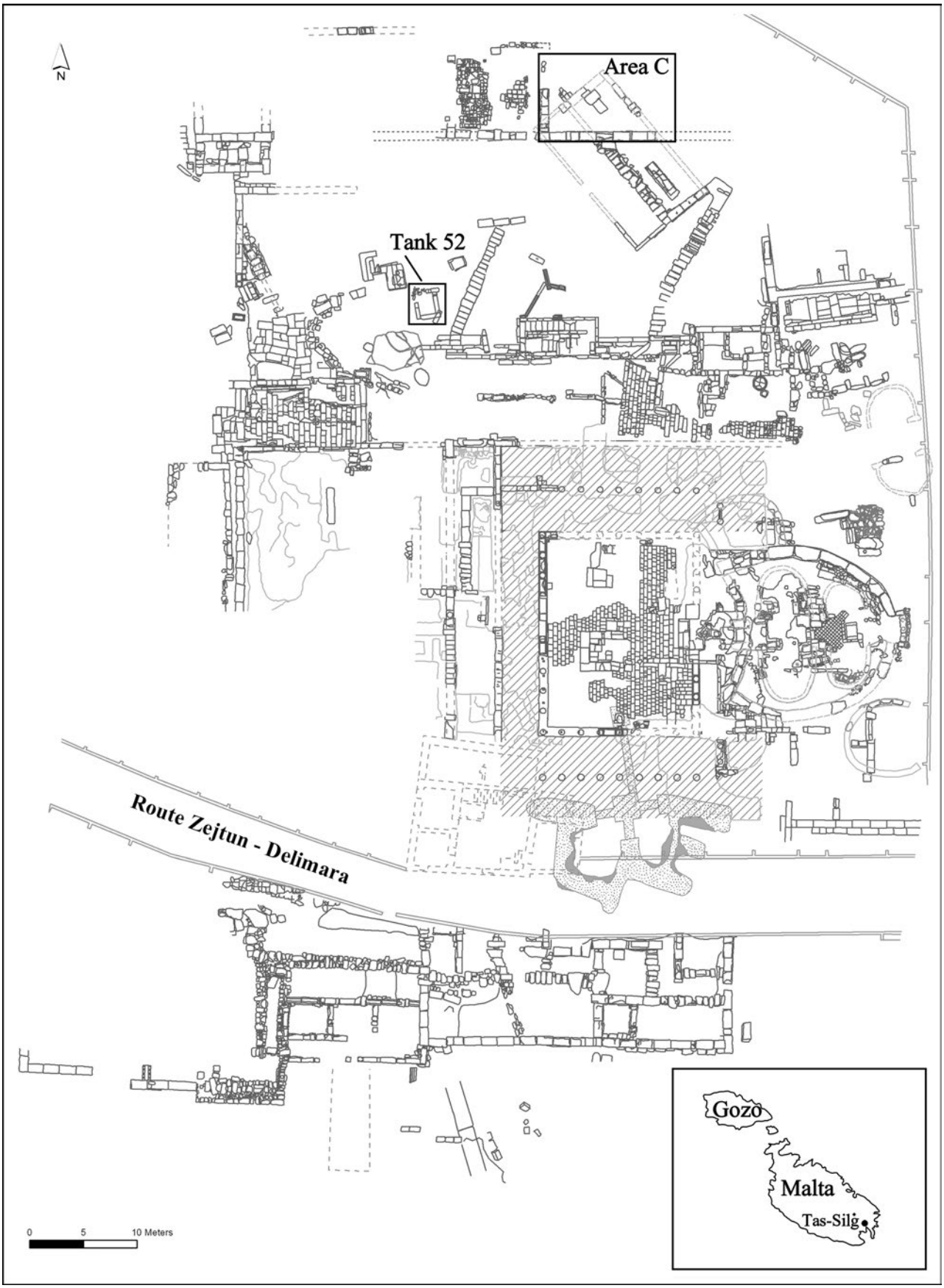


1 Map of the sactuary of Tas-Silg with the location of the two considered sample.

suggests that it also played an important role in controlling, if not encouraging, piracy[6].

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[7] are discussed in detail[8]. 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 2nd and the 1st 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 3rd century BC and the beginning of the 1st 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
Domestic animal				
Cattle – *Bos taurus*	18	2	145	5
Sheep or Goat – *Ovis* vel *Capra*	351	21	1118	42
Sheep – *Ovis aries*	30		124	
Goat – *Capra hircus*	21		33	
Pig – *Sus domesticus*	–	–	21	2
Dog – *Canis familiaris*	1	1	7	1
Chicken – *Gallus gallus*	546	28	351	17
Unid. Dove – *Columba* sp.	167	19	10	2
Unid. turtur – *Streptopelia* sp.	6	2	3	1
Domestic duck – *Anas platyrhynchos dom.*	3	1	–	–
Wild animal				
Red deer – *Cervus elaphus*	4	1	–	–
Weasel – *Mustela nivalis*	–	–	1	1
Rabbit – *Oryctolagus cuniculus*	12	3	38	4
North African hedgehog – *Atelerix algirus*	–	–	1	1
Unid. birds – *Aves* und.	14		100	
Ostrich (eggs) – *Struthio camelus*	–	–	2	
Turtle – *Testudo* sp.	12		3	
Unid. amphibia – *Amphibia* und.	1		1	
Unid. fishes – *Pisces* und.	208		344	
Sea urchin – Paracentrotus lividus	**+++**		**+++**	
Unid. crab – *Decapoda* und.	1		1	
Mollusc – *Mollusca*	891		1511	
Total (without sea urchin)	**2286**		**3814**	
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'[9] (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.

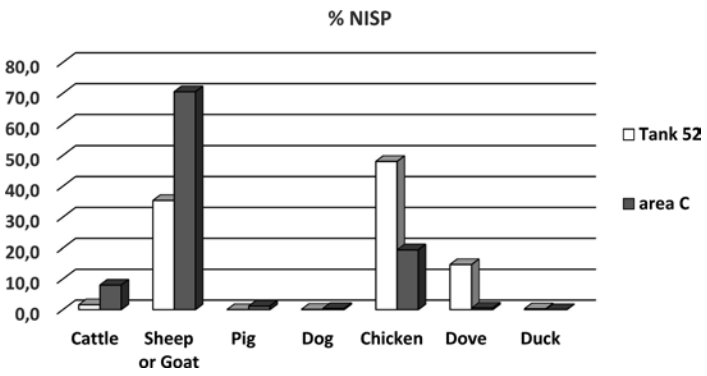
	Cattle		Sheep/Goat		Pig	
	'Tank 52'	'Area C'	'Tank 52'	'Area C'	'Tank 52'	'Area C'
Skull + horn cores	4	11	29	67	–	2
Maxilla + upper teeth	8	38	58	170	–	1
Mandible + lower teeth	–	17	114	400	–	6
Unid. Teeth	–	12	–	8	–	1
Atlas	–	–	3	11	–	–
Epistropheus	–	–	1	8	–	1
Hyoid	–	–	5	5	–	–
Scapula	–	–	3	18	–	–
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
	18	**145**	**402**	**1275**	**0**	**21**

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

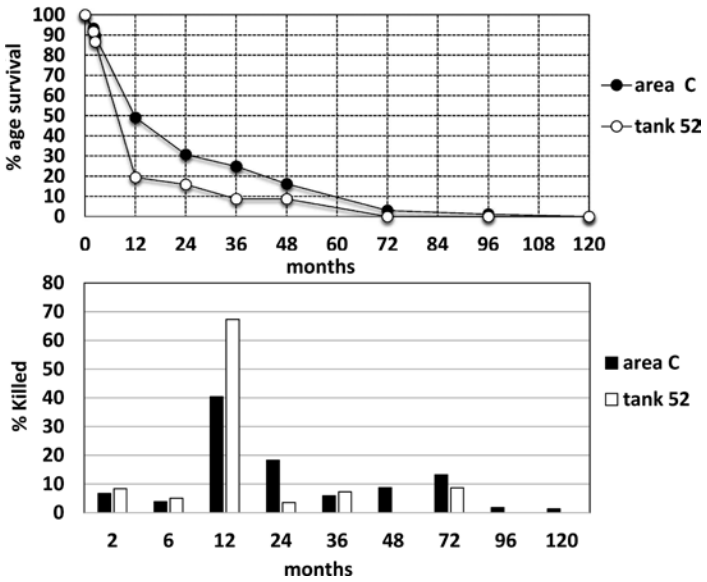
Caprine remains are numerous in both samples but particularly in 'Area C': 402 specimens from 'Tank 52', 1275 from 'Area C' (corresponding respectively to 35.2 % and 70.4 % of the remains from domestic species; *tab. 1*; *fig. 2*). Sheep are slightly more prevalent than goats, with a ratio of 1.4 : 1.

From the fusion of the articular epiphysis of long bones it was possible to establish the age of death of the caprine[10]. 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').

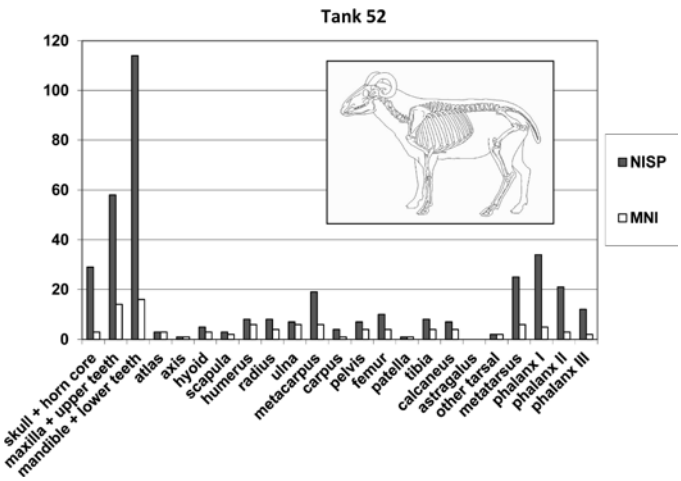
		'Tank 52'	'Area C'
Bone	**Age**	**U-F**	**U-F**
Humerus (dist.)	–12 months	2-1	5-9
Radio (prox.)	–12 months	4-3	1-4
Pelvis	–12 months	2-1	3-13
scapula	12 months	2-1	2-4
First phalanx	14–35 months	17-7	30-27
Second phalanx	14–35 months	8-10	13-11
Femur (prox.)	35 months	3-1	4-1
Tibia (dist.)	35 months	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.

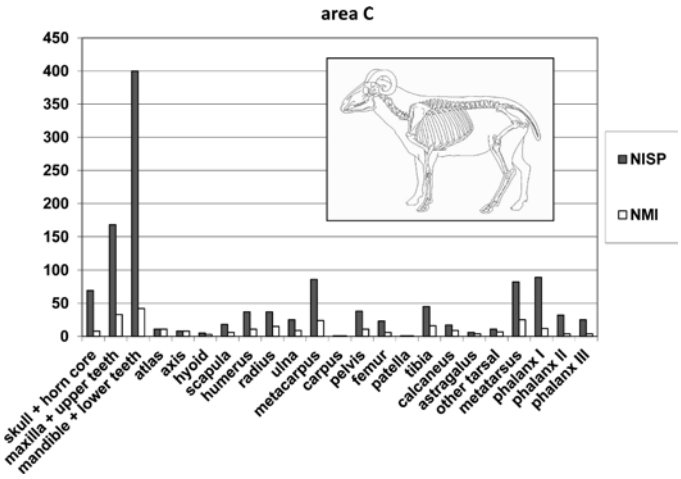
		'Tank 52'		'Area C'	
Tooth wear	**Months**	**NISP**	**%**	**NISP**	**%**
A	0–2	4	8.3	8.7	6.7
B	2–6	2.4	5.0	5.0	3.8
C	6–12	32.3	67.3	52.5	40.4
D	12–24	1.7	3.5	23.7	18.3
E	24–36	3.46	7.2	7.6	5.9
F	36–48	0	–	11.4	8.7
G	48–72	4.14	8.6	17.1	13.2
H	72–96	0	–	2.3	1.8
I	96–120	0	–	1.7	1.3

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



5 Tas-Silġ: 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[11]. Moreover, in 'Tank 52', long bones from the left side[12] 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[13], weasel[14], North African hedgehog and red deer were identified[15]. 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 4th and the beginning of the 3rd century BC, testifies that red deer were used in sacri-

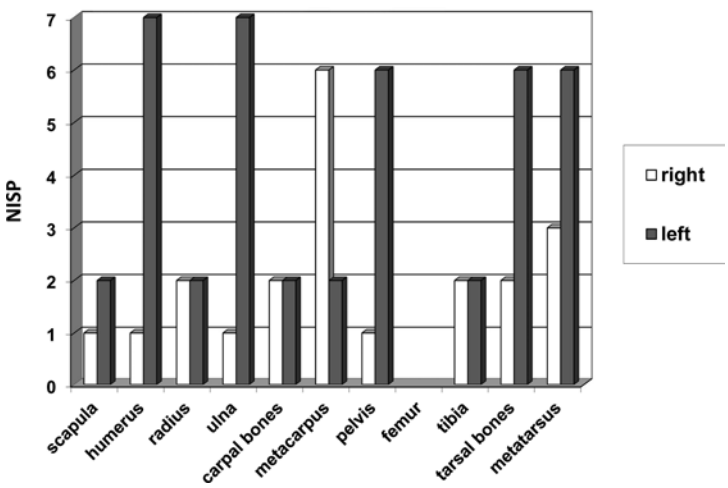
11 Corrado et al. 2004.

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[16] 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[17], so we can assume that it was a red deer[18].

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)[19], while it was absent in the Pleistocene and at the beginning of the Holocene[20]. Rabbit remains don't appear at Tas-Silġ in its prehistoric phases[21], 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 9th century BC[22]. 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	
Total	**12**		**38**	

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 / MacKinnon 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 1st and 4th 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).

	Gallus gallus				***Columba* sp.**			
	'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		–			–
Total	**546**	**28**	**351**	**17**	**167**	**19**	**10**	**2**

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

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 (*Euthinnus 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 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[23], 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
Patella caerulea	8	201
Patella rustica	2	16
Patella aspera	–	5
Haliotis tuberculata	–	1
Steromphala varia	1	14
Phorcus turbinatus	2	65
Trochidae da det.	–	5
Columbella rustica	3	2
Cerithium vulgatum	4	32
Luria lurida	–	3
Hexaplex trunculus	11	106
Conus ventricosus	–	1
Stramonita haemastoma	–	1
Spondilus gaederopus	–	2
Ostrea sp.	–	7
Pectinidae ind.	–	1
Callista chione	–	1
Acanthocardia aculeata	–	1
Cerastoderma edule	662	883
Venus verrucosa	1	–
Ruditapes decussatus	46	94
Sepia sp.	12	6
und. *Mollusca*	–	2
und. Helicidae	139	62
Total	**891**	**1511**

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.

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

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"[24]. 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[25]. 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'[26] 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[27]. 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[28].

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[29]. Some rules governing these sacrifices are described in the so-called "Marseilles tariff", written between the end of the 4th and the beginning of the 3rd 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 related to rituals and ceremonial activities (35.7 %)[30]. 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[31]. 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[32]. 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[33].

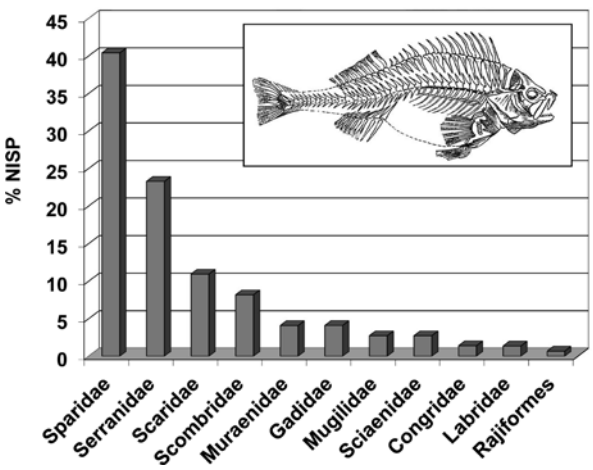
Finally there are numerous remains of sea animals, such as molluscs, echinoderms, and fish. Their high percentage[34] among the animal remains reflects the importance of sea food for the Phoenician-Punic culture[35]. Among fish, there are species of high quality, especially *Sparidae*, *Serranidae,* 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 Mariñas 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[36].

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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Fig. 1: Courtesy of G. Semerano.

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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 2nd and 1st 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 Fischsorten 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 Krabbenscheren 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 2e et 1er 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.

Bird and other animal sacrifice in the *Ploutonion* of Hierapolis, Phrygia (Turkey): some results from two votive deposits

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Keywords

Hierapolis, Phrygia, *Ploutonion*, 1st–2nd centuries AD, sacrifice, bird and mammal remains, fish and reptiles

Schlüsselwörter

Hierapolis, Phrygien, *Ploutonion*, 1.–2. Jahrhundert n. Chr., Opfer, Vogel- und Säugetierreste, Fische und Reptilien

Mots-clés

Hiérapolis, Phrygie, *Ploutonion*, 1er–2e siècles ap. J.-C., sacrifice, restes d'oiseaux et de mammifères, poissons et reptiles

Introduction

Archaeological excavations carried out by the University of Salento (Lecce, Italy) at Hierapolis in classical Phrygia (south-western Anatolia, Turkey), brought to light the *Ploutonion* mentioned by ancient writers[1]. Since the 1st century BC this building became a famous pilgrimage site dedicated to the god Pluto, and was then considered a Gate to the Underworld. The core of the shrine was represented by a small theatre built on top of a cave from which water sprang along with carbon dioxide emissions, and where the animals were sacrificed by suffocation caused by the toxic fumes. Other rooms, used by the faithful as part of a ritual passage which included ablutions, libations and sacrifices in honour of the chthonic deities, were adjacent to the theatre. The archaeological site is fully consistent with descriptions made by ancient writers[2], who provide details of the sanctuary and its rites[3].

An important part of the rites was the sacrifice of bulls through asphyxia caused by the fumes, performed according to the rules of chthonian cults. However, the rites also included the sacrifice of birds that were thrown into the cave in order to verify the lethal effect of gases. The birds instantly died, while only the eunuch priests of the goddess Cybele were able to come out of the cave unscathed[4].

Inside the sanctuary, numerous votive deposits were discovered during the archaeological excavations, and animal remains always represented a large part of them. Animal bones were generally associated with stone al-

1 D'Andria 2013; D'Andria 2017; D'Andria 2018.
2 See Strabo, Geography, 13,4; 14.
3 D'Andria 2013; D'Andria 2017, 210; D'Andria 2018.
4 D'Andria 2017, 210; D'Andria 2018. Even today, poisonous gases cause the death of birds that get too close to the mouth of the cave (D'Andria 2017, 224).

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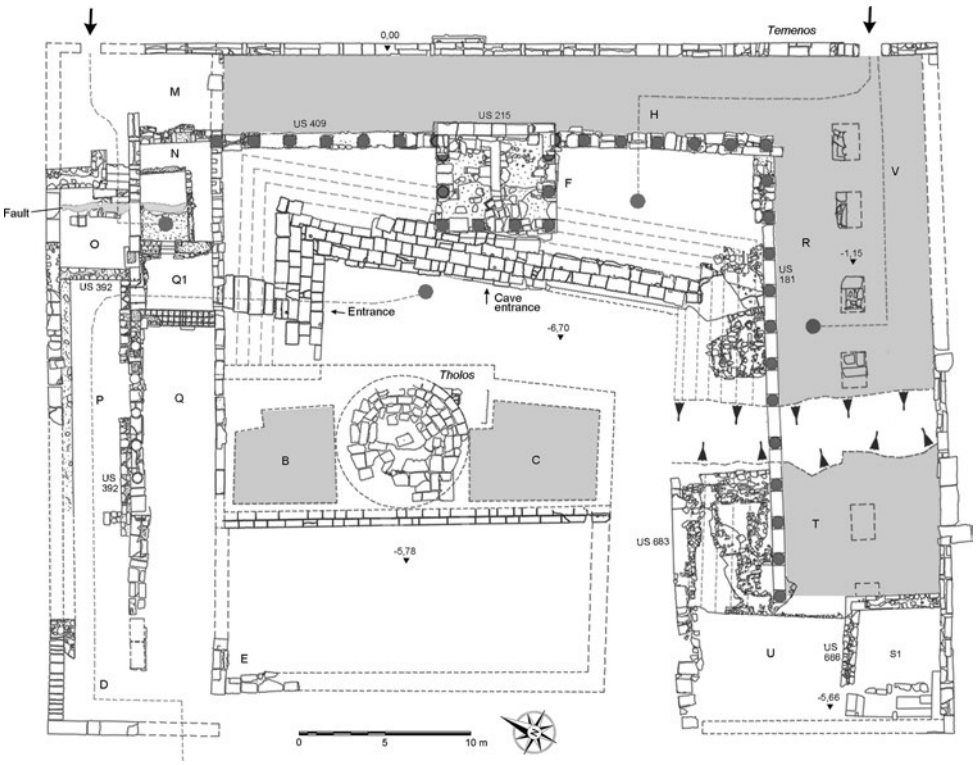


1 Map of the Ploutonion of Hierapolis.

tars with significant traces of burning activities, as well as to *unguentaria*, oil lamps (with signs of use), and libation cups which were found upturned with the rim pressed into the ground[5].

The study of the animal remains from the *Ploutonion* started in 2014 and is still in progress. In this paper we will discuss the preliminary results of the study of the animal remains from two votive deposits.

Material and methods

The animal remains from the *Ploutonion* of Hierapolis presented and discussed here come from two deposits (SU 562-253 and SU 711) excavated in Room Q1 of the sanctuary. The two samples include a large quantity of animal remains, mostly represented by birds of various species and sizes[6]. According to pottery and other votive materials, the animal remains from the two deposits are dated to the 1st and 2nd centuries AD; however, stratigraphical data clearly show that they were moved from their primary deposition and located in Room Q1 as 'repair offerings' at the end of the 3rd century/second half of the 4th century AD during building, renovation, and cleaning works at the sanctuary *(fig. 1)*.

The animal remains were very well preserved. During excavation, a large quantity of remains from small animals was immediately noticed *(fig. 2)*; therefore, for a better recovery of the material, a programme of fine sieving (5–10 mm) was undertaken for both deposits.

A preliminary analysis showed that in both deposits most of the remains belonged to birds. After having verified that all bird body parts were well represented, we decided to record only humeri and femurs, in order to overcome the large amount of bird remains. For the other animal classes that were identified, we recorded all remains, although we used only humeri and femurs in counting analyses when comparing mammal and bird species frequencies.

5 D'Andria 2017, 213–214.

6 D'Andria 2018, 128–129.

All animal remains were identified according to Schmid for mammals[7] and to Tomek / Bocheński for birds[8]. The scientific nomenclature of domestic animals follows Gentry et al.[9]. The sheep/goat distinction was attempted using the criteria described by Boessneck et al.[10], Kratochvil[11] and Zeder / Lapham[12] for post-cranial elements, and by Payne[13], Halstead / Collins[14] and Zeder / Pilaar for teeth[15]. The state of epiphyseal fusion of mammal long bones was recorded as fused or unfused (epiphysis, metaphysis or both). The analysis of fusion data relied on Silver for cattle[16], Bull / Rackham[17] for caprines and Bull / Payne for pigs[18]. Tooth wear stages were recorded following Bull / Payne[19] for pig and Payne for sheep/goat[20]. The age stage of bird remains was estimated on the basis of the occurrence of porosity on the articular ends of long bones, which allowed the identification of immature individuals. Measurements of bones were taken following von den Driesch for mammals and birds[21]; additional bird measurements were taken following Tomek / Bocheński[22].

Results

In both deposits bird remains are predominant, representing 95 % and 98.5 % of the remains respectively. Only ca. 4.5 % and 1.5 % of the remains from the two deposits belong to mammals. Also represented in one of the deposits (SU 711), although with very few remains, are fish and reptiles *(tab. 1)*.

	SU 711			SU 562-253		
	NISP	**%**	**MNI**	**NISP**	**%**	**MNI**
Cattle – *Bos taurus* L.	5	0.2		2	0.6	
Sheep or goat – *Ovis* vel *Capra*	31	1.5		2	0.6	
Sheep – *Ovis aries* L.	1	0.05				
Pig – *Sus domesticus* Erx.	52	2.5		1	0.3	
Dog – *Canis familiaris* L.	4	0.2				
Hare – *Lepus* sp.	2	0.1				
Birds nd – *Aves* nd	317	15.0		102	31.9	
Domestic fowl – *Gallus gallus* L.	641	30.4	153	121	37.8	27
Rock dove – *Columba livia* L.	1051	49.8	197	92	28.8	22
Turtledove – *Streptopelia turtur* L.	2	0.1	2			
Fish nd – *Pisces* nd	3	0.1				
Reptile nd – *Reptilia* nd	2	0.1				
Total	2111			320		

Tab. 1 Numbers of animal remains (NISP), with relative percentages and minimum number of individuals (MNI), for each taxon in the two deposits. For mammals and birds only humeri and femurs have been included. See *table 7* for the MNIs of mammal taxa.

Among birds, rock dove (*Columba livia*)[23] and domestic fowl (*Gallus gallus*) remains are the most common, followed by the remains of other birds of different sizes that have not yet been identified to species; preliminary observations suggest these latter certainly belonging to several species. Among these, two bones (from SU 711) can be safely attributed to the turtledove (*Streptopelia turtur*).

7 Schmid 1972.
8 Tomek / Bocheński 2009.
9 Gentry et al. 2004.
10 Boessneck et al. 1964
11 Kratochvil 1969.
12 Zeder / Lapham 2010.
13 Payne 1985.
14 Halstead / Collins 2002.
15 Zeder / Pilaar 2010.
16 Silver 1969.
17 Bull / Rackham 1982.
18 Bull / Payne 1982.
19 Bull / Payne 1982.
20 Payne 1973.
21 von den Driesch 1976.
22 Tomek / Bocheński 2009.
23 *C. livia* was separated from *C. oenas* and *C. palumbus* using the criteria described in Tomek / Bocheński 2009.

2 The authors engaged in the study of the bird remains from the deposits SU 711 and SU 562-253 found in room Q1 of the Ploutonion.

3 Fragments of eggshells from the deposit SU 562-253.

Comparing the relative frequencies of bird species by deposit, some differences can be observed *(tab. 2)*. Rock dove remains prevail on chicken remains in deposit SU 711, whereas the proportion of these two species is reversed in deposit SU 562-253. The NISP of other unidentified birds is higher in SU 562-253 than in SU 711.

	SU 711		SU 562-253	
	NISP	%	NISP	%
Domestic fowl	641	31.9	121	38.4
Rock dove	1051	52.3	92	29.2
Turtledove	2	0.1		
Bird nd	317	15.8	102	32.4
Total	2011		315	

Tab. 2 Numbers of bird remains (NISP) and relative percentages for each taxon in the two deposits. Only humeri and femurs have been included.

	SU 711		SU 562-253	
	NISP	%	NISP	%
Mature	494	77.1	64	55.2
Immature	147	22.9	52	44.8
	641		116	

Tab. 3 Numbers of mature and immature domestic fowl bones (NISP) and relative percentages in the two deposits. Only humeri and femurs have been included.

	SU 711		SU 562-253	
	NISP	%	NISP	%
Mature	1051	100	89	98.9
Immature	–	–	1	1.1
	1051		90	

Tab. 4 Numbers of mature and immature rock dove bones (NISP) and relative percentages in the two deposits. Only humeri and femurs have been included.

In SU 711 and SU 562-253, 77 % and 55 % of chicken remains respectively were from mature individuals, with immature specimens accounting for 23 % and 45 % of the bones *(tab. 3)*. Rock dove remains belonged to mature individuals in both deposits, except for an immature specimen from SU 562-253 documented by a humerus with porous epiphyses *(tab. 4)*.

All chicken femurs were drilled using a grinding stone bit, in order to assess the presence of medullary bone in the marrow cavity. Its presence allows the assignment of some remains to laying hens[24]. The occurrence of medullary bone in more than half of the femurs from both deposits indicates that numerous hens were 'in lay' when they were sacrificed *(tab. 5)*. The presence of eggshell fragments was also observed in SU 562-253 *(fig. 3)*.

24 Driver 1982.

	SU 711		SU 562-253	
	NISP	%	NISP	%
without medullary bone	80	36.4	15	44.1
with medullary bone	140	63.6	19	55.9
	220	100	34	100

Tab. 5 Numbers of domestic fowl femurs (NISP) and relative percentages based on the presence of medullary bone in the two deposits.

All skeletal elements of rock dove and chicken were identified in both deposits, suggesting that no selection of body parts occurred. No butchery marks were noticed. These data, along with the absence of cuts associated with slaughtering, suggest that the birds were not dismembered after they had been killed by suffocation.

Burning marks are instead common, affecting half of bird remains (ca. 52 %) from deposit SU 711, and a smaller proportion (ca. 6 %) of remains from deposit SU 562-253. Therefore, the evidence from burning marks highlights yet another difference between the two deposits.

Among mammals, cattle (*Bos taurus*), sheep (*Ovis aries*), goats (*Capra hircus*), and pigs (*Sus domesticus*) are the most represented in both deposits *6 and 7).*

	SU 711	SU 562-253
	NISP	NISP
Cattle	22	125
Sheep or goat	222	19
Sheep	30	2
Goat	1	
Pig	298	15
Dog	36	4
Hare	8	
Total	617	165

Tab. 6 Number of mammal remains (NISP) for each taxon in the two deposits. All anatomical elements included.

	SU 711	SU 562-253
	MNI	MNI
Cattle	3 (1A + 1SA + 1J)	5 (3A + 1SA + 1N)
Sheep or goat	15 (6A + 4SA + 4J + 1F vel N)	3 (1SA + 2N)
Pig	15 (2A + 1 SA + 11F vel N)	2 (1SA + 1N)
Dog	2 (2A)	1 (1A)
Hare	1 (1A)	–

Tab. 7 Minimum number of individuals (MNI) for each taxon in the two deposits, according to all anatomical elements (A = adult; SA = subadult; J = juvenile; N = neonatal; F = foetus).

4 Cattle first phalanges to which the proximal plantar side was cut.

5 Distal part of a cattle first phalanx with clear cut marks.

Only 0.6 % of the mammal remains from SU 562-253 were burnt, while ca. 46 % of those from SU 711 presented burning marks.

Cattle are present with only few remains in one deposit (SU 711), while they are better represented in the other (SU 562-253). Body part distribution analyses show a predominance of elements from the lower limbs in SU 562-253 *(tab. 8).* Cut marks have been recorded on several phalanges, being often located on the proximal part of the plantar surface of first and second phalanges *(figs 4–5).* Mortality data show that cattle remains belonged mostly to animals culled between 18 and 36 months of age; however, several individuals were sacrificed before reaching 18 months of age, while no animals older than 36 months were recorded *(tab. 9).*

	Cattle		Sheep and goat		Pig	
	SU 711	SU 562-253	SU 711	SU 562-253	SU 711	SU 562-253
	NISP	NISP	NISP	NISP	NISP	NISP
cranium	1	–	6	1	12	1
maxilla	–	–	–	–	5	–
upper teeth	–	3	2	1	5	–
mandible	–	1	10 (1O)	4 (2O)	5	2
lower teeth	2	9	5	2	14	2
teeth nd	–	–	–	–	4	–
hyoid bone	–	3	–	–	–	–
atlas	4	–	2	–	10	–
axis	2	–	4	–	–	–
scapula	–	1	6	6	12	1
humerus	2	1	22	1	27	–
radius	2	3	14 (2O)	–	23	1
ulna	1	1	6	–	10	–
carpal	1	23	17	–	4	–
metacarpal	–	9	8	–	4	2
pelvis	2	1	7	1	17	–
femur	3	1	10 (1C)	1	25	1
patella	–	2	1	–	2	–
tibia	–	4	8 (1O)	–	26	2
malleolus	–	1	1	–	–	–
tarsal	–	8	6	–	1	–
astragalus	–	2	15 (2O)	–	5	–
calcaneum	1	5	9 (2O)	–	8	2
metatarsal	–	–	12	2	1	–
metapodial	–	1	12 (6O)	1	28	–
sesamoid	1	–	–	–	–	–
phalanx 1st	–	30	37 (3O, 1C)	–	32	–
phalanx 2nd	–	11	20	1	16	1
phalanx 3rd	–	5	13 (12O)	–	2	–
Total	22	125	253	21	298	15

Tab. 8 Body parts of cattle, sheep/goat, and pigs by number of fragments (NISP) in the two deposits (O = *Ovis aries*, sheep; C = *Capra hircus*, goat). All identified fragments have been included.

		SU 711		SU 562-253	
	age	U	F	U	F
scapula d.	7–10 months	–	–	1	0
pelvis a.	7–10 months	0	1	–	–
humerus d.	12–18 months	1	0	–	–
radius p.	12–18 months	0	1	–	–
phalanx 1st p.	18 months	–	–	1	18
phalanx 2nd p.	18 months	–	–	1	8
metacarpal d.	24–30 months	–	–	1	6
tibia d.	24–30 months	–	–	1	3
metapodial d.	30–36 months	–	–	1	0
femur p.	42 months	2	0	–	–
humerus p.	42–48 months	1	0	1	0
radius d.	42–48 months	–	–	2	0
ulna p.	42–48 months	1	0	–	–

Tab. 9 Occurrence of unfused (U) and fused (F) bones of cattle. Unfused epiphyses have been included.

Differently from cattle, both caprine and pig remains are well represented, especially in deposit SU 711; most caprine and pig anatomical elements were identified, suggesting that no body parts were selected *(tab. 8)*.

Caprine remains, with sheep prevailing on goat, mostly belonged to juvenile and sub-adult individuals *(tab. 10)*. Only 3 % of the remains refer to adults.

		SU 711		SU 562-253	
	age	**U**	**F**	**U**	**F**
humerus d.	-12 months	8	10	–	–
radius p.	-12 months	1	4	–	–
pelvis a.	-12 months	5	1	0	1
scapula d.	12 months	6	0	3	1
phalanx 1st p.	14–35 months	30	4	–	–
phalanx 2nd p.	14–35 months	20	0	1	0
tibia d.	35 months	4	1	–	–
femur p.	35 months	2	1	–	–
femur d.	48 months	7	0	1	0
metacarpal d.	48 months	1	0	–	–
metatarsal d.	48 months	6	0	–	–
metapodial d.	48 months	12	0	2	0
humerus p.	48–60 months	6	0	1	0
radius d.	48–60 months	9	0	–	–
ulna p.	48–60 months	6	0	–	–
calcaneum p.	48–60 months	8	0	–	–

Tab. 10 Occurrence of unfused (U) and fused (F) bones of sheep/goat. Unfused epiphyses have been included.

Instead, all pig remains were from young individuals *(tab. 11)*. In particular, 70 % of the remains belonged to neonatal animals or foetuses. We tried to identify their age at death according to Gjesdal[25] and Wenham et al.[26], who established a correlation between the diaphyseal length of long bones and the age of foetal development on the basis of both radiographs and dissected animals using over 500 Norwegian Landrace and Large White pigs. These measurements allowed calculating different linear regression equations. The regression formulas estimated by Gjesdal[27] and Wenham et al.[28], also reported in Prummel[29], were then applied to 27 specimens from our samples *(tab. 12)*.

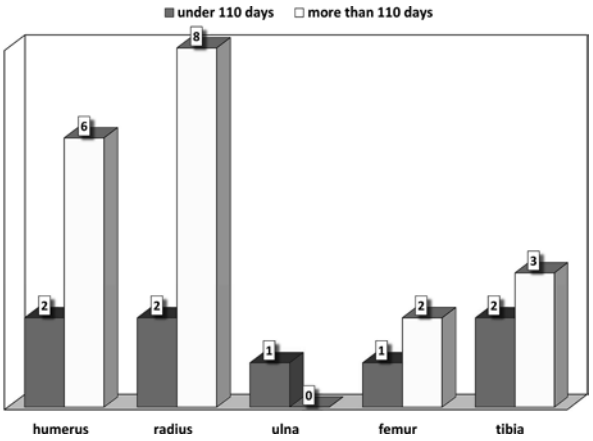
25 Gjesdal 1972.
26 Wenham et al. 1969; Wenham et al. 1973.
27 Gjesdal 1972.
28 Wenham et al. 1969; Wenham et al. 1973.
29 Prummel 1989.

		SU 711		SU 562-253	
	age	**U**	**F**	**U**	**F**
scapula a.	7–11 months	11	0	1	0
pelvis a.	7–11 months	14	0	–	–
humerus d.	+11 months	22	0	–	–
radius p.	+11 months	20	0	1	0
phalanx 2 p.	12–18 months	16	0	1	0
tibia d.	19–23 months	16	0	–	–
phalanx 1 p.	19–23 months	32	0	–	–
metacarpal d.	+23 months	3	0	1	0
metatarsal d.	+23 months	1	0	–	–
metapodial d.	+23 months	28	0	–	–
femur p.	31–35 months	20	0	–	–
humerus p.	+35 months	3	0	–	–
radius d.	+35 months	15	0	–	–
ulna p.	+35 months	8	0	–	–
ulna d.	+35 months	1	0	–	–
femur d.	+35 months	7	0	–	–
tibia p.	+35 months	10	0	–	–
calcaneum p.	+35 months	8	0	2	0

Tab. 11 Occurrence of unfused (U) and fused (F) bones of pigs. Unfused epiphyses have been included.

			Days from conception	
Anatomical element	**GLd**	**Burning**	**According to Gjesdal (1972)**	**According to Wenham et al. (1969; 1973)**
humerus	32.1	*	96	95
humerus	34.4	*	99	99
humerus	43.1	*	>114	>119
humerus	43.1	*	>114	>119
humerus	44.8	*	>114	>119
humerus	59.8		>114	>119
humerus	73.3	*	>114	>119
humerus	46.3		>114	>119
radius	23.1	*	97	95
radius	23.4	*	97	95
radius	28.5	*	110	114
radius	34.1	*	>123	>125
radius	37.5	*	>123	>125
radius	38.1	*	>123	>125
radius	38.3	*	>123	>125
radius	39		>123	>125
radius	39.6	*	>123	>125
radius	47.3		>123	>125
ulna	30.5	*		96
femur	35.4	*	105	104
femur	47.4	*	>120	>126
femur	43.5	*	120	126
tibia	29.9		96	95
tibia	35.1		105	108
tibia	48.4	*	>120	>125
tibia	48.8		>120	>125
tibia	55.9		>120	>125

Tab. 12 Age estimations from the day of conception based on the greatest length of diaphysis (GLd).



6 Age at death of pig remains from the day of conception, according to the gestation period (110 days) and to the greatest length of diaphysis (GLd).

Table 12 reports the greatest lengths of diaphyses (GLd) and the estimated ages from the day of conception, according to the two methods. The results show that ca. 78 % of remains belonged to born individuals, who had reached at least 110 days of age from conception corresponding to the end of the gestation period of pigs *(fig. 6)*. Indeed, on average it takes a sow three months, three weeks and three days to complete its pregnancy. A certain number of bones from our samples may belong to foetuses. However, it must be taken into account that most of these elements are burnt; combustion involves a minimal reduction in size, and this could have affected some measurements. As a consequence, it is possible that the burnt bones providing an age estimation of below 110 days actually belonged to neonates. Only two tibiae are not burnt and refer to individuals younger than 110 days from conception, providing an age at death of 95 and 108 days. The first of these can more safely be identified as a foetus, suggesting the sacrifice of a pregnant sow. Although the remains of fully mature pigs were not found *(tab. 11)*, we must consider that today the sexual maturity of sows occurs fairly early, at around 6–7 months of age; therefore, the absence of osteological remains of sexually mature individuals does not rule out our hypothesis.

Other mammal remains include few bones (NISP 8) of hare and some bones and teeth (NISP 36) of two dogs. The majority of dog remains refer to an adult male with a withers height of ca. 28 cm. It had very short but slightly twisted legs (brachymelic), as well as a pathology on both hind limbs consisting in the fusion of the fibula with the tibia *(fig. 7)*.

Fish are represented by two vertebrae and the pharyngeal teeth of a cyprinid (Cyprinidae). Two snake vertebrae were also recovered from one deposit (SU 711).

Conclusion

The nature of the animal assemblages from the two votive deposits excavated in the *Ploutonion* of Hierapolis is consistent with the descriptions contained in ancient sources of rites held at the sanctuary. Two types of rites were carried out: the first aimed to demonstrate the destructive power of Pluto; the other one consisted in the sacrifice of victims in honour of Pluto.

To the first rite refers the majority of bird remains; among them, the domestic fowl and the rock dove are well represented. Their discovery is perfectly consistent with the text of Strabo[30], who himself threw birds inside the cave of the *Ploutonion* and saw them suffocating with the fumes.

Almost complete rock dove and chicken skeletons were identified in both deposits; this means that no further carcass processing took place. The large quantity of bird remains suggest that, most probably, birds were given or sold to visitors outside the sanctuary by the priests, in order to allow people to personally observe the destructive power of Pluto[31].

No preference for birds of a certain age was noticed: mostly adult remains were recovered from one deposit, but an equal proportion of mature and immature bones characterises the other deposit. The identification of medullary bone in several domestic fowl bones indicates that a fair number of hens were in lay at the time of sacrifice.

Cattle, caprine, and pig remains on the other hand, may represent the sacrifice of victims in honour of deities. Pigs and caprines prevail in one deposit, while cattle are predominant in the other. The analysis of the distribution of cattle body parts for SU 562-253 shows a prevalence of bones from the extremities. Cattle were mainly sacrificed when between 1.5 years and three years of age.

30 Strabo, Geography, 13,4; 14.

31 Zwingmann 2012.

7 Remains of a dog with brachymelic legs and pathology on both hind limbs, consisting in the fusion of the fibula with the tibia; 1) left upper P4; 2) left upper M1; 3) left upper M2; 4) left humerus; 5) left radius; 6) left ulna; 7) right femur; 8) left femur; 9) right tibia; 10) left tibia; 11) left second metacarpal; 12) left fourth metacarpal; 13) left fifth metacarpal; 14) right pelvis; 15) left pelvis; 16) right calcaneum; 17) right astragalus; 18) left astragalus; 19) right fifth metatarsal; 20) left third metatarsal; 21) cuboid bone; 22) baculum; 23) first phalanges; 24) second phalanges.

Caprines, mostly sheep, were mainly sacrificed at young ages. Pigs were always culled at a very young age: a large part of their remains belonged to neonatal individuals; a couple of specimens probably refer to foetuses, possibly suggesting the sacrifice of pregnant sows.

The presence of other animal taxa, such as dog, fish, and snake in the votive deposits suggests that they were also used in the rites. In classical mythology, dogs were often linked with the underworld[32]. Snakes were also considered chthonic. Pluto is often represented together with snakes, as shown by the statue of Pluto and Cerberus, the mythological three-headed dog that guarded the "Kingdom of the Dead", found in fragments in the sanctuary of Hierapolis: two snakes were probably located on the sides of the throne on which Pluto was sitting[33].

Even fish could be connected with chthonic deities, although ancient writers report that the cult of Demeter and Kore only occasionally implied the consumption of fish[34]. However, the discovery of a few remains suggests that occasionally fish was used in the rites.

The chthonic character of fish is widely acknowledged in the 4th century AD by the emperor Julian the Apostate[35], who wrote that fish, swimming in deep waters, was even more chthonic than the seeds. The fish species black-tail (ancient Greek common name: *melanouros*), common pandora (*erythrinos*), and red mullet were particularly sacred to chthonic deities, perhaps due to their name itself (connected with death and blood); on the other hand, the fish *mainis* (identifiable with the blotched picarel, *Spicara maena*?) was sacred to Hecate[36].

32 De Grossi Mazzorin / Minniti 2006.
33 D'Andria 2017, 213.
34 Theodoropoulou 2013.
35 Julian the Apostat, *Eis ten metera ton theon* – The mother of the gods 17.
36 Mylona 2013.

This study shows once again the important contribution of the analysis of animal remains to our understanding of ancient ritual practices. In the case of the *Ploutonion* of Hierapolis, the study of animal remains complements and elucidates the information derived from written sources; it also provides useful undocumented details (e. g. species frequencies, age, sex) on the animals that were sacrificed in the sanctuary. The differences we noticed between the two samples analysed here suggest that the study of a larger number of votive deposits is necessary to provide a better understanding of all aspects of the rites held at the sanctuary.

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Abstract

The sacrifice of animals was an important part of the rite at the *Ploutonion* of Hierapolis (Turkey); as reported by several ancient writers, it was carried out by suffocation caused by the toxic fumes that escaped, together with spring water, from a cave. Strabo clearly describes the sacrifice of bulls and the custom of throwing birds inside the cave: their immediate death was a proof of divine powers, while priests were not harmed by the gases. The archaeological excavations carried out by the University of Salento brought to light numerous votive deposits inside the sanctuary. The results of the study of animal remains from two such deposits are presented here; the material is dated to the 1st–2nd centuries AD, although stratigraphical analyses suggest it was redeposited in Room Q1 of the sanctuary in the 3rd–4th centuries AD. In both deposits the remains of birds are predominant; among mammals, caprine, pig, and cattle remains are the most represented; other mammal remains include few bones of hare and some bones and teeth of two dogs. Caprine, cattle and pig remains belong mainly to young animals. Among the birds, rock dove and domestic fowl are the most common species, followed by the remains of other birds of different sizes, not yet identified to species level. Most of the remains of domestic fowl and rock dove belong to mature individuals. The presence of medullary bone in more than half of the femurs recovered from both deposits indicates that numerous hens were hatching at the time of sacrifice. This is consistent with the discovery of eggshell fragments. Almost complete skeletons of domestic fowl and rock dove have been recorded, suggesting that their carcasses were not processed after suffocation. Furthermore, no evidence for slaughtering was found, while burning marks were very common. Some remains of fish and reptiles suggest that these animals also took part in the rite.

Zusammenfassung

Vogel- und andere Tieropfer im *Ploutonion* von Hierapolis, Phrygien (Türkei): einige Ergebnisse von zwei Votivdeponierungen

Das *Plutonion* von Hierapolis im kleinasiatischen Phrygien (nahe Pamukkale) hat seinen Mittelpunkt in einer Höhle, aus der giftige Dämpfe aufsteigen und eine Quelle entspringt. Strabo berichtet, dass, in ein Geviert vor der Höhle getrieben, selbst Stiere starben und Vögel tot zu Boden fielen, während Priester die Höhle unbeschadet betreten konnten. Der Tod der Tiere galt als Zeichen von Plutos göttlicher Kraft. Archäologische Ausgrabungen der Universität Salento im Heiligtum ergaben eine große Anzahl von Votivgruben. An dieser Stelle werden zwei Deponierungen vorgestellt, die neben Tierknochen auch andere Funde enthielten. Während das Fundmaterial in das 1.–2. Jahrhundert n. Chr. datiert wird, legen stratigraphische Untersuchungen nahe, dass die Gruben erst im 3./4. Jahrhundert angelegt worden sind. Möglicherweise handelt es sich in Raum Q1 um Redeponierungen. In beiden Gruben überwiegen Knochen von Vögeln, unter den Säugetieren sind Überreste von Ziegen, Schweinen und Rindern am häufigsten vertreten; von weiteren Säugetieren sind wenige Knochen von Hasen und einige Knochen und Zähne von zwei Hunden zu nennen. Die Überreste von Ziegen, Rindern und Schweinen stammen hauptsächlich von Jungtieren. Unter den Vögeln sind am häufigsten Knochen adulter Haushühner und Felsentauben vertreten, gefolgt von Vögeln unterschiedlicher Größe, die noch nicht auf Artniveau identifiziert werden konnten. Hinweise auf Mark in mehr als der Hälfte der Oberschenkelknochen der Hühner aus beiden Gruben deutet darauf hin, dass es sich um junge Legehennen handelte. Darauf weisen auch Eierschalen hin, die in beiden Gruben gefunden wurden. Die nahezu vollständige Erhaltung der Skelette zeigt, dass die Vogelkadaver nicht weiter zerlegt wurden. An keinem Knochen konnten Spuren einer Schlachtung nachgewiesen werden, während Brandspuren sehr häufig sind. Einige Überreste von Fischen und Reptilien deuten darauf hin, dass auch diese Tiere als Opfer dienten.

Résumé

Sacrifice d'oiseaux et d'autres animaux dans le *Ploutonion* de Hiérapolis, en Phrygie (Turquie) : quelques résultats de deux dépôts votifs

Le sacrifice d'animaux était un élément important du rite célébré au *Ploutonion* de Hiérapolis (Turquie). Ainsi que le rapportent quelques auteurs anciens, des fumées toxiques mêlées à de l'eau de source qui s'échappaient d'une cavité provoquaient la suffocation des victimes. Strabon décrit clairement le sacrifice de taureaux et la coutume de jeter des oiseaux dans la cavité. Leur mort immédiate démontrait la puissance des dieux, tandis que les prêtres n'étaient pas attaqués par les gaz. Les fouilles archéologiques menées par l'Université de Salento ont révélé de nombreux dépôts votifs à l'intérieur du sanctuaire. Nous présentons ici les résultats de l'étude des restes animaux de deux dépôts. Le matériel date des 1er/2e siècles ap. J.-C., bien que les observations stratigraphiques suggèrent un transfert dans la pièce Q1 du sanctuaire aux 3e/4e siècles ap. J.-C. Les oiseaux dominent dans les deux dépôts. Parmi les mammifères, ce sont les caprins, les porcs et les bovins qui dominent, auxquels s'ajoutent quelques os de lièvres et quelques os et dents appartenant à deux chiens. Les restes de caprins, bovins et porcs proviennent principalement de jeunes individus. Le pigeon biset et la poule domestique représentent les espèces les plus communes, suivis par les restes d'autres oiseaux de différentes tailles dont l'espèce n'est pas encore identifiée. La plupart des restes de poules domestiques et pigeons bisets proviennent d'individus adultes. La présence d'os médullaire dans plus de la moitié des fémurs collectés dans les deux dépôts indique que de nombreuses poules étaient en train de couver au moment du sacrifice. Ceci correspond bien à la découverte de fragments de coquilles d'œufs. On a identifié des squelettes presque entiers de poules domestiques et de pigeons bisets indiquant que les carcasses n'avaient pas été traitées après la suffocation. En outre, aucune trace d'abattage d'animaux n'a été constatée, alors que les traces de combustion étaient très fréquentes. Quelques restes de poissons et de reptiles témoignent de la prise en compte de ces animaux dans le rite.

A herd of sheep led to the slaughter – Evidence of hecatombs at *Losodica*/Munningen (Bavaria)

by *Sabine Deschler-Erb / Andreas Schaflitzl*

Keywords

Sanctuary, *collegium*, burnt offering, *vicus*, *Raetia*

Schlüsselwörter

Heiligtum, *collegium*, Brandopfer, *vicus*, Raetien

Mots-clés

Sanctuaire, *collegium*, offrande incinérée, *vicus, Raetia*

Introduction

In 2009 parts of the Roman *vicus* of *Losodica*, today Munningen in Bavaria, were excavated and an unparalleled quantity of cremated bones was found. Initially, it was thought that these were the remains of several cremation graves, however, other interpretations had to be considered, such as industrial waste or ritual deposits in non-funerary contexts. Therefore, the material was subject to archaeozoological analysis to provide further interpretative information. Here we present our first results[1].

The site

Munningen is situated in the western part of Bavaria near the northern rim of the Nördlinger Ries, a 15 million year old impact crater 20–25 km in diameter, filled with fertile sediments *(fig. 1)*. Thus, the region has good conditions for farming, and we know that this activity took place here during Roman times[2]. This *limes* region was protected by several Roman camps, among them the fort of Munningen, which was founded at the end of the 1st century AD[3]. It had good connections to the Roman road system, and some roads even changed direction

1 The recent excavations of 2009 are the subject of an ongoing dissertation by Andreas Schaflitzl at the University of Bern. The documentation and analysis of the objects are still in progress, so this article can only give a rough overview of what is already known – especially in reference to the fine dating of the feature sequence.

2 The climate is a little warmer and arid in the Ries compared to the surrounding parts of South Germany (Ongyerth 1998, XIII).

3 There are different opinions on the foundation date of the fort. For the variously discussed dates see for example Baatz 1976, 34 (around AD 90); Heiligmann 1990, 196 (refers to a dendrochronological date of AD 104 ± 10 for a construction of part of

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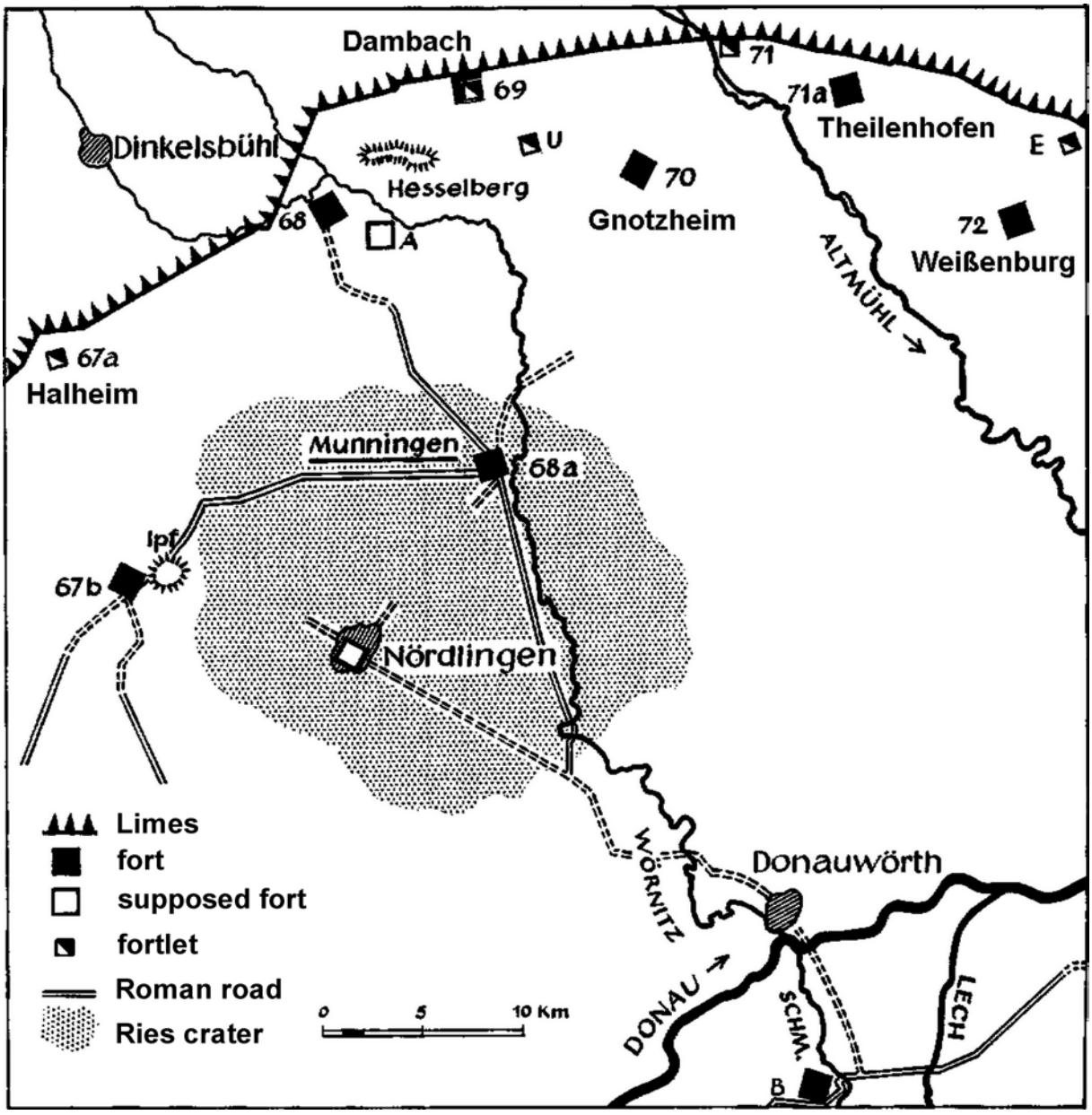


1 Map of the area around the Nördlinger Ries with Munningen and its correlation to the Limes (after Baatz 1976, fig. 1).

whilst crossing the camp[4]. This military base seems to have been abandoned only after a short period of occupation before AD 110[5]. When the soldiers left, the ditches were filled up and civilian buildings were constructed in the former military area. A massive destruction event is attested by the so-called '*Munninger Brandschicht*', which D. Baatz dates to the 170s[6]. The settlement seems to end no later than the end of the 2nd century AD, but some rare finds indicate that people may have been present until the middle of the 3rd century AD.

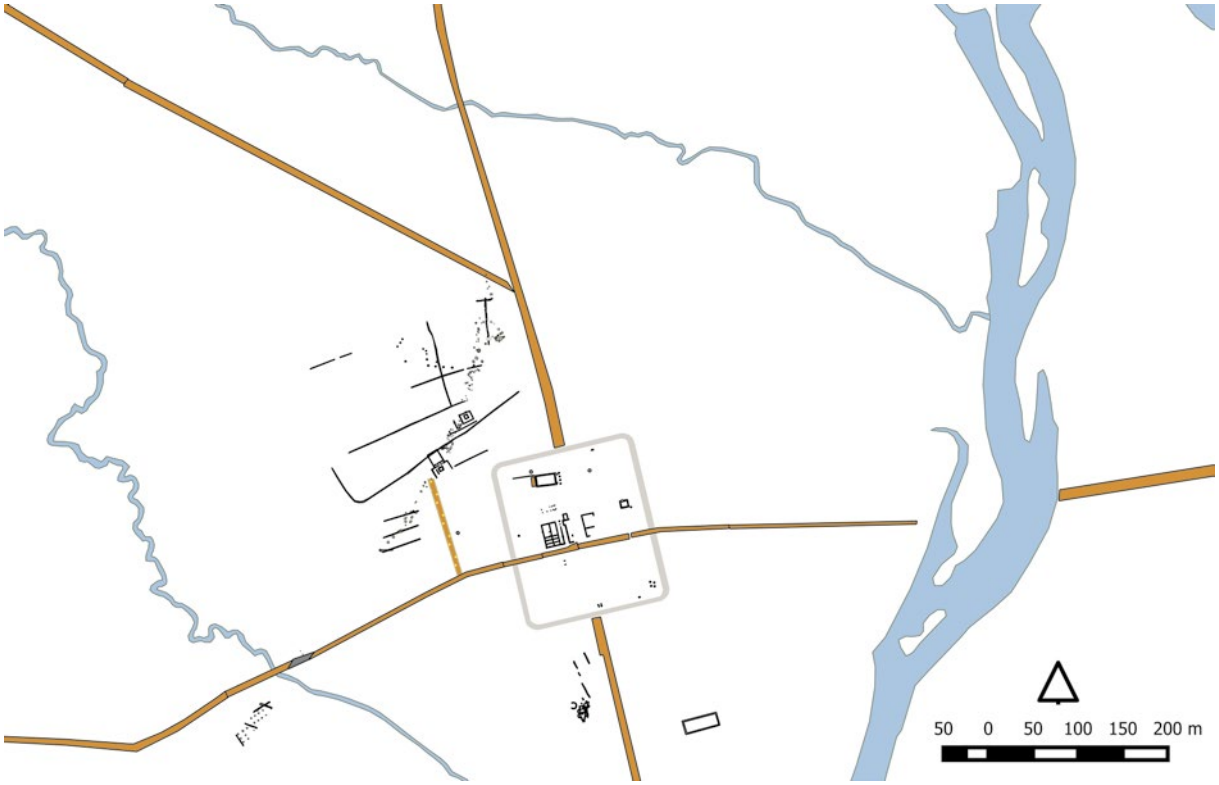
Since the discovery of the camp in 1893, investigations have focused on the camp itself and the later *vicus* built in the former military area. In 2009, the construction of a bypass finally gave archaeologists the chance to

the fort) and Kortüm 1998, 44 (sees the beginning around AD 110).

4 For an analyse of the infrastructure in Munningen see Schaflitzl 2016, 84–86.

5 Baatz 1977, 27.

6 Baatz 1976, 16–17 confirms the late dating suggested by R. Nierhaus. Th. Fischer sees the incident later after the Marcomannic wars maybe at the time of Commodus or Septimius Severus (Fischer 1994, 346–347).



2 Map of the *vicus* of Munningen following the results of magnetic surveys and excavations (Schaflitzl 2016, fig. 1).

excavate parts of the *vicus* outside the military area for the first time[7].

Roman remains were found within a 600 m long and rather narrow area *(fig. 2)*. In the northern area, a zone with public buildings and the foundation of a Romano-Celtic temple were excavated. No Roman layers survived here because of the ground erosion, and finds are very rare and cannot unequivocally be connected to any religious activities.

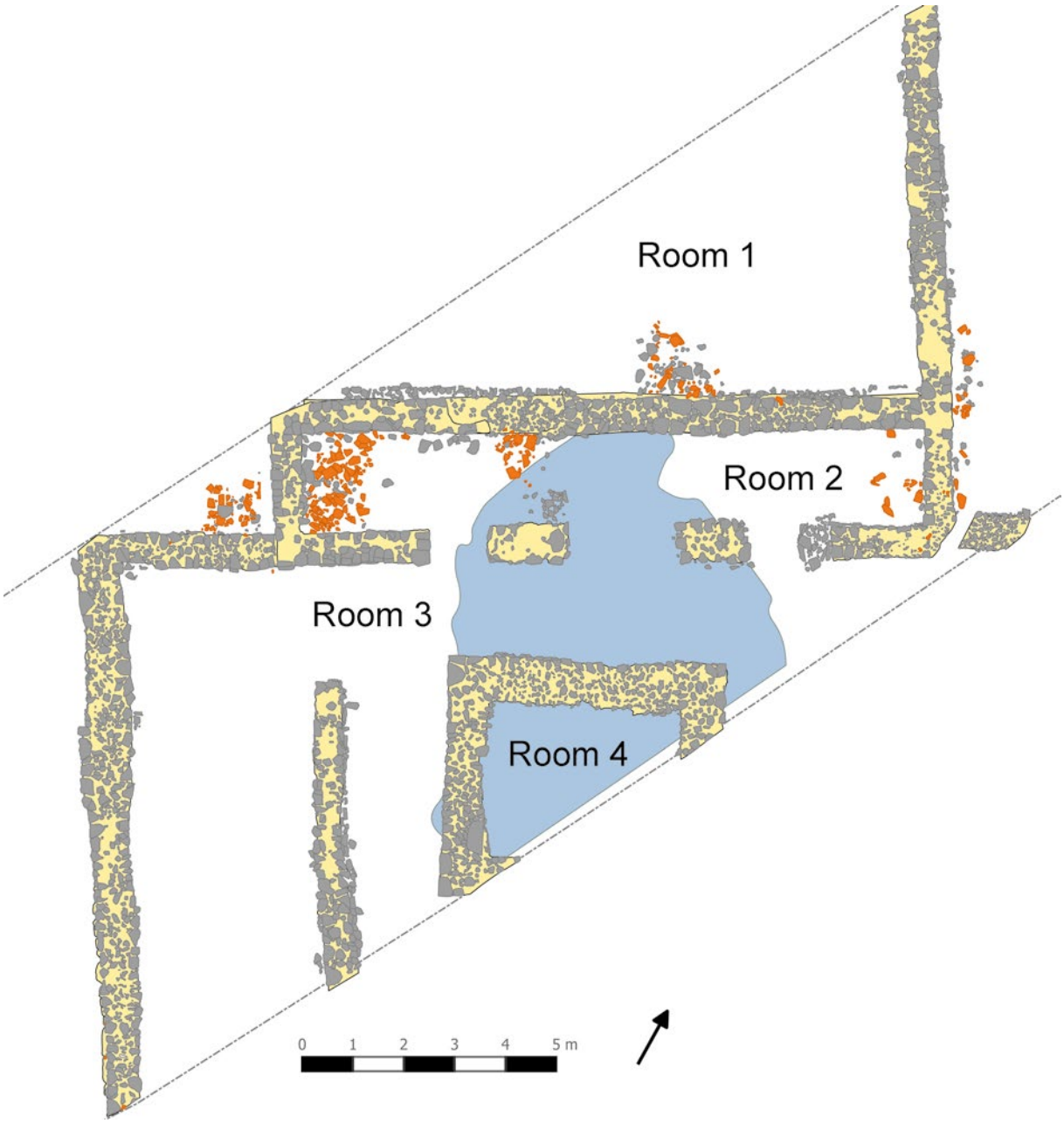
About 40 m to the south, a stone building – probably a temple – with different construction phases survived *(fig. 3)*[8]. In its first phase the building measured about 16 x 13.5 m. The interior was divided into two rooms: a rectangular main room and, in front of it, a corridor, which was likely the main entrance (Room 2). In a second phase a forecourt was added (Room 3). Supposedly at the same time or earlier, another, almost rectangular structure was constructed (Room 4).

In the southern corridors of Room 3 fragments of two inscription tablets were found[9]. One is obviously a building inscription. It mentions a *collegium* as the dedicator and a *templum*. The second was found along the latest wall and proves the reconstruction of an ambulatory in Severan times.[10]

Many remarkable objects were found in the building: parts of small sandstone statues were found in Room 1. Furthermore, several pieces of plate armour (*lorica segmentata*) were found in Room 1 and 3. One of these was a back-plate, with two rectangular holes indicating that the armour was fixed somewhere with nails. A spearhead and a shield rim were also discovered. Additionally, a bronze lyre key belonging to a musical instrument was recovered from Room 2.

Room 4 was filled with a large quantity of highly fragmented and burnt bones, and this kind of material was also found to the north-west in Room 3 and Room 2 *(fig. 3)*. These layers were not found on or between the walls, which indicates that they were deposited when the building was in use and not afterwards[11]. No burnt sediments were recognised, so this bone material, which is mixed with charcoal, must have been burnt somewhere else and brought here when it had cooled.

7 Preliminary reports are published by Loré 2010 and Herzig / Berg-Hobohm 2010.
8 Loré 2010, 97–98.
9 Scholz / Schaflitzl 2018.
10 Cf. inscription 2 in Scholz / Schaflitzl 2018.
11 Of course, there are some findings on top of the walls but this is likely caused, when the plug spread the interior of Room 4, so they are mixed up with debris from the demolition of the buildings.



3 Ground plan of the stone building. Blue is the layer where the carbonised bones were found (feature no. 187) (A. Schaflitzl).

The cremated bones

The sediments with the bone concentration were sieved (mesh sizes 4 and 2 mm) resulting in about 250 litres of burnt bones. Due to this large volume, only a small quantity of the total material could be analysed. We decided to take out samples of 250 ml from 32 units. The determinable bones (n = 3353) were sorted and recorded with OSSOBOOK[12]. The remaining bones were weighed and the number of fragments was estimated at about

12 Kaltenthaler et al. 2019.

4 Profile in feature no. 187: carbonised bones within the debris of the walls (photo: ADILO).

2.5 million. For the whole structure this number has to be doubled, because only half of Room 4 was excavated.

91 % of the determined bones were heavily burnt, mostly at temperatures clearly over 600 °C. 94 % of these bones come from sheep or goat. Some of them could be specified as sheep, but none as goat, therefore it's quite probable that all of these bones belong to sheep. 59 % of these animals were adult when they were killed. 4 % of the remaining bones come from cattle and 1 % from pig (*fig. 5*). The analysis of skeletal elements indicated that, for both sheep/goat and cattle there is an overrepresentation of bone fragments from the feet (*autopodium*) and to a lesser extent from the head (fig. 6)[13].

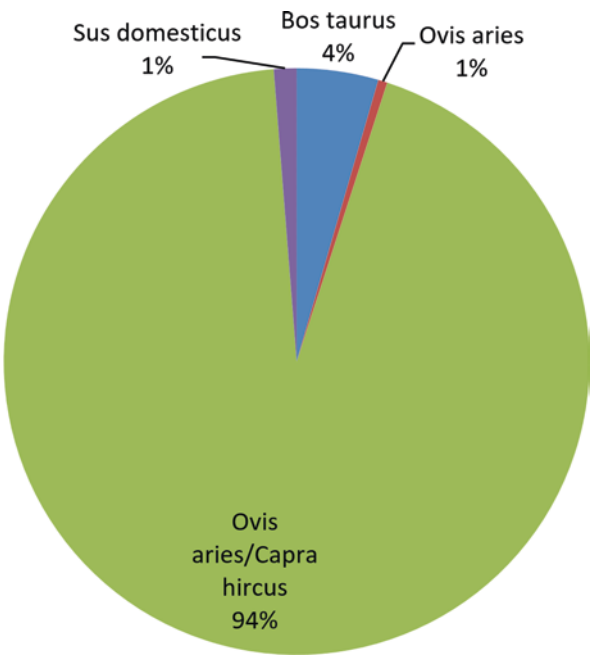
Discussion

The fact that only animal and no human bones were recovered contradicts the theory that these are funerary remains. The large quantity of heavily burnt bones from sheep/goat however is quite unusual for the living areas of a Roman *vicus*. The animal species frequency among food remains from other areas of Munningen is also completely different: cattle bones and also pig bones are clearly more important than sheep/goats, which never reach a proportion higher than 30 %[14]. But what is the reason for the selection of sheep/goat bones in the 2009 excavation? One possibility is that this is industrial waste, e. g. from tanneries. In Roman times head and foot bones were still attached when tanners got the hides from the butchers. Therefore, archaeozoologists often interpret a concentration of such bones as tannery waste. However, these bones are not normally burnt[15]. Another

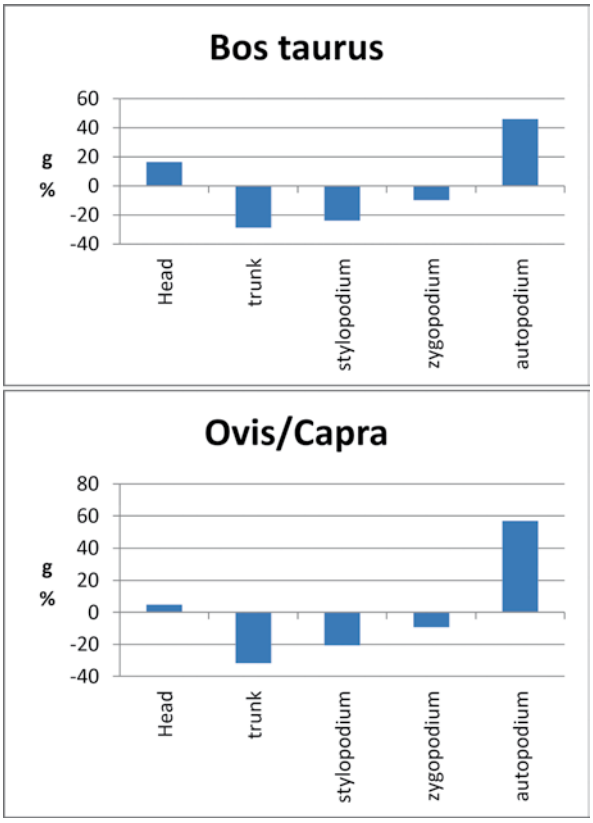
13 For the reference skeletons used see https://ipna.duw.unibas.ch/de/forschung/archaeobiologie/archaeozoologie/methodik/.

14 Napierala unpubl.

15 Amrein et al. 2012, 127–135.



5 Animal species frequency (n=3353).



6 Proportion of the weight of cattle and sheep/goat bones for each body part compared to a modern reference skeleton.

possibility could be that these bones were used as fuel for metal working, as was the case at the site of Courrendlin in the Swiss Jura. But there the larger cattle bones were used[16] and enough larger bones would have been available for industrial use at the *vicus* of Munningen if necessary. Therefore, just a single interpretation remains: the bones could be the vestiges of a ritual act.

Burnt offerings – mainly of sheep/goat and pig – have been found e. g. in different temples of *Aventicum* (Avenches, CH). There is even evidence that complete animal bodies have been burnt (so called *holocausts*)[17]. However, in *Aventicum* far fewer burnt bones than in the building of Munningen have been found, so it is unlikely that they belong to a single ritual action, but rather to a longer lasting ritual practice. Similar concentrations of heavily burnt cattle and sheep/goat head and foot bones, as well as massive assemblages of bones dating from the Bronze Age to the Roman period have been found at several off-site areas (so called '*Brandopferplätze*') in the alpine region. At these sites, which were often located on prominent landmarks, animals and plants, but also ceramics, weapons and tools have been sacrificed on altars over a long period. Some of the heaps of bones found at these places have a diameter of more than 20 m[18]. The closest Roman example is about 70 km away[19]. It seems that Munningen could be the first case of such a local ritual act in a Roman *vicus*.

Conclusion

Through this study of the burnt bones from a building of the *vicus* of Munningen it was possible to reject a number of potential interpretations, for example that this assemblages represented funeral remains or industrial waste. Instead, our work has shown that the most plausible interpretation is that these bone remains are

16 Deschler-Erb 2011.
17 Deschler-Erb 2015, 103–105.
18 Wischenbarth 2017.
19 Wischenbarth 2017.

the vestiges of a ritual act that has its roots in a local tradition north of the Alps. However, for tangible conclusions further investigation into other similar places and features is needed.

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Fig. 1: After Baatz 1976, fig. 1. – Fig. 2: Schaflitzl 2016, fig. 1. – Fig. 3: A. Schaflitzl. – Fig. 4: Photo: ADILO). – All other figures: Authors.

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Abstract

In a building within the Roman *vicus* of Munningen a huge amount of heavily burnt bones were recovered. The archaeozoological analysis presented here provides evidence for ritual acts following a local tradition.

Zusammenfassung

Eine zum Schlachter geführte Schafherde – Hinweise auf Hekatomben in *Losodica*/Munningen (Bayern)

In einem Gebäude des römischen *vicus* von Munningen fand sich eine große Menge an stark verbrannten Knochen. Die archäozoologischen Untersuchungen lassen Überreste ritueller Handlungen vermuten, die in einer einheimischen Tradition stehen.

Résumé

Un troupeau de moutons mené à l'abattage – présence d'hécatombes à *Losodica*/Munningen (Bavière)

Une énorme quantité d'os fortement brûlés a été mise au jour dans un bâtiment du *vicus* romain de Munningen. L'analyse archéozoologique présentée ici établit l'existence d'actes rituels perpétuant une tradition locale.

Animals in funerary ritual in the Roman Netherlands

by *Maaike Groot*

Keywords

cemetery, Roman, Late Iron Age, Netherlands, funerary ritual, animals, burned bone

Schlüsselwörter

Gräberfeld, römisch, Späte Eisenzeit, Niederlande, Bestattungsrituale, Tiere, verbrannte Knochen

Mots-clés

nécropole, romain, âge du Fer tardif, Pays-Bas, rituel funéraire, animaux, os brûlé, incinération

Introduction

This paper provides a review of animal remains from cremation graves in the Roman Netherlands in order to highlight the role of animals in funerary ritual. The study will focus on two regions: the river area in the central Netherlands, which roughly coincides with the Roman *civitas Batavorum*, and the south-eastern part of the Netherlands (covering the Dutch part of the *civitas Tungrorum*). Although the focus will be on the Roman period, there will be some overlap with the Late Iron Age, for two reasons. First, it is not always possible to separate Late Iron Age from early Roman graves, and a larger data set is available when those graves are included. Second, it offers the opportunity to look for continuity or discontinuity of funeral practices during the Late Iron Age/Roman transition. A recent paper focusing on funerary ritual in the Iron Age will further enable a chronological comparison[1].

The paper will attempt to answer the following questions. What animal species were selected for funerary ritual? Is there a difference compared to animal remains found in settlements? Were certain body parts selected for burning on the pyre? Is there a difference between the burned and unburned animal remains found in graves? What animal remains are found in cemeteries in features other than graves? Are there any differences between the two study regions? Are there any differences between the Late Iron Age and Roman period? The focus will be on broad regional and temporal trends in the role of animals in funerary rituals rather than the differences between the individual cemeteries.

Funerary ritual in the Late Iron Age and Roman Netherlands

The most common method for disposal of the dead in the 1st century AD in the Roman-occupied part of the Netherlands was cremation. Parts of animals, pottery and sometimes glass were placed on the pyre and burned with the deceased. The remains of the animals were thus mixed up

1 van den Helm / Van Dijk 2017.

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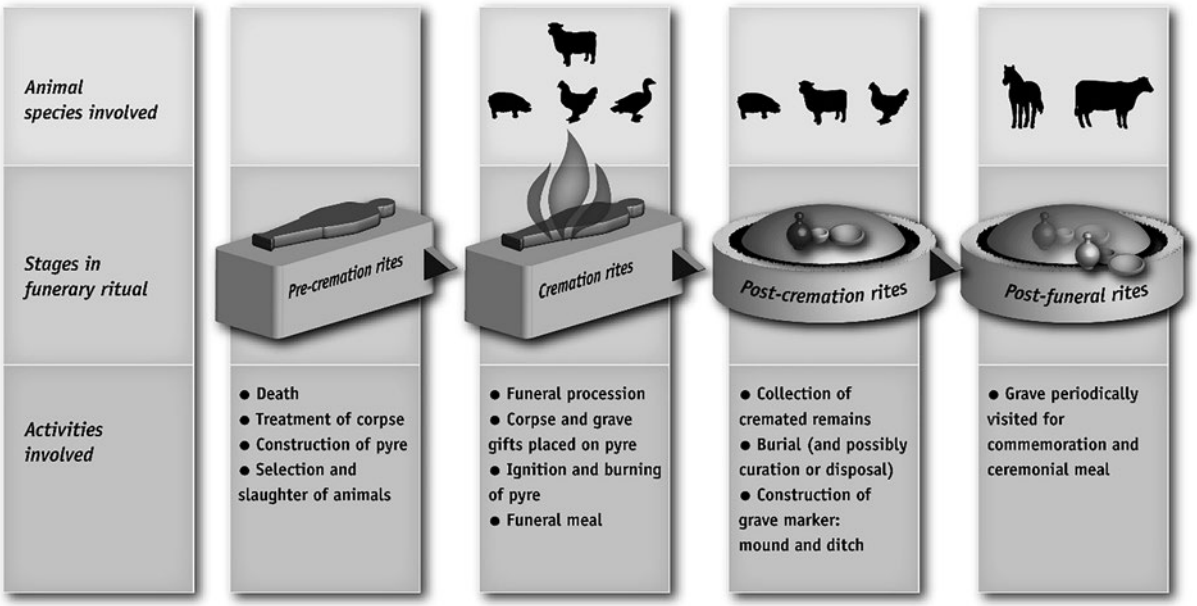


1 Stages of funerary ritual and the role of animals as suggested for the Roman cemetery of Tiel-Passewaaij (Groot 2008, fig. 4,14).

with the human cremated remains[2]. After cremating the dead, only parts of the cremated remains were collected and buried in a grave[3]. Unburned grave goods such as tableware, portions of meat, knives, coins, and personal items were placed in the grave with the washed cremated remains[4]. The grave was covered by a small mound and surrounded by a round or rectangular grave ditch. There is some evidence that people returned to the grave for commemoration[5]. Because of the nature of archaeology, our data is heavily biased towards the later stages in funerary ritual, when organic and inorganic material is buried underground *(fig. 1)*[6]. Traditionally, excavation has tended to focus on the central grave. The cemetery of Tiel-Passewaaij has shown that other features in the cemetery demand just as much attention if we are to understand all aspects and phases of funerary ritual[7]. The ditches surrounding cremation graves, for instance, can also contain finds. It is important to be aware of the fact that by focusing on animal remains, we are of course only looking at one element in a complex social practice. Previous publications have included material culture and/or used an anthropological approach to studying funerary ritual[8].

Methodology

Identification

Most of the animal bone fragments from cemeteries are completely calcined and heavily fragmented, which makes identification challenging. Ribs and vertebrae are usually only identified to size (e. g. medium or large mammal). It is important to consider this category when analysing anatomical elements in graves, otherwise we would be missing an entire body part, which is rich in meat. Worked bone is not included in this study, since this represents artefacts, whereas most of the animal bones represent food offerings.

2 It was probably not possible for the family to separate the burned human from the accompanying burned animal remains, so that burial of the cremated animal remains may be accidental rather than deliberate.
3 Hiddink 2003a, 121; Parker Pearson 1999, 7.
4 Since usually little charcoal is found, it is assumed that the cremated remains were generally washed. Aarts / Heeren 2017, 135.
5 Aarts / Heeren 2017, 139; Groot 2008, 184–186.
6 See Aarts / Heeren 2017, 131–139 for a discussion of all aspects of the funerary ritual.
7 Aarts / Heeren 2011.
8 E. g. Aarts / Heeren 2017; Groot 2008; Hiddink 2003b.

Quantification

Quantification in cremation cemeteries is not straightforward and should be approached differently from that in settlements. In studying settlement refuse, it is possible that several fragments from the same species, found in different features dating to the same period, could be part of one individual. Slaughter and butchery will result in separation of different body parts, which could end up in different parts of the settlement. Refuse can also stay above ground for a while or be dumped secondarily. In cremation cemeteries, we are dealing with features that represent distinct events. It is unlikely that different graves date to the exact same moment. For each burial, separate individual animals are butchered. In this case, fragments from the same species from different graves should be understood as different individuals. Also, fragments from the same species within a grave are likely to be from the same individual, unless there are indications that contradict this (e. g. two right hind legs, or animals of different ages). Therefore, it is more appropriate to use the number of fragments for settlements, and the number of times a species is found in graves for cemeteries. There is another reason against using the number of fragments. In the Roman Netherlands, we always find just part of what was originally present on the funeral pyre, because only part of the burned fragments was selected for burial[9]. In settlement refuse, what ends up in below-ground features is more random or caused by other factors. Nevertheless, the number of fragments will also be included here, as it may provide insight into the amount of meat placed on the pyre.

Burned vs. unburned

In cemeteries with good preservation conditions, burned as well as unburned animal bones are found. The river area mostly has clay soils, which preserve bone very well. In the south-eastern Netherlands, the sandy soils are not conducive to good bone preservation, and only completely calcined bones are found. This limits the questions that can be asked and results in a biased view. The cemeteries in the river area that provide evidence on unburned animal bones give us a more complete picture of funerary ritual. In comparing the two regions, it is important that only the burned bones from the river area are compared with those of the south-eastern Netherlands, since including the unburned bones could distort the comparison.

Body parts and meat portions

To understand the role of animals in funerary ritual, we can reconstruct the body part or meat portion that was placed on the pyre, based on the elements that are present. In many cases, several elements from a body part are present, such as for instance in grave 723-2 from Nederweert-Rosveld, where fragments from a pig's pelvis, tibia, calcaneum, astragalus and phalanx are present. In that case, it is clear that a hind limb from a pig has been burned in its entirety. Including those fragments of bone only identified to size can add to the confidence of the reconstruction. For example, the combination of a pig tibia and a medium mammal femur in grave 1209 in Nederweert-Hoebenakker leads to a more secure reconstruction of the presence of a hind limb. When only one element is present, e. g. a tibia or calcaneum, it is possible that this is a result of the selection of only part of the cremated remains for burial, and that a whole hind limb was originally present. To increase the size of the data set, in this study, it has been assumed that an entire body part was present on the funeral pyre even when only one element is present. However, we will later see that this may not be a valid approach.

Data set

For this study, only cremation graves and their accompanying ditches have been included. Inhumation graves are much rarer and have not been included, since they represent a different kind of funerary ritual.

For the river area, eleven cemeteries are included in the study *(tab. 1; fig. 2)*, although data from two of them have been combined, since the two cemeteries from Tiel-Medel-Afronding are located close together and each one has only a few graves with animal bones. Six of the cemeteries include both burned and unburned animal bones. All cemeteries date to the Roman period. The data set for the river area consists of a total of 127 graves with identified burned animal remains.

9 Hiddink 2003a, 121; Aarts / Heeren 2017, 135; Lauwerier 1990, 3.

For the south-eastern Netherlands, nine cemeteries are included in this study *(tab. 1)*. The cemetery of Nederweert-Hoebenakker was excavated and analysed during three different campaigns and the results are presented separately here. Five cemeteries provide data for the Roman period (76 graves with identified burned animal remains), four cemeteries for the Late Iron Age (76 graves with identified burned animal remains) and four cemeteries for the Late Iron Age/Roman period (63 graves with identified burned animal remains). For two of the Late Iron Age/Roman cemeteries (Nederweert-Rosveld and Someren-Waterdael), the data have not been split up according to the different periods, as this resulted in too much data loss[10]. Some of the graves from Nederweert-Hoebenakker and Weert-Molenakkerdreef could not be dated more accurately than Late Iron Age/Roman.

site	region	date	n cremation graves	n graves with animal bone	n graves with burned animal bone	% graves with burned animal bone	n graves with identified burned animal bone
Tiel-Passewaaij*	RA	50–270 AD	230	111	86	37	31 (44)
Zaltbommel-De Wildeman*	RA	50–200 AD	86	23	19	22	10 (12)
Zoelen-Scharenburg*	RA	100–250 AD	34	25	24	71	18 (19)
Huissen-Loovelden*	RA	mid-1st–early 4th c. AD	102	59	31	30	20 (49)
Nijmegen-Hatert	RA		188	20	20	9	15
Cuijk-Heeswijkse Kampen	RA	0–150 AD	131	18	18	14	15
Tiel-Medel Afronding*	RA	40–270 AD	80	21	18	23	8 (15)
Valburg-Molenzicht*	RA	late 1st–first half 3rd c. AD	27	16	12	44	3 (7)
Cuijk-Grotestraat	RA	150–250 AD	42	4	4	10	3
Oss-Ussen Zuidoost	RA	Roman	93	4	4	4	4
Maasbree-Siberië	SN	Early Roman/Middle Roman	59	18	18	31	13
Weert-Kampershoek Noord 2	SN	Early Roman/Middle Roman	135	26	26	19	20
Weert-Kampershoek	SN	Roman	19	5	5	2	3
Nederweert Hoebenakker 2009	SN	Roman	82	16	16	20	10
Nederweert-Hoebenakker 2013–2014	SN	Roman	146 for all periods	24	24	46 for all periods	15
Weert-Molenakkerdreef	SN	Roman	43	17	17	42	15
Nederweert-Hoebenakker 2013–2014	SN	LIA/Roman	146 for all periods	19	19	46 for all periods	10
Nederweert-Rosveld	SN	LIA/Roman	125	42	42	28	25
Someren-Waterdael	SN	LIA/Roman	95	41	41	43	17
Weert-Molenakkerdreef	SN	LIA/Roman	31	13	13	39.5	11
Weert-Kampershoek Noord 7	SN	LIA	15	7	7	47	3
Nederweert-Hoebenakker 2013–2014	SN	LIA	146 for all periods	24	24	46 for all periods	20
Nederweert-Hoebenakker 2017	SN	LIA[11]	33	17	17	52	11
Weert-Molenakkerdreef	SN	LIA	36	23	23	64	20
Helden-Panningen-Stokx	SN	LIA	61	39	39	64	22

Tab. 1 Cremation cemeteries included in this study, with information on their dates, total numbers of cremation graves and numbers of cremation graves containing animal remains. *: cemetery has yielded both burned and unburned animal bones. RA: river area: SN: south-eastern Netherlands. n cremation graves: either the number excavated or the number examined by a physical anthropologist, whichever is the smallest. This number should be seen as an estimate, since depending on the amount and weight of cremated remains present, not every grave may have been counted in the excavation report. This can vary between cemeteries. n graves with identified animal bone: the number in brackets includes graves with identified unburned bone. Tiel-Medel Afronding: data from two cemeteries (Hazenkamp and De Reth). See *table 9* in the appendix for references for the zooarchaeological publications for all cemeteries.

10 Nederweert-Rosveld: 25 graves with identified animal bones in total, out of which one dates to the Roman period and five to the Late Iron Age. Someren-Waterdael: 17 graves with identified animal bones in total, out of which nine date to the Roman period and two to the Late Iron Age.

11 With the exception of one Roman grave.

2 Map of the Netherlands with the sites included in this study.

Results

Proportion of graves with animal remains

For the river area, 4 to 71 % of all cremation graves contain burned animal remains, with an average of 23 %. For the southern Netherlands, the proportion of Roman cremation graves with animal bones varies from 19 to 42 %, with an average of 24 %. For the Late Iron Age/Roman graves, 28 to 43 % of graves contain animal remains, with an average of 38 %. For the Late Iron Age graves, 47 to 64 % of all graves contain animal bones, with an average of 59 %. For all periods for the cemetery of Nederweert-Hoebenakker (excavations 2013–2014), the proportion of cremation graves containing animal remains is 46 %.

Graves: presence of species

Pig is present in all 15 larger cemeteries (more than ten graves with identified burned bones). Sheep is absent only in the cemetery of Zaltbommel-De Wildeman. Chicken is present in seven of the nine Roman cemeteries and absent in all Late Iron Age and Late Iron Age/Roman cemeteries. Chicken is not found in the Netherlands until the Roman period, so that explains its absence. Cattle is also found in seven cemeteries and seems more common in the river area (present in four out of six cemeteries and three out of nine cemeteries in the south-eastern Netherlands). Horse is only found once, in the Late Iron Age cemetery of Helden-Panningen. Goose is found in three and duck in two cemeteries, all situated in the river area. In most cases, it is not known whether the ducks and geese are wild or domestic[12]. The exception is a diving duck (*Athya* sp.) in Zoelen-Scharenburg. While deer is present in three cemeteries, in all cases only antler is found, and the finds represent artefacts rather than food.

In the majority of graves, only one species is present, but some graves have fragments of two or more species. The maximum is four in a grave in Zoelen-Scharenburg: pig, sheep, duck and diving duck. The data show a difference between the two regions: a higher proportion of graves in the river area have remains of more than one species than in the cemeteries in the south-eastern Netherlands *(tab. 2)*.

	1 species	2 species	3 species	4 species	total
river area	90	29	7	1	127
river area %	71	23	6	1	
south-eastern NL Roman	62	12	2	–	76
south-eastern NL Roman %	82	16	3	–	
south-eastern NL LIA/Roman	59	4	–	–	63
south-eastern NL LIA/Roman %	94	6	–	–	
south-eastern NL LIA	58	18	–	–	76
south-eastern NL LIA %	76	24	–	–	

Tab. 2 Number of animal species present among the burned animal remains in cremation graves.

Graves: proportions of species

Table 3 shows the number of times animal species are found in cremation graves (burned remains only) as well as the percentage out of the total number of cremation graves with burned, identified animal bones. In the river area, chicken and cattle are found in a higher proportion of graves than in the south-eastern Netherlands. Goose and duck only occur in the river area. In the south-eastern Netherlands, pig and sheep or goat are both found in higher proportions in Roman graves than in the river area *(tab. 3)*. For the Late Iron Age/Roman period, the proportion of graves with sheep or goat bones is comparable to that in the Roman river area, but pig is found in a much higher proportion in the south-eastern Netherlands. In the Late Iron Age south-eastern Netherlands, the proportion of pig is even higher, while proportions of graves with sheep or goat are similar to those from other periods in this region. The only grave with horse remains dates to this period. As in the other periods in the southeast, cattle is found, but very infrequently.

12 However, since wild ducks and geese are nowadays very common in the river area and neither is found in cemeteries in the south-eastern Netherlands, it seems likely that they represent wild rather than domestic species. Furthermore, there is no evidence for domestic duck in the Netherlands until the Middle Ages. Çakirlar et al. 2019.

	pig	sheep/goat	chicken	cattle	horse	goose	duck	n
river area	66	42	33	8	–	6	5	127
river area %	52	33	26	6	–	5	4	
south-eastern NL Roman	48	30	9	1	–	–	–	76
south-eastern NL Roman %	63	39	12	1	–	–	–	
south-eastern NL LIA/Roman	42	18	–	1	–	–	–	57
south-eastern NL LIA/Roman %	74	32	–	2	–	–	–	
south-eastern NL LIA	62	28	–	2	1	–	–	76
south-eastern NL LIA %	82	37	–	3	1	–	–	

Tab. 3 Number of graves per species and percentages out of the total number of graves with identified, burned animal bone. Since more than one species can occur in a single grave, the total percentage exceeds 100 %.

Numbers of fragments

Pig is not only the most common species with regard to the number of graves it is found in, but also dominates the number of fragments, with 47 % for the Roman river area and 62 % for the Roman south-eastern Netherlands *(tab. 4)*. In the Late Iron Age and Late Iron Age/Roman graves, it is found in even higher proportions. Sheep or goat may be the second most common species in terms of presence in graves, but in terms of number of fragments, for the Roman period in the river area, chicken takes the second place. This is not the case in the south-eastern Netherlands.

	pig	sheep/goat	chicken	cattle	horse	goose	duck	n
river area	225	68	164	6	–	10	4	477
river area %	47	14	34	1	–	2	1	
south-eastern NL Roman	113	54	12	2	–	–	–	181
south-eastern NL Roman %	62	30	7	1	–	–	–	
south-eastern NL LIA/Roman	89	25	–	1	–	–	–	114
south-eastern NL LIA/Roman %	78	22	–	1	–	–	–	
south-eastern NL LIA	154	45	–	4	1	–	–	204
south-eastern NL LIA %	75	22	–	2	<1	–	–	

Tab. 4 Number of burned fragments per species in cremation graves. Not including Nijmegen-Hatert, since no numbers of fragments are published for this cemetery.

Graves: body parts

For the river area, the proportions of body parts of pig burned on the pyre are roughly equal for the head, front leg and hind leg *(fig. 3)*. For sheep or goat, hind legs are overrepresented with 51 %, followed by 29 % for front legs and small proportions for the foot, head and rump *(fig. 4)*. Unidentified medium-sized mammal is represented by 57 % rump, 24 % head and smaller proportions for the legs.

In the Roman south-eastern Netherlands, 54 % of pig body parts are hind legs, followed by 30 % front leg and small proportions of head, rump and foot. For sheep or goat, hind legs slightly outnumber front legs and there is a small proportion of feet. Body parts not further identified than medium-sized mammal are the rump, front and hind leg. In Late Iron Age/Roman graves in the south-eastern Netherlands, body parts from pig are dominated by hind legs with 84 %, with small proportions of front leg, rump and head. Hind legs are only slightly overrepresented for sheep or goat, with 55 % hind leg and 45 % front leg. The body parts from medium-sized mammal are mostly from the rump (60 %) and hind leg (27 %). Hind legs of pigs are similarly dominant in Late Iron Age graves (87 %), with the remaining body parts all front legs. For sheep or goat, hind legs are also the most commonly offered body part (77 %); all other body parts are front legs. Among the medium-sized mammal bones, the rump dominates with 91 %; the other 9 % are front legs.

Overall, left front and hind legs of both pig and sheep or goat dominate over right limbs *(fig. 5)*. This difference is most pronounced for the Late Iron Age and more so for pig than for sheep or goat. While the overrepresenta-

tion of left hind limbs is not statistically significant for the individual phases and regions, it is so when the data are combined ($p = 0.018$)[13].

Relationship between sex of deceased and animal species

The number of graves with identified animal remains and human remains with sex determination is usually quite small and the sex determinations have varying degrees of certainty. Any tentative patterns that have been suggested for individual cemeteries disappear when data are combined to reach a larger sample size. For the river area, bird remains are most common in graves of men, pig remains in graves of women and remains of sheep or goat in children's graves *(fig. 6)*[14]. However, these differences could just be due to the still small sample size, and there is no statistical significance[15]. For the south-eastern Netherlands, again, no clear pattern is visible. Bird remains are more common in graves of women than in those of men and children, sheep or goat is found slightly more often in children's graves and pig is most common in graves of men *(fig. 7)*[16]. As for the river area, the differences are not statistically significant[17].

Slaughter ages

Pigs included in funerary ritual in the Roman river area were mostly slaughtered at an age younger than 2/2.5 years *(fig. 8)*. A dominance of young pigs is also found in most settlement sites in the central Roman Netherlands[18]. Young pigs also dominate in graves in the south-eastern Netherlands (all periods combined), but to a somewhat lesser extent. Due to the absence of preserved unburned bone in most sites in the south-eastern Netherlands, no comparison with settlements can be made for this region. For sheep and goat, the data set for slaughter ages is too small to say much, but there does not seem to be such a strong focus on young animals here[19].

Unburned animal bone

The study of unburned animal bones in cremation cemeteries is limited to six sites in the river area, since unburned bone is not preserved in most of the sites included in this study. In graves, sheep or goat is most commonly found, followed by cattle and then pig *(tab. 5)*. Species present with unburned remains that were not represented among the burned bones are horse (found only once in a Late Iron Age grave in the south-eastern Netherlands), dog and fish. In terms of numbers of fragments, pig is the best represented species, followed by sheep or goat and cattle. Cattle is often represented by a single bone, and, as suggested for the cemetery of Huissen-Loovelden, this should perhaps be seen as a symbolic gift (*pars pro toto* for an entire animal) rather than a food offering[20]. Combinations of more than one species are also found among the unburned animal bone, with a maximum of five species in a grave in Huissen-Loovelden. Combinations are found more often among the unburned and combined burned/unburned bone than when only the burned bone is taken into account *(tabs 2 and 6)*.

13 Single proportion test in PAST 3.23; hypothetical proportions: 50 % left, 50 % right. The difference for the Late Iron Age southern Netherlands is significant (0.02), but this significance is lost when a correction for multiple testing is applied (Holm method).

14 Based on data from Tiel-Passewaaij, Zaltbommel-De Wildeman, Zoelen-Scharenburg, Huissen-Loovelden, Tiel-Medel-Afronding and Valburg-Molenzicht.

15 Chi-square test in PAST 3.23.

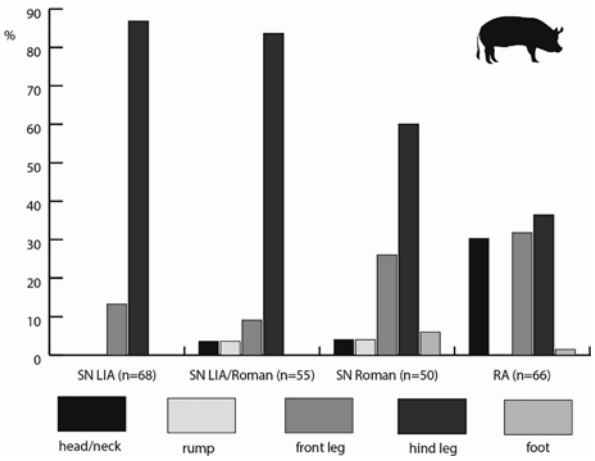
16 Based on data from Maasbree-Siberië, Nederweert-Hoebenakker 2013–2014, Someren-Waterdael, Nederweert-Rosveld, Weert-Kampershoek Noord 2 and 7 and Helden-Panningen.

17 Chi-square test in PAST 3.23.

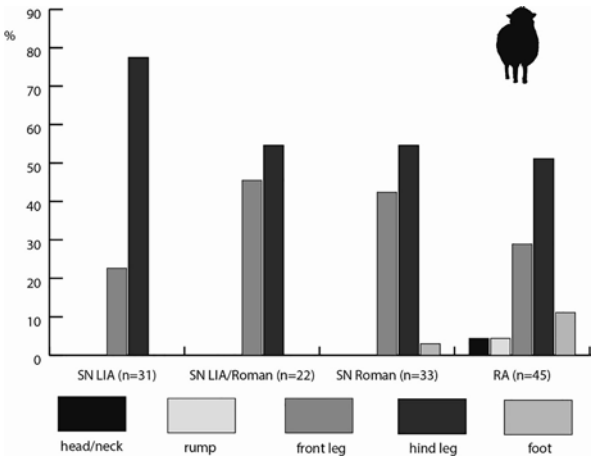
18 Groot / Deschler-Erb 2015, 453; 455 fig. 10.

19 River area: seven younger than 2/2.5 years, four older than 2/2.5 years. South-eastern Netherlands: eleven younger than 2/2.5 years, twelve older than 2/2.5 years

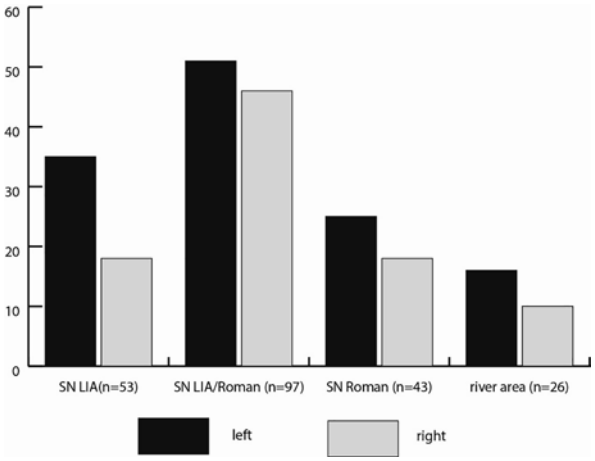
20 Groot 2017, 130.



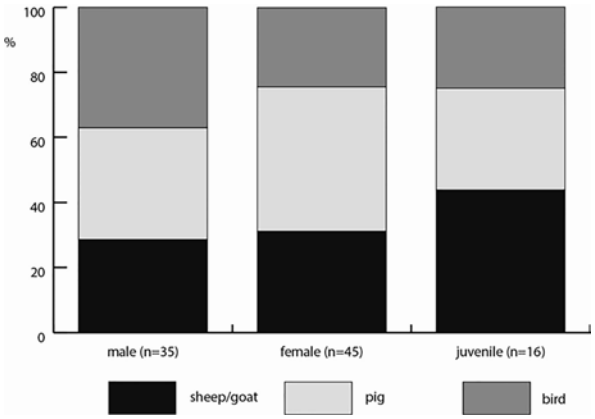
3 Body parts of pigs present in cremation graves in the two regions. SN = south-eastern Netherlands; RA = river area.



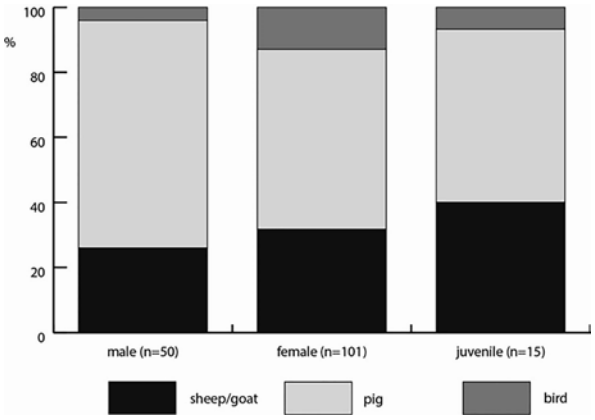
4 Body parts of sheep and goats present in cremation graves in the two regions. SN = south-eastern Netherlands. RA = river area.



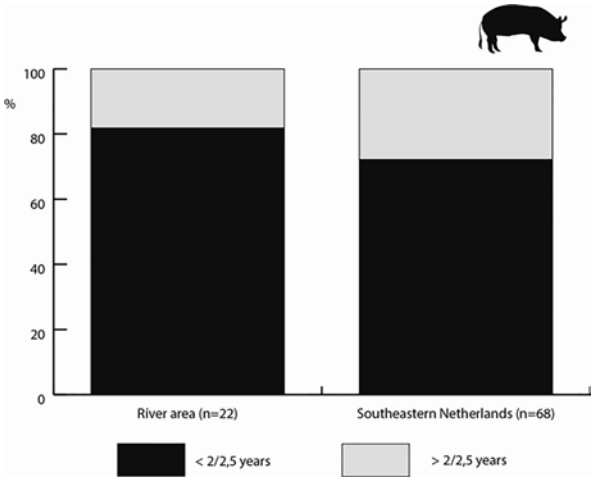
5 The presence of left and right body parts of pig, sheep, and goat in cremation graves in the two regions. SN = south-eastern Netherlands. RA = river area.



6 The proportions of animal species present in graves, separated by sex and age of the deceased, for the cemeteries in the river area.



7 The proportions of animal species present in graves, separated by sex and age of the deceased, for the cemeteries in the south-eastern Netherlands (all periods combined).



8 Slaughter ages for pigs in the cemeteries for the two regions (all periods combined for the south-eastern Netherlands).

	pig	sheep/goat	chicken	cattle	horse	goose	duck	dog	fish	n/total
river area n graves	22	32	4	29	8	1	1	3	2	73
river area % n graves	30	44	5	40	11	1	1	4	3	
river area n fragments	123	71	24	47	7	7	5	3	2	289
river area % n fragments	43	25	8	16	2	2	2	1	1	

Tab. 5 Number of graves per species with unburned animal remains and number of unburned fragments per species from graves. Total >100 % since more than one species can be found in one grave. Data from Tiel-Passewaaij, Zaltbommel-De Wildeman, Zoelen-Scharenburg, Huissen-Loovelden, Tiel-Medel-Afronding and Valburg-Molenzicht.

	1 species	2 species	3 species	4 species	5 species	total
river area unburned	40	15	4		1	60
river area unburned %	67	25	7		2	
river area burned + unburned	86	37	16	4	1	144
river area burned + unburned %	60	26	11	3	1	

Tab. 6 Number of animal species present among the unburned and combined burned/unburned animal remains in cremation graves.

Unburned animal bones have also been found in the ditches surrounding graves, but only in four cemeteries. The data set is dominated by Tiel-Passewaaij (34 of the 48 ditches). Most of the unburned bones in ditches are from cattle and horse *(tab. 7)*[21].

	pig	sheep/goat	chicken	cattle	horse	dog	deer	n/total
river area n ditches	3	2	1	26	24	2	1	48
river area % n ditches	6	4	2	54	50	4	2	
river area n fragments	3	2	1	33	26	2	1	68
river area % n fragments	4	3	1	49	38	3	1	

Tab. 7 Number of ditches per species with unburned animal remains and number of unburned fragments per species from ditches. Data from Tiel-Passewaaij, Zaltbommel-De Wildeman, Huissen-Loovelden and Tiel-Medel-Afronding.

Other features

In some cemeteries, animal remains are also found outside cremation graves and their surrounding ditches. Since these remains are unburned, they are only found in the river area, where preservation conditions for unburned bone are good. Furthermore, even in the river area, they are not found in every cemetery. Therefore, it is difficult to analyse these finds at a regional level and they are only mentioned here for completeness.

Animal burials

Animal burials are found in three of the cemeteries in the river area. If animals were ever buried in cemeteries in the south-eastern Netherlands, their bones have not been preserved, since only calcined bone tends to preserve well in this region.

Three of the burials are of horses. Adult male horses were found in Tiel-Passewaaij and Tiel-Medel (6–7.5 years old), both with withers heights above the averages for this region in the Early and Middle Roman period, which are 133 and 140 cm (149 and 147 cm, respectively)[22]. No

21 The only burned bones from ditches have been found in Tiel-Passewaaij: 2 fragments of pig and 4 fragments of chicken. The chicken fragments were found together, which suggests deliberate deposition rather than a stray find. Groot 2008, 173.

22 Groot 2016b, 122.

cause of death could be established and no pathological changes were observed. The horse found in Zaltbommel-De Wildeman was a mare of average withers height (141 cm). The mare reached an age of twelve years and displayed several different types of pathological changes, which would have affected her usefulness as a riding horse[23]. More horse burials in cemeteries are known from outside the research areas, although with a different context: urban rather than rural. In Valkenburg (province of South Holland), a stallion of 6–7 years was buried in the cemetery used by the inhabitants of the nearby *vicus*[24]. Several horses are known from Roman cemeteries in Cologne; one had its throat cut with an iron knife, which was buried with the animal[25].

Burials of cattle are present in the cemeteries of Tiel-Passewaaij and Tiel-Medel. In both cases, the skeletons were heavily fragmented and not much can be said about them, apart from the fact that the one in Tiel-Passewaaij was a calf of less than six months old[26].

'Graves' without human remains

Some pits look like cremation graves during excavation, but during the analysis are found not to contain human remains, only animal remains. In Tiel-Passewaaij, five such pits were found, all from the later phase of the cemetery (AD 200–270) and all in the periphery of the cemetery[27]. The pits are characterised by large amounts of (often burned) ceramics. Three of the five pits were surrounded by a ditch, like a grave. Other finds are glass, hobnails and a coin. The amount of animal remains was higher than in the true graves. One pit contained only pig remains. The other four pits contained bones from pig and chicken, and two also had other species present (goose and fish). There is a clear preference for the left hind leg of pig. The pits resemble cremation graves apart from two things: first, they seem to contain more finds and second, burned human remains are absent. Different interpretations have been suggested, such as a pit containing pyre remains, remains from a ceremonial meal, an offering to the ancestors as a kind of commemorative event and a cenotaph[28].

In Huissen-Loovelden, a so-called pottery deposit contained five ceramic vessels together with a burned tooth of a sheep or goat, but no human remains[29]. However, the pit is located next to a true grave within a surrounding ditch, so it could be associated with that grave. Another pit was interpreted by the excavators as a pottery deposit or disturbed grave[30]. The pit contains two ceramic vessels and the unburned left and right front and hind limbs of a pig; it is surrounded by a ditch. A pit in the cemetery of Zaltbommel-De Wildeman (CR21) contained no human remains and more than half of the burned animal bones were from pig[31]. The pit contains very little pottery and is therefore not comparable to the pits in Tiel-Passewaaij or Huissen.

Original ground surface

Tiel-Passewaaij is the only cemetery for which a relatively large number of animal bones were found that were not directly related to any of the features[32]. They are assumed to have been deposited on the original ground surface and quickly incorporated into the soil, perhaps as a result of flooding. Of the 202 fragments that were identified, 70 % are from horse and 21 % from cattle. The small amount of other fragments are from dog, sheep or goat, pig and goose. The horse bones show an overrepresentation of skull and hind limb fragments when compared to the adjacent settlement, while for cattle, the body part distribution is similar to the settlement refuse.

Discussion

For the Roman period, the average proportions of graves containing animal remains are very similar for the two regions: 23 and 24 %. The Late Iron Age cemeteries in the south-eastern Netherlands show a much higher proportion of 59 %, while the Late Iron Age/Roman cemeteries have a proportion of 38 %.

23 Esser et al. 2010, 228–229.
24 Verhagen 1987, 94–97.
25 Riedel 2000, 195.
26 Groot 2008, 178; van Haasteren / Groot 2019.
27 Groot 2008, 179.
28 Aarts / Heeren 2011, 49–50; Groot 2008, 179.
29 van der Feijst et al. 2017, 205–206.
30 van der Feijst et al. 2017, 229.
31 Esser et al. 2010, 224.
32 Groot 2008, 174–177.

This suggests a decrease in the practice of placing meat portions on the pyre. Van den Helm and Van Dijk conclude that for the Iron Age, an average of 19 % of graves contain animal remains[33]. However, since this figure is for the entire Iron Age, it may hide changes within the period. For the Late Bronze Age/Early Iron Age in the southern Netherlands and northern Belgium, 1 to 16 % of cremation graves contain animal bones, with an average of 8.5 %[34]. This suggests an increase in the practice of burning animal parts on the pyre from the Late Bronze Age to the Late Iron Age, followed by a decline in the Roman period. Both changes are highly significant[35].

Pig and sheep are the most common animals among the burned animal bones from cremation graves; chicken is common for the Roman period. Cattle is found occasionally, while goose and duck are only found in the river area and horse only once, in the south-eastern Netherlands. It is unclear whether the absence of ducks and geese in the south-eastern Netherlands represents a cultural difference, or whether it is related to the differences in environment, with ducks and geese more common in the water-rich river area. Hiddink has attributed the exact proportions of species that were burned on the pyre to local variations in funerary ritual[36]. While exact proportions vary, a common factor in cremation cemeteries is that pig and chicken are better represented among the cremated remains when compared to their proportions in animal bone assemblages from rural settlements. The data from cremation graves in the river area can be compared to those from settlements in the same region[37]. Due to the lack of animal bone data from settlements in the southern Netherlands, a comparison is not possible for that region. The comparison in the river area shows very clearly that pig and chicken were selected for funerary ritual. These two species account for 84 % of all (burned) fragments from graves and only for 10 % of the fragments from settlements. Chicken was not present in the Netherlands until the Roman period, but Iron Age graves do show a preference for pig, followed by sheep or goat[38]. In Late Bronze Age/Early Iron Age cemeteries, a preference for sheep or goat is rather found, followed by cattle, pig and dog in smaller numbers[39]. We can therefore conclude that the preference for pig in funerary rituals arose during the later Iron Age, while the preference for chicken was a Roman phenomenon. In Roman Wallonia, pig is the most common species in three cemeteries, while the second species seems to differ in different cemeteries (chicken or sheep or goat)[40].

For the river area, chicken is the third species in terms of number of graves per species, but the second in terms of number of fragments. Considering the size of chickens, it should not be surprising that they are placed on the pyre complete or nearly complete and thus more fragments are present. However, this does not explain the difference between pig and sheep or goat, which are similar in size. For both regions and all periods, the mean number of fragments per grave for pig is higher than that for sheep or goat *(tab. 8)*. This cannot be explained by the difference in the number of bones in the legs of the two species, since the difference is mainly in the foot, and feet are not frequent in graves. Perhaps the meat portions for sheep or goat were smaller and caution should be exercised in reconstructing whole front or hind limbs based on the presence of one or two fragments.

	n graves	n fragments	mean n fragments per grave
river area			
pig	66	225	3.4
sheep/goat	42	68	1.6
chicken	33	164	5
Roman SN			
pig	48	113	2.4
sheep/goat	30	54	1.8
chicken	9	12	1.3
LIA/Roman SN			
pig	42	89	2.1
sheep/goat	18	25	1.4
LIA SN			
pig	62	154	2.5
sheep/goat	28	45	1.6

Tab. 8 Summary of the number of graves and number of fragments per species and the mean number of fragments per grave.

For pig, there was a very strong selection of hind limbs, which is most pronounced in the Late Iron Age and Late Iron Age/Roman south-eastern Netherlands. In the Roman period, the forelimb is also common in both regions. For sheep or goat, a selection of hind limbs is present in the Late Iron Age south-eastern Netherlands and

33 van den Helm / van Dijk 2017.
34 de Mulder 2011; Groot 2018b; Hissel et al. 2007, 101; Smits 2017; Temmerman 2008, tab. 8; Tol et al. 2000, 25; Zeiler 2013.
35 Increase from Late Bronze Age up to the Late Iron Age: Cochrane-Armitage test for proportional trends in R; $p < 2 \times 10^{16}$. Decrease between the Late Iron Age and the Roman period: proportion test in R; $p < 2 \times 10^{16}$.
36 Hiddink 2003a.
37 Groot 2016b.
38 van den Helm / van Dijk 2017, 111.
39 de Mulder 2011; Groot 2018b; Temmerman 2008, 330; Zeiler 2013.
40 Pigière 2017, 179.

it is the most common body part for all periods, but front limbs are only slightly less common in the Late Iron Age/Roman and Roman south-eastern Netherlands. For both species, the strong preference for hind limbs in the Late Iron Age disappears in the Roman period, although this development is only statistically significant for pig[41]. Following on from the previous paragraph, we should consider that perhaps the body parts for sheep or goat were not complete limbs. Parts of the rump were also placed on the pyre, as the ribs and vertebrae – which are only identified to size – show. In the Roman period, the two regions show a statistically significant difference in body part selection for pig, especially in the head and hind leg[42].

Not only was there a selection for body part, there was also a selection for the left-hand side. This preference only applies to the hind limb and is found for both pig and sheep or goat. It is most pronounced in the Late Iron Age, and more so for pig than for sheep or goat, but the left hind limb outnumbers the right for all periods and both regions. A similar preference is found in an Iron Age cemetery in Yorkshire, where left sheep humeri outnumber right humeri by 24 to 2[43]. A selection on body side was also noticed by MacKinnon for Greek and Roman animal sacrifice, although in this case it is usually the right rather than the left[44]. The only archaeological example of a dominance of the left side is Nemea, Greece, where sacrifices were made to a chthonic hero[45]. There is no strong relationship between animal species and the sex of the deceased. Regarding age, mostly young pigs were selected for funerary ritual, while sheep could be young or older.

Unburned animal bones are only present in the river area, due to preservation conditions. We can only assume that they would have been present in the cemeteries in the south-eastern Netherlands as well. In graves, sheep, cattle and pig are the most common species. In the case of cattle, usually only a single bone is found, and this could be a symbolic gift, representing the living animal, rather than a food offering. The unburned remains from grave ditches show a completely different picture from burned animal bones in graves: here, cattle and horse dominate. The pottery in ditches is also different from that found in graves, with storage and cooking ware rather than tableware. The finds in grave ditches are believed to represent commemorative rituals[46]. The five animal burials found in cemeteries in the river area are horses and cattle. It is not surprising that horse and cattle feature in funerary ritual in the river area. Cattle traditionally played an important role in life in this region, dominating livestock, providing the most commonly consumed meat, providing essential power and manure for arable farming and sharing a roof with people. Rural settlements in the river area specialised in horse breeding to some degree in the 2nd and 3rd centuries AD.

There are three main ways in which animals play a role in funerary ritual[47]. First, living animals can be included in some way, such as in parades or pulling a wagon carrying the deceased. Second, animals can be buried with the deceased as companions. There is no evidence for either in the Late Iron Age and Roman Netherlands. The few animal burials in cemeteries are not directly related to individual graves. The third way in which animals take part in funerary ritual is as food. Food can be given to the dead to consume in the afterlife or it can be part of a feast for the survivors. Fasting – the absence of food – or sharing food with the community and with the deceased can also be an important part of funerary ritual. In the Late Iron Age and Roman Netherlands, the animal remains found in graves represent food, most likely food offerings to the deceased. This is especially clear when unburned animal bones are found on a plate in a grave[48].

Conclusions

The analysis of burned animal bones from cremation graves has led to an understanding of how animals were used in funerary ritual. It is important to keep in mind that we are dealing with an incomplete record. First, only burned bones have been preserved in the south-eastern Netherlands and second, only part of the cremated remains was buried in the grave. Nevertheless, some conclusions can be made for animals in funerary ritual

41 Monte Carlo-based Chi-square test in PAST 3.23; $p < 0.005$.
42 Monte Carlo-based Chi-square test in PAST 3.23; $p < 0.005$. The importance of the two categories (head and hind leg) was derived from their adjusted residuals.
43 Legge 1991, 140–142.
44 MacKinnon 2010.
45 MacKinnon 2010, 255.
46 Aarts/Heeren 2017, 139.
47 See Groot 2008, 161–165 for a more extensive discussion of (animals in) funerary ritual.
48 E. g. in Huissen-Loovelden: van der Feijst et al. 2017, 68.

in the Late Iron Age and Roman Netherlands. Food offerings of pig, sheep and chicken were buried on the pyre with the dead and more food offerings were placed in the grave pit next to the cremated remains. Animal remains found in the ditches surrounding graves may be a result of commemorative rituals. The animal remains from graves show a selection for species, body part and left side of the body. There appears to be little concern for selection of certain species for men, women or children. The preference for pig for inclusion on the pyre seems to originate in the Iron Age, while the inclusion of chicken is first found in the Roman period.

site	reference
Tiel-Passewaaij	Groot 2008; Groot 2011a
Zaltbommel-De Wildeman	Esser et al. 2010
Zoelen-Scharenburg	van Dijk 2011
Huissen-Loovelden	Groot 2017
Nijmegen-Hatert	Thijssen 1990
Cuijk-Heeswijkse Kampen	Lauwerier 1990
Tiel-Medel Afronding	van Haasteren / Groot 2019
Valburg-Molenzicht	Groot 2011b
Cuijk-Grotestraat	Lauwerier 1990
Oss-Ussen Zuidoost	Lauwerier / IJzereef 1998
Maasbree-Siberië	Groot 2011c
Weert-Kampershoek Noord 2/7	Groot / Hiddink 2014
Weert-Kampershoek	Hiddink 2003c
Nederweert Hoebenakker 2009	Groot / Hiddink 2012
Nederweert-Hoebenakker 2013–2014	Groot 2016a
Nederweert-Rosveld	Groot / Hiddink 2006
Someren-Waterdael	Groot / Hiddink 2011
Weert-Molenakkerdreef	Cavallo / Hiddink 2003
Nederweert-Hoebenakker 2017	Groot 2018a
Helden-Panningen-Stokx	Groot / Hiddink 2008

Tab. 9 References for the zooarchaeological studies for the individual cemeteries.

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Abstract

The most common method for the disposal of the dead in the 1st century AD in the Roman-occupied part of the Netherlands was cremation. Parts of animals, pottery and sometimes glass were placed on the pyre and burned with the deceased. After the cremation, both human and animal remains were collected and buried in a grave. Most graves were surrounded by a ditch and animal remains and other grave goods can also be found in these ditches.

This paper provides a review of animal remains from cremation graves in the Late Iron Age and Roman Netherlands in order to highlight the role of animals in funerary ritual. The study focuses on two regions: the river area in the central Netherlands and the south-eastern part of the Netherlands. Twenty cemeteries are included in this study, with a total of 342 graves with identified burned animal remains. The paper addresses questions regarding the selection of animal species and body parts for funerary ritual, the difference between burned and unburned animal remains found in graves, the presence of animal remains in other features in the cemeteries, chronological developments and regional differences.

The analysis of burned animal bones from cremation graves has led to an understanding of how animals were used in funerary ritual in the Late Iron Age and Roman Netherlands. Food offerings of pig, sheep and chicken were buried on the pyre with the dead and more food offerings were placed in the grave pit. Animal remains found in the ditches surrounding graves may be a result of commemorative rituals. The animal remains from graves show a selection for species, body part and the left side of the body. There appears to be little concern for the selection of certain species for men, women or children.

Zusammenfassung

Tiere im Bestattungsritual in den römischen Niederlanden

Im römisch besetzten Teil der Niederlande war im 1. Jahrhundert n. Chr. die vorherrschende Bestattungsart die Feuerbestattung. Teile von Tieren, Keramik- und manchmal Glasgefäße wurden auf den Scheiterhaufen gelegt und mit dem Verstorbenen verbrannt. Nach der Einäscherung wurden sowohl menschliche als auch tierische Überreste gesammelt und beigesetzt. Die meisten Gräber waren von einem Graben umgeben, worin ebenfalls Tierknochen und andere Funde nachgewiesen werden konnten. Diese Studie bietet einen Überblick über Tierknochen aus Brandgräbern der späten Eisenzeit in den römischen Niederlanden, um die Rolle der Tiere im Begräbnisritual hervorzuheben. Im Mittelpunkt stehen zwei Regionen: die Flussgebiete im Zentrum der Niederlande und die südöstlichen Niederlande. Insgesamt sind 342 Gräber mit identifizierten verbrannten Tierresten aus zwanzig Friedhöfen in diese Studie eingeflossen. Im Mittelpunkt stehen Fragen zur Auswahl der Tierarten und Körperteile für das Begräbnisritual, dem Unterschied zwischen verbrannten und nicht verbrannten Tierresten in Gräbern, dem Vorhandensein von Tierresten in anderen Befunden auf den Friedhöfen, nach zeitlichen Entwicklungen und regionalen Unterschieden.

Die Untersuchungen der verbrannten Tierknochen aus Brandgräbern der späten Eisenzeit in den römischen Niederlanden haben gezeigt, dass Teile von Schweinen, Schafen und Hühnern dem Toten auf den Scheiterhaufen mitgegeben und weitere nicht verbrannte Speiseopfer in die Grabgrube gelegt wurden. Tierreste, die in den

Gräben rund um die Gräber gefunden wurden, könnten als Spuren von Gedenkritualen interpretiert werden. Die Tierreste aus Gräbern zeigen eine Auswahl nach Tierart, Körperteil und linker Körperseite. Bei der Auswahl der Tierarten spielte das Geschlecht oder Alter der Verstorbenen offenbar keine Rolle.

Résumé

Les animaux dans le rituel funéraire des Pays-Bas romains

L'incinération représentait le traitement des morts le plus répandu dans la partie des Pays-Bas occupée par les Romains au 1er siècle ap. J.-C. Des parties animales, de la céramique et parfois du verre étaient placés sur le bûcher et brûlaient avec le défunt. Les restes du défunt et des animaux étaient recueillis après l'incinération pour être enterrés dans une tombe. La plupart des tombes étaient entourées d'un fossé qui pouvait parfois contenir des restes animaux et autres offrandes funéraires.

Cet article examine les restes animaux des tombes à incinération de l'âge du Fer tardif et dans les Pays-Bas romains pour mettre en évidence le rôle des animaux dans le rituel funéraire. L'étude vise deux régions : le bassin fluvial au centre des Pays-Bas et la partie sud-est des Pays-Bas. Cette étude intègre 20 nécropoles totalisant 342 tombes avec des restes animaux incinérés. L'article aborde les questions concernant la sélection des espèces animales et des parties du corps pour le rituel funéraire, la différence entre les restes animaux brûlés et non brûlés trouvés dans les tombes, la présence d'animaux dans d'autres structures des nécropoles, les évolutions chronologiques et les différences régionales.

L'analyse des ossements animaux brûlés provenant de tombes à incinération a permis de comprendre le rôle joué par les animaux dans le rituel funéraire de l'âge du Fer tardif et des Pays-Bas romains. Des offrandes de porcs, moutons et poules étaient ensevelies sur le bûché avec le défunt et d'autres offrandes de nourriture déposées dans la fosse funéraire. Les restes d'animaux trouvés dans les fossés entourant les tombes proviendraient de rituels commémoratifs. Les restes animaux des tombes révèlent une sélection de l'espèce, de la partie du corps et du côté gauche du corps.

Animals in ritual and domestic context: A comparative study between the faunal assemblages from residential areas and two sanctuaries at the *vicus* of Kempraten (Rapperswil-Jona, CH)

by *Simone Häberle / Sabine Deschler-Erb / Heide Hüster Plogmann / Barbara Stopp / Sarah Lo Russo / Pirmin Koch / Regula Ackermann*

Keywords

Archaeozoology, macro- and microfaunal remains, roman sanctuaries, rituals, Magna Mater, mithraeum, *vicus*, economy

Schlüsselwörter

Archäozoologie, Makro- und Mikrofaunenreste, römische Heiligtümer, Rituale, Magna Mater, Mithräum, *vicus*, Ökonomie

Mots-clés

archéozoologie, restes macro- et microfaunistiques, sanctuaires romains, rites, Magna Mater, mithraeum, *vicus*, économie

Introduction

In addition to its function as part of a sacred context, animal sacrifice generally also had an economic function. Most animals sacrificed in Roman-period sanctuaries were domestic animals[1], which were primarily kept and used for domestic purposes, as working animals (draught animals, animals used for riding and transport), as sources of food (milk, meat, fat) and raw materials (wool, hide, horn, bone)[2]. However, wild animals from hunting or fishing were also offered up[3]. Sacrificial animals were therefore closely connected to the economic system they were a part of, or from which they were removed by the sacrificial process.

The economic and probably also the sacred value of these offerings could vary significantly. The offering of older animals, for instance, which was rare but not unheard of[4], or of individuals, usually male, which were not

1 E. g. King 2005; Lepetz / Van Andringa 2008.
2 Peters 1998; Groot / Deschler-Erb 2016.
3 E. g. Schmid 1963; Rehazek / Nussbaumer 2009.
4 E. g. Oelschlägel 2006, 61–62; 75.

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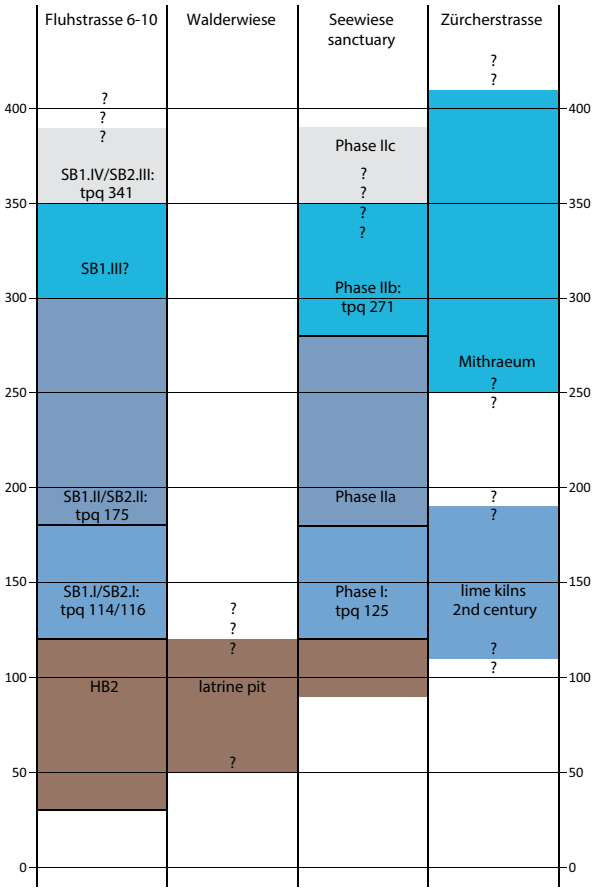
or no longer useful for breeding[5], would obviously not have meant as great a loss as the sacrifice of animals at the ideal age of slaughter or of very young individuals[6]. Ritual feasts, which occurred after the sacrifices and during which some of the meat was consumed, as well as the distribution or sale of the meat to outsiders[7], would have at least partially made up for the economic loss. The offering of pregnant sows in funerary contexts, on the other hand, which has been attested to by archaeozoological evidence, is an example of an economic cost that could not have been recouped[8]. Studies investigating to what extent the circumstances surrounding animal sacrifices in sanctuaries differed from those related to animal husbandry in the associated domestic settlements have been carried out in just a small number of cases and only in relation to Gallo-Roman sanctuaries, e. g. Oedenburg-Biesheim (F)[9] and *Aventicum*/Avenches (CH)[10]. This paper discusses possible reasons behind the selection of certain animal species for domestic and/or ritual purposes. Within the category of sacrificed animals we want to investigate whether the motivations behind the selection of the certain species were mainly 'cultic' or whether economic reasons also played a role. Furthermore, we want to find out how these two systems of selecting animals for these two purposes (cultic vs. economic) were distinct, or whether they were intertwined for the inhabitants of the *vicus* of Kempraten. These questions will be discussed by comparing the animal bones from domestic areas and the two sanctuaries of the Roman *vicus* of Kempraten. This helps us to elaborate commonalities as well as discrepancies between the animal spectra from domestic and sacred contexts. The analyses that have been carried out at Kempraten over the past 10 years have on various levels created ideal conditions for a comparative study, since they cover archaeological and archaeozoological results from domestic areas and from two different sanctuaries – the Gallo-Roman sanctuary Seewiese and the mithraeum – which partially overlap chronologically *(fig. 1)*.

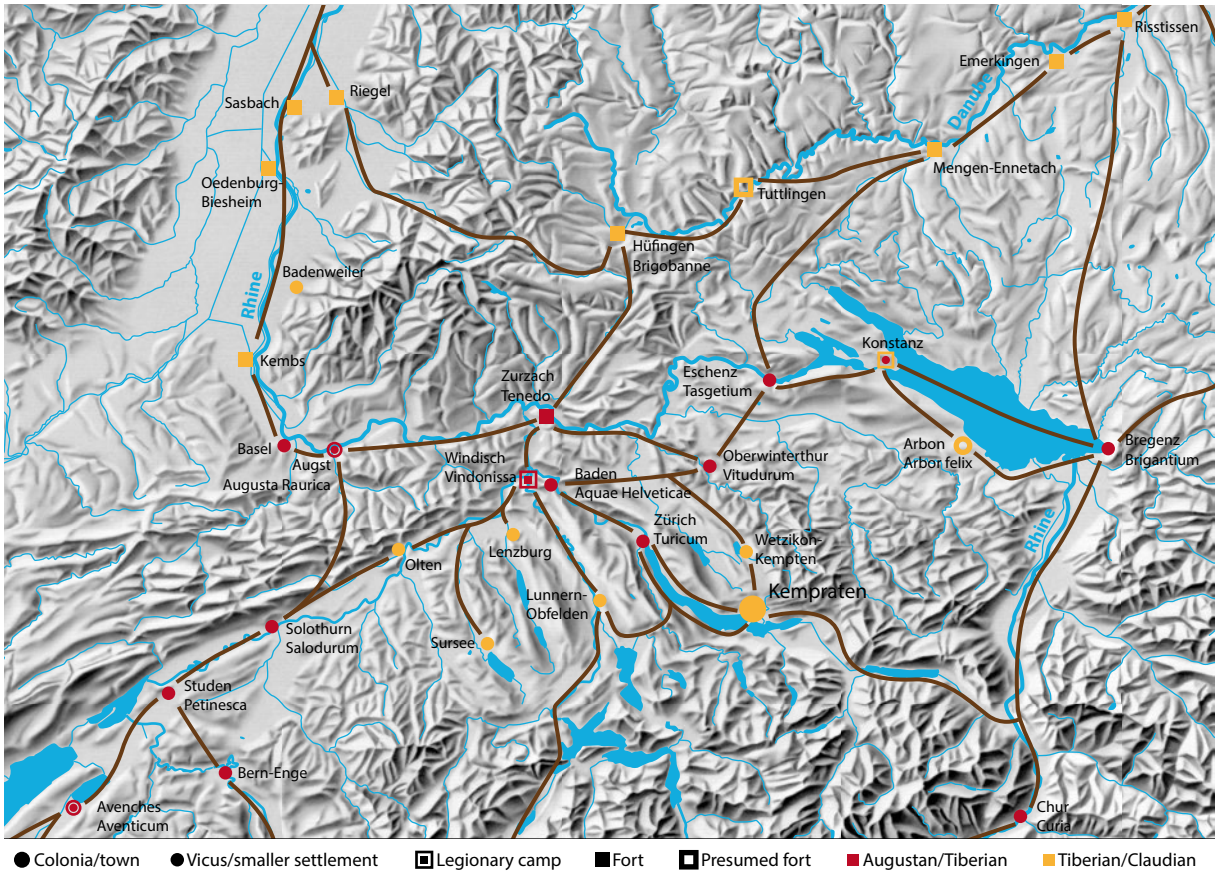


1 Kempraten: Synoptic representation of the dates obtained for the structures/phases at Fluhstrasse 6–10, Walderwiese, Seewiese and Zürcherstrasse. HB = timber construction phase; SB = stone construction phase. Graphic representation: KASG.

The *vicus* of Kempraten

The *vicus* of Kempraten was situated in a district of what is today the town of Rapperswil-Jona. The settlement was conveniently located, from the point of view of transportation, on the northern shore of Lake Zurich, at a junction where the waterway from *Curia*/Chur to *Vindonissa*/Windisch and Gaul intersected with various roads, most importantly the route from central Switzerland across the lake to *Vitudurum*/Oberwinterthur, *Tasgetium*/Eschenz and the Danubian limes *(fig. 2)*. After its establishment on a previously unoccupied site

5 E. g. Oelschlägel 2006, 65.
6 E. g. Deschler-Erb 2015, 56–57; 71–73; 115–116.
7 Van Andringa 2008.
8 Baerlocher et al. 2013, 42.
9 Ginella et al. 2011.
10 Lachiche / Deschler-Erb 2008.



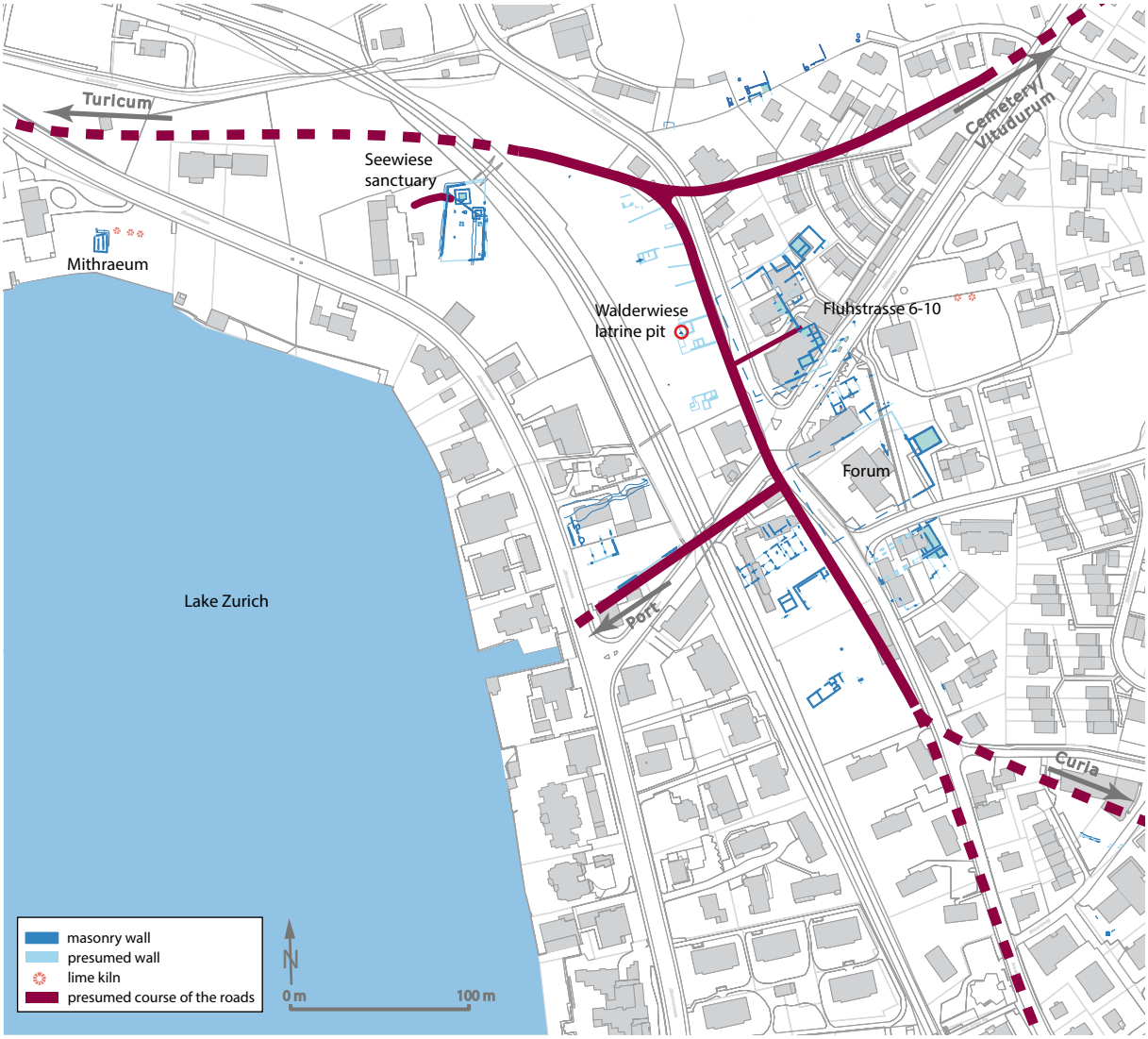
2 Settlement landscape on the Swiss Plateau, on the Upper Rhine and in southern Germany around the mid-1st century AD. Sc. 1 : 1 500 000. Map: KASG (after Ackermann 2013a, fig. 248; based on a swisstopo map).

around AD 35/40, the settlement soon flourished and at around AD 120 the wooden buildings were replaced by stone structures. Apart from some extensions and alterations, most remained intact until Late Antiquity[11]. At its maximum extent, the Roman settlement covered an area of approximately 11 ha *(fig. 3)*[12]. A public area (*forum*) with an *exedra* and at least one other monumental building was built when the stone buildings were erected, if not earlier[13]. Large residential buildings, one of which had an interior courtyard with a *porticus*, stood to the west and north of the *forum*. These buildings probably housed members of the local elite *(see 3.2)*. The streets in the northern part of the *vicus* and south of the *forum* were lined with strip houses. The backyards of both the strip houses and the large buildings in the centre of the *vicus* contained smaller, no less carefully constructed houses with one or two rooms, which probably also served as domestic residences. Outside of the *vicus*, two sanctuaries were established: A Gallo-Roman sanctuary was built on the road to *Turicum*/Zurich in the 2nd century AD *(see 3.3)*. In the late 3rd century AD, if not earlier, a mithraeum was then installed further out on the same road and set slightly back from it *(see 3.4)*.

11 For general information on the *vicus* see Ackermann 2013a, esp. 216–220 and Ackermann 2013b.

12 This does not include the area between Seewiese and the mithraeum which was probably not used for residential purposes.

13 See Matter 2003; Ackermann 2013a, 214–215.



3 Kempraten: Plan of all features from the stone construction phases (as of spring 2019). Sc. 1 : 4000. Plan: KASG.

The archaeozoological material, the studied areas and features

This paper will concentrate on presenting the archaeozoological analyses of features from the residential area, the Gallo-Roman sanctuary and the mithraeum. In all three contexts, the archaeozoological assemblage consists of hand retrieved animal remains and remains from soil samples.

General remarks on the archaeozoological methodology

The hand-retrieved animal bones mainly represent large species such as cattle, sheep/goat, pig but also some wild animal remains and bones of fowl. This category of bone finds is referred to as remains from 'large animal' in the following text. Microfaunal remains such as bones from fish, small mammals and (small) birds, amphibians and reptiles were retrieved from soil samples using the wet-sieving method. Tiny pieces of indeterminable compact and spongy bone from larger animals are also

abound in these samples. Furthermore, a few identifiable skeletal elements of larger animals and fowl are also present in the soil samples. Nevertheless, and for simplification, this animal bone category extracted from soil samples is referred to in the text as 'small animal' remains. Sample collection and processing followed the Institute of Integrative Prehistory and Archaeological Science (IPAS) guidelines[14]. Wet-sieving was undertaken using sieves with mesh sizes of 4 mm, 2 mm, 1 mm, and 0.35 mm. The small animal remains were retrieved from the 4 mm, 2 mm, 1 mm inorganic and organic fractions, with random samples being chosen for the 2 mm and 1 mm fractions due to the large amount of material. The 4 mm fraction from the mithraeum also contained many identifiable remains from large domestic mammals and poultry, which were more appropriate for analysis with the hand-retrieved bone material (e. g. young pig or chicken). Therefore, these bones were extracted from the 4 mm fraction and integrated into the study of the hand-retrieved animal bones. This should be considered when comparing the animal spectra of the different features.

All animal bones were identified using the osteological reference collection at the IPAS and recorded using OSSOBOOK, a database software specially developed for the storage and processing of data with archaeozoological content[15]. The data was analysed using Microsoft Excel.

For the purpose of the comparative study presented here, the finds from the two sanctuaries were combined to create one large analysis unit each, whilst the material from the domestic structures of the *vicus* was divided into five units (three hand-collected and two sieved units). The different units partially corresponded from a chronological point of view *(fig. 1)*. Although this meant that a longer period of time was subsumed into one unit in the case of the Seewiese sanctuary, it did help us to trace the differences between the three different areas examined in the study.

The residential area and the associated archaeozoological assemblages

In an area covering approximately 1100 m² at Fluhstrasse 6–10, parts of residential buildings were uncovered in 2005/06, analysed and the results published in 2013. A sequence of up to four phases of timber construction with a further two in stone was identified[16].

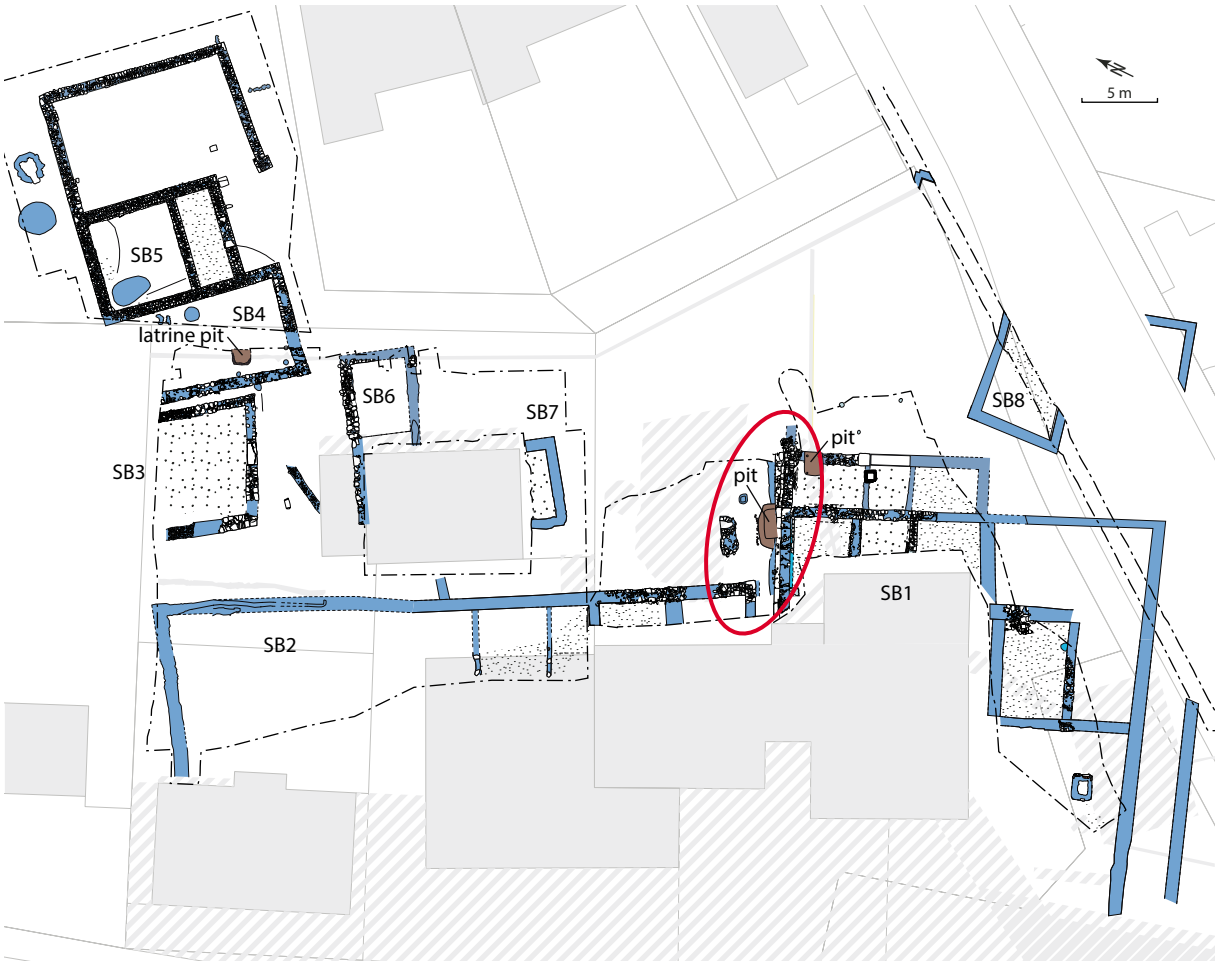
It was not possible to trace any ground-plans of houses or plot boundaries for the timber construction phases (AD 35/40–120). The areas examined were most likely to have been backyards that contained some buildings whilst also serving various other purposes. Most of the bone material analysed was retrieved from a sequence of layers. Two pits, which were primarily identified as storage pits, were also examined *(fig. 4)*[17].

An extensive fire destroyed the timber constructions around AD 120, which were then rebuilt in stone. Two large buildings, SB1 and SB2, which probably extended as far as the Roman road, were constructed at that point *(fig. 4)*. Whilst SB2 was not preserved well enough for it to be characterised in detail, SB1 can be identified as a large, carefully constructed building complex with a postulated interior courtyard, in other words, a *domus*[18].

Analysis of the large animal remains was limited to a small number of features associated with six different construction phases *(fig. 4)*. This allowed us to make initial archaeozoological observations with due regard for the chronological sequence[19]. For the purposes of this study, the 2596 large animal bones identifiable to species level analysed to date were subsumed into three consecutive units. Large animal bones from the timber construction phases (AD 35/40–120) mainly came from a sequence of layers and some of the secondary fills of the two storage pits mentioned above and were not associated with their primary functions. The large animal bones analysed from the stone construction phases SB1.I/SB2.I (AD 120–180) and phase SB1.II/SB2.II (AD 180–4th century AD) were mainly retrieved from two overlying layers at the back of SB2, which were identified as occupation surfaces from the earlier and later stone construction phases respectively *(fig. 1)*[20]. A smaller number of bones were linked to the construction of SB1 or to a kiln dating from the earlier stone construction phase.

Analysis of the small animal remains was limited to the fill of a latrine pit from the last quarter of the 1st century AD found in one of the backyards *(fig. 4)*[21]. It was approximately 1.7 m deep and reached down as far as the waterlogged soil. It had a rectangular shape and its interior was lined with stakes, which may originally have been sealed with loam. Following its primary use as a well or cistern, its secondary function was to serve as a

14 Cf. e. g. Hüster Plogmann 2003.
15 Kaltenthaler et al. 2019.
16 Ackermann 2013a, 23–64.
17 Ackermann 2013a, 28; 30.
18 Ackermann 2013a, 212–213. An interior courtyard surrounded by columns is attested to in the building beneath the Chapel and Cemetery of St. Ursula; ibid.
19 Deschler-Erb 2013.
20 Ackermann 2013a, 52–54; esp. 56.
21 Häberle 2013.



4 Kempraten, Fluhstrasse 6–10: Overall plan of stone constructions SB1–SB8 and the latrine pit from the timber construction phase, which yielded the small animal remains. Red ellipse: Sequence of layers and two pits which yielded the large animal remains examined. Sc. 1 : 500. Plan: KASG.

latrine[22]. The 1076 small animal remains were all retrieved from the latrine sediments.

In addition to the bones from the latrine pit of Fluhstrasse 6–10, a preliminary analysis was also carried out on 521 small animal remains from a latrine pit in the Walderwiese area *(fig. 3)*[23]. Due to a lack of archaeological finds, it was not possible to date the latrine pit on its own merits. By analogy with other excavations in Kempraten, it probably dated from the timber construction phase. However, because the feature was recorded during the excavation of a trial trench carried out in 2002 and no large-scale excavations have been undertaken at the site since then, we can only surmise that it was located adjacent to further residential buildings[24].

The Gallo-Roman sanctuary in the Seewiese area and the associated archaeozoological assemblages

The Gallo-Roman sanctuary on the western periphery of the Roman settlement was excavated between 2009 and 2013 *(fig. 3)*[25].

22 Ackermann 2013a, 42–43. On its dating see Ackermann 2013a, 157–158.

23 The records are kept in the KASG archives, Site no. 53.051, trial trench 3, section 5, layer 18. For more information on the preliminary archaeobiological analysis see Jacomet / Hüster Plogmann 2003.

24 JbSGUF 86, 2003, 237. – See also the results obtained from geophysical prospections carried out by Wolfgang Neubauer (LBI, Vienna) kept in the KASG archives.

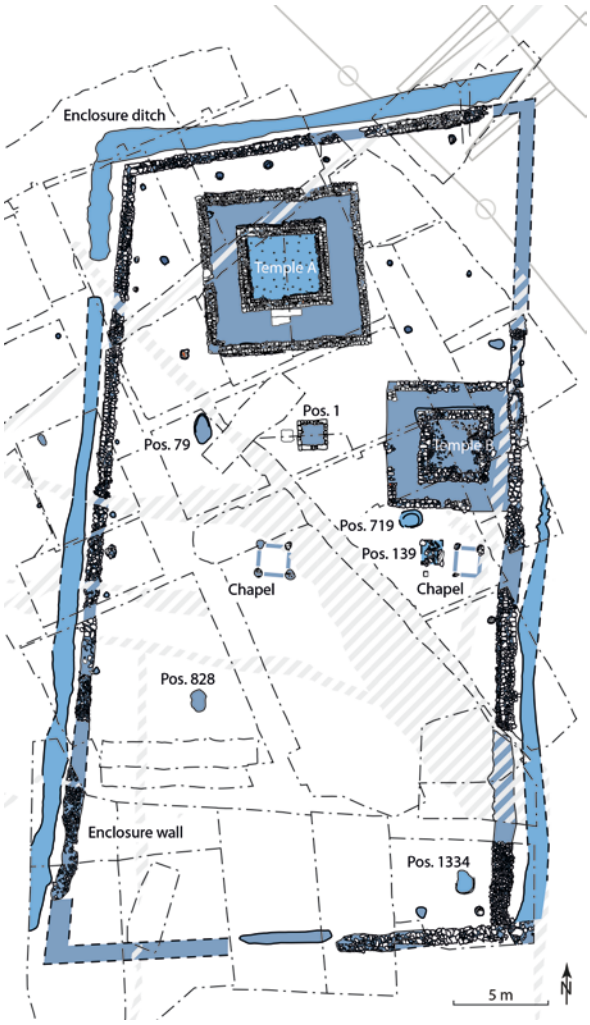
25 The sanctuary is currently the subject of an interdisciplinary research project. The results will be published in a monograph (Koch et al. in prep.). Preliminary results have already been published in Koch et al. 2018.

Four curse tablets invoking the assistance of Magna Mater show that the Goddess was one of the deities venerated in the sanctuary; based on where the tablets were found, we can assume that the larger Temple A to the north was dedicated to her[26]. Along with the Mater Magna Sanctuary at Mainz/Germany, this is the only other archaeologically examined sanctuary for the Goddess in the north-western provinces.

The sacred district occupied an area of approximately 900 m². Two Gallo-Roman temples with ambulatories stood in its northern half *(fig. 5)*. These and two simple post constructions, which were interpreted as chapels, were the only buildings that came to light within the sacred district. Although the southern half of the excavated area was in a poorer state of preservation and thus precluded us from drawing any definitive conclusions, the section did appear to be free of any buildings. The features in the sacred district were divided into two construction phases (I and II), though some could not be assigned to either one or the other with any degree of certainty due to intermixing with later material.

Phase I (second quarter of the 2nd century to AD 160/180): Before building work began on the sanctuary, two drainage trenches, Pos. 449 and Pos. 1188, were dug (Phase Ia). During Phase Ib, the sanctuary was enclosed by a ditch. The *cella* of Temple A was constructed in this phase, though hardly any remains of its associated ambulatory have survived. Thanks to a coin recovered from the south wall of the *cella*, its construction can be dated to the second quarter of the 2nd century AD. Due to later alterations, Temple B has only survived in fragments. Two pits, Pos. 719 and Pos. 1334, which were dug down as far as the groundwater level, also belonged to Phase I of the sanctuary. They probably served as open wells, as confirmed by evidence suggesting reinforced walls. A stone-lined hearth Pos. 139 was located south of Temple B probably from as early as Phase Ib. Other concentrations of charcoal may represent simple hearths or may have been redeposited material.

Phase II (AD 160/180 to the end of the 4th century): Towards the end of the 2nd century AD, the enclosing ditch was replaced by a wall (Phase IIa). This was probably accompanied by alteration work carried out on Temple A and the rebuilding of Temple B onto the enclosing wall. A place for burnt sacrifices Pos. 1 was installed at ground level in front of the two temples and bordered by stones. It was in this phase at the latest that the hearth Pos. 139, probably built in Phase Ib, and the pit Pos. 828 began to be used as places for burnt offerings. Other concentrations of charcoal probably attest to further sacrificial sites throughout the area. The well Pos. 79 is likely to have replaced Pos. 719 at that time.

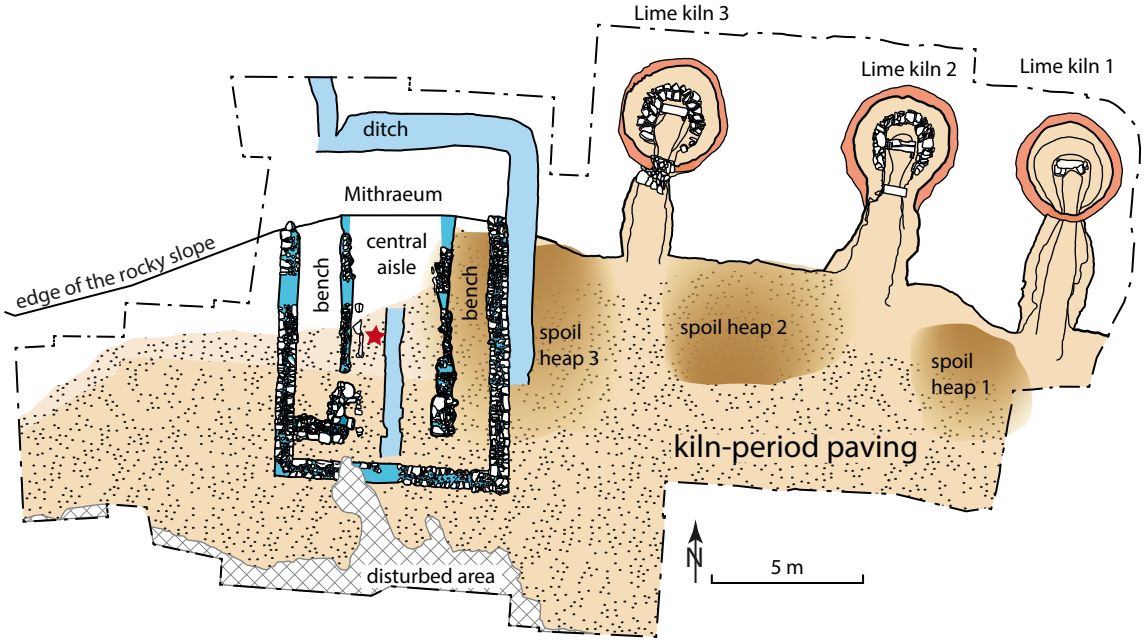


5 Kempraten, Seewiese: Overall plan of Phase II with the mentioned features from Phase I. Sc. 1 : 400. Plan: KASG.

Towards the end of the 3rd century AD, the sanctuary was badly damaged by a conflagration, though Temple A was subsequently renovated (Phase IIb). Coins attest to the presence of people at the site until the second half of the 4th century AD. However, because of the lack of other finds (ceramic or glass vessels), the question of how long the sanctuary was actually in use must remain open. After its definite abandonment the sanctuary fell into ruin (Phase IIc).

Whilst more than 8000 large animal bone fragments were recovered during the excavations, only 4625 could be linked to cult activities. Most of the bones date from

26 For preliminary results on the curse tablets see Frei-Stolba et al. 2015 and Geisseler / Koch 2018.



6 Kempraten, Zürcherstrasse 131: Overall plan of the excavation with the three earlier lime kilns and the later mithraeum. ★ = Location of the archaeobiologically examined quarter of a square metre. Sc. 1 : 250. Plan: KASG.

the period between the second quarter of the 2nd century AD and the 4th century AD, but the majority were retrieved from the most recent and uppermost layers of the site (Phase IIc, Pos. 4 and 89), and from the areas around the central square and south of Temple B. These layers probably resulted from the sanctuary's final phase of intensive use. For the purposes of this comparative study, all bones have been subsumed into one large assemblage.

Small animal remains (n = 24670) stem from a total of 39 soil samples from various features such as the altar for burnt offerings Pos. 1 (Phase II), various hearths and pits. In summary 16 samples have been analysed from Phase Ia and b, another 23 samples come from Phase IIa, b and c. Ideal preservation conditions for organic remains existed in the pits by virtue of the fact that they reached down into the waterlogged soil and this proved beneficial for the analysis of the small animal remains. Altogether, 13 samples were taken from such waterlogged features. Similarly to the large animal remains, the small animal remains from all features were considered as one large assemblage.

The mithraeum at Zürcherstrasse and the associated archaeozoological assemblages

Discovered in 2015, the mithraeum had been fully excavated by February 2016 *(fig. 6)*. It is only the third building dedicated to this mystery cult to have come to light in present-day Switzerland[27].

The site is characterised by two natural rock terraces connected by a slope. This topographical situation was first exploited to accommodate a Roman lime burning operation *(fig. 6)*. After the lime kilns had been decommissioned, the mithraeum was built just to the west of the facility and only a few metres from the shoreline of Lake Zurich. The mithraeum was built no later than the advanced 3rd century AD and continued to be used at least until the beginning of the 5th century AD[28]. Future analyses will hopefully give a precise construction date. The cult building had three phases, was aligned north-south and measured approximately 8 × 10 m. Its floorplan was typical of such edifices, with a lowered central aisle and two reclining benches on either side, which were modified during each of the construction phases[29]. The south,

27 The other two mithraea were found at Martigny (Wiblé 2008, 146–166, with earlier references) and Orbe (Monnier 2016, with earlier references).

28 Ackermann et al. 2020.

29 On the provisional sequencing of the phases see Lo Russo et al. 2018, 205–207. On the architecture of mithraea in general see, e. g., Hensen 2017 (with further references).

east and west walls (or the surviving parts thereof) were retained during all three phases. The wall at the northern end from Phases 1 and 2 did not survive because the ritual space was extended a little further north during each period of renovation. The building was surrounded by a drainage ditch in the north and east.

Only a few deposits and finds had survived from Phase 1 because most had probably been removed, possibly after a conflagration, during the alteration work for Phase 2. The reclining benches on either side and the central aisle were clearly evident. In Phase 1 the building appears to have consisted of just the sacred space with no evidence to suggest separate ante-chambers. In Phase 2, the reclining benches were slightly widened at the expense of the central aisle. The archaeological context and the distribution of finds, particularly of the coins, suggest that the building was now divided in two, with a sacred space in the northern section and three rather small ante-chambers in the southern part of the building. Two sub-phases, 2A and 2B, could be distinguished for the central aisle in Phase 2. At the end of Phase 2, numerous cult objects (altars, fragments of a cult image amongst other things) had been deposited in a pit in the northern half of the central aisle, which by that stage had been completely filled up with accumulated layers of soil rich in finds and charcoal.

The features from Phase 3 survived only in a fragmented state. The final refurbishment involved building the northern wall in stone and can be numismatically dated after AD 388. Interior spot foundations showed that the three-aisled ground-plan had been retained. Moreover, the remains of a gravel floor were uncovered in the northern section of the central aisle. The fact that the construction continued to serve as a mithraeum in this late phase was attested to, amongst other things, by an altar bearing a dedication to INVICTO MITRE and a fragmented cult image with a larger than life-sized depiction of the head of the God Mithras.

As part of a preparatory project in the year 2017, a test study was carried out on a small number of finds and soil samples taken from a quarter of one square metre from the central aisle of the mithraeum (*fig. 6*, red star). Within this test study hand-retrieved animal bones (n = 3378) and animal remains from 12 soil samples (n = 5711) from Phases 1, 2A and 2B have been analysed. The results have been integrated into the study for this paper[30].

Results

From all the three contexts combined a total of 45 573 archaeozoological remains were collected, from which 15 886 specimens have been identified to animal group and/or species. 6515 of these remains were hand-collected during excavation and 9371 were retrieved from sieved soil samples. Details of the identified species can be seen in *tables 1* and *2*.

Large animal remains

Traces of burning:

The burning of animal bones can have various different causes. It can occur in the kitchen during the preparation of a meal. Food waste strewn about can come into contact with fire during a conflagration. Finally, burnt bones can suggest that whole animals or animal parts were deliberately placed on a fire as a sacrificial offering[31].

The proportions of burnt bones in the three zones presented here differed quite considerably. In the domestic features, around 5 % of the bones were burnt[32]. Less than 5 % of the Seewiese sanctuary material showed traces of burning[33], whilst the proportion of burnt bones from the mithraeum was as high as 23 %[34]. The low values yielded by the finds from the Seewiese sanctuary suggest that the large animal bones retrieved from there were kitchen and food waste, as was the case in the domestic areas of the *vicus*. The relatively high values for the finds from the mithraeum may be interpreted as evidence of burnt offerings or as a result of one if not several conflagrations. It is hoped that this question will be resolved by the results of the ongoing investigations[35].

30 Ackermann et al. 2020. The interdisciplinary analysis project began in spring 2019.
31 Deschler-Erb 2015, 103–105.
32 Deschler-Erb 2013, 199.
33 Koch et al. in prep.
34 Ackermann et al. 2020, 54–55.
35 Initial micromorphological analyses rather argue against the outbreak of fire during Phases 2A and 2B (Lo Russo 2018, 169). However, further in-depth discussions are required as part of the post-excavation analyses.

Species	Fluhstrasse 6-10			Seewiese	Zürcherstrasse
	HB	SB1.I/SB2.I	SB1.II/SB2.II	sanctuary	mithraeum
Bos taurus	316	384	277	1036	4
Ovis/Capra	192	131	88	307	39
Sus domesticus	582	397	239	912	281
Equidae	3	4	2	89	
Canis familiaris		1	1	35	
Gallus gallus domesticus/Aves	17	13	15	57	1148
other	6				
Domestic animals total	**1116**	**930**	**622**	**2436**	**1472**
Cervus elaphus	1	2	1	2	
Sus scrofa	2				
Ursus arctos	1			2	
Lepus europaeus	14	1		5	
Castor fiber	1				
Capra ibex				2	
other	1	3	1		
Wild animals total	**20**	**6**	**2**	**11**	**0**
Domestic and wild animals total	**1036**	**936**	**624**	**2447**	**1472**
indet.	1023	1137	834	2178	1906
Total	**2059**	**2073**	**1458**	**4625**	**3378**

Tab. 1 Kempraten: List of large animal bone remains from the residential area at Fluhstrasse 6–10, the Seewiese sanctuary and the mithraeum.

Large animal species frequency:

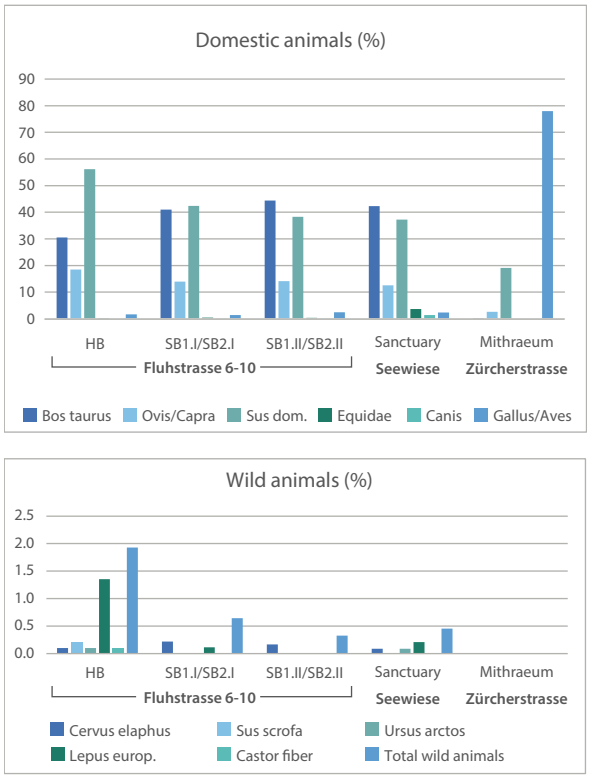
The finds from the domestic areas of the *vicus* exhibited distinct differences between the timber construction phase (HB) and the two stone construction phases (SB) *(fig. 7)*: during the timber construction phase (HB), pig bones (*Sus domesticus*) accounted for more than half of all the bones examined, whilst cattle bones (*Bos taurus*) only amounted to 31 %. During the stone construction phases (SB), pig bones decreased in number, first to 43 % and then to 38 %, whilst cattle bones rose to 41 % and later 44 %. The proportion of cattle at an ideal slaughter age was relatively high, though the material from the stone construction phases also included juvenile and infantile animals[36]. Sheep/goat (*Ovis*/*Capra*) proportions lay below 20 % in all phases and the values tended to decrease further over time. Equines (Equidae), dogs (*Canis familiaris*) and fowl (*Gallus gallus domesticus*), on the other hand, hardly featured at all. The same can be said for wild animals, where the highest values (1.9 %) and the greatest diversity were identified during the timber construction phase.

At 42 %, cattle were the most common of all large animal bones from the Seewiese sanctuary. Young and very young animals were represented in high numbers. The next most abundant species were pig at 37 % and sheep/goat at 13 %. Chicken (2.3 %) and equine (3.6 %) bones played a minor role. Most equine bones were rather highly fragmented and some bore traces of butchery, suggesting that equines were slaughtered at the sanctuary and their meat probably consumed there. So far no comparable evidence was observed in the domestic areas and the mithraeum of Kempraten.

The mithraeum, on the other hand, yielded a completely different range of animal species. Chicken/bird bones accounted for about three quarters of the material (78 %). The number of pig bones amounted to 19 %, the other domestic animals were present in very low numbers and wild animals were completely absent.

In summary, we can state that, with the exception of the consumption of horse meat, the ratios of large animal bones from the Seewiese sanctuary were largely consistent with those from the domestic areas of the *vi-*

36 Deschler-Erb 2013, 203.



7 Kempraten: Animal species frequency among large animal bone remains from the residential area at Fluhstrasse 6–10 (n = 2596), the Seewiese sanctuary (n = 2447) and the mithraeum (n = 1472).

cus. The range of animal species identified at the mithraeum, however, was completely different.

Small animal remains

Taphonomy:

The bulk of the material from both latrine pits consisted of highly fragmented pieces of compact and spongy bone from relatively large mammals and were thus usually indeterminable *(tab. 2)*[37]. Evidence of digestion was identified on several of these, as on some of the small animal remains such as fish vertebrae. The remains of invertebrates, chiefly fragments of maggots (*Diptera larva)* in various stages of their lifecycle, probably indicate the presence of faeces, too. Moreover, fish scales, skull bones and fin-rays pointed to the presence of kitchen waste, since these skeletal elements mainly result from fish preparation.

Hardly any burnt bones were found in the latrine pit at Fluhstrasse 6–10 (3.5 %), whilst almost 25 % of the bone fragments – mainly highly fragmented and indeterminable large mammal bones – from the Walderwiese pit were charred or completely calcined. Together with the charred plant remains, and in particular with the charred amorphous objects (AOV), which regularly occurred both in the latrines and around the hearths[38], they allow us to conclude that this particular pit was also used to dispose of ash from the hearth.

The small animal remains from both sanctuaries were also highly fragmented. Many could not be identified in any detail *(tab. 2)*. The Seewiese sanctuary yielded both severely burnt remains and bones that bore no burn marks whatsoever and/or had been well preserved in the waterlogged soil. Overall, however, charred bones predominated: the average value was 50 %, though one pit, Pos. 1334 (with waterlogged preservation), which was situated quite far from the temples, only yielded 4 % burnt bones. The places for burnt offerings within the sacred district even yielded 82 %–99 % of burnt material, whereas only 7 % of the remains from the mithraeum bore traces of burning. In contrast to the two latrine pits in the residential area, the sanctuaries did not yield any bones with evidence of digestion.

Small animal species frequency:

Small mammals were most numerous in the latrine at Walderwiese (22 %, *fig. 8*). Whilst none of the bone fragments could be identified at species level due to the absence of mandibles, skull parts and loose teeth, the size of the postcranial bones pointed to house, wood or field mice (Muridae and Microtidae). These were probably the carcasses of perceived vermin, which had been disposed of in the latrines. They would have frequented human settlements mainly during the autumn and winter months, feeding on supplies[39]. The same can be presumed for the small mammal remains from the latrine pit at Fluhstrasse 6–10.

37 The absence of larger or even complete skeletal elements was also observed in latrine assemblages from *Augusta Raurica* and *Vindonissa* (cf. Breuer 1992; Hüster Plogmann 2003; Deschler-Erb / Stopp 2013, Ammann / Schwarz 2017). We can assume that people generally refrained from depositing bulky settlement waste in the pits whilst they were still being used as latrines, so as to avoid filling them up too quickly (Ammann / Schwarz 2017, 226).

38 Cf. Jacomet et al. 2006.

39 Cf. Hüster Plogmann et al. 2007.

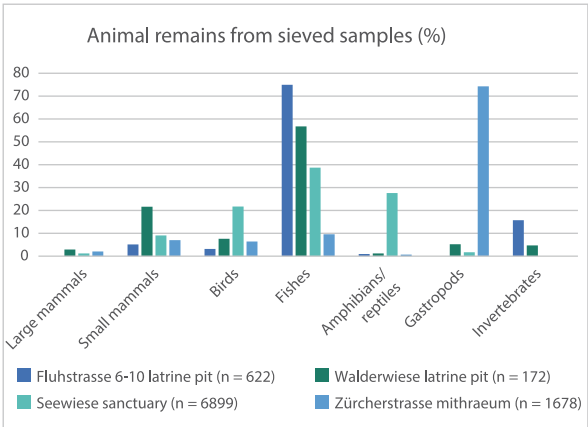
Species	Fluhstrasse 6-10 latrine pit	Walderwiese latrine pit	Seewiese sanctuary	Zürcherstrasse mithraeum
Mammals indet.	**454**	**349**	**17771**	**4038**
Bos taurus		1	8	
Sus domesticus		4	34	30
Ovis aries/Capra hircus		1	35	
Canis familiaris			2	
Equidae			1	
Vulpes vulpes/Canis familiaris			3	
Capreolus capreolus			2	
Large mammals total		**6**	**85**	**30**
Small mammal indet.	25	37		61
Rodentia	5		516	24
Sciurus vulgaris			1	
Muridae			23	15
Mus musculus			1	
Apodemus sp.	2			1
Arvicola terrestris			10	3
Arvicolidae			45	9
Myodes glareolus				1
Microtus agrestis			3	
Microtus arvalis			5	
Microtus sp.			5	
Micromys minutus			1	
Insectivora indet.			1	
Neomys fodiens			1	
Talpa europaea			2	2
Soricidae			1	2
Mustela erminea/nivalis			3	
Mustela nivalis			5	
Small mammals total	**32**	**37**	**623**	**118**
Aves indet.	2	1	918	90
Galliformes/Anseriformes indet.	1			16
Phasanidae	4			
Gallus gallus domesticus/Galliformes		12	541	
Phasianus colchicus			16	
Perdix perdix			3	
Anseriformes			1	
Anatidae			1	
Anser sp.			3	
Buteo buteo			*1*	
Passeriformes	13		13	2
Passer domesticus			1	
Fringilla sp.			1	
Erithacus rubecula			1	
Aves total	**20**	**13**	**1500**	**108**

Tab. 2 (first part)

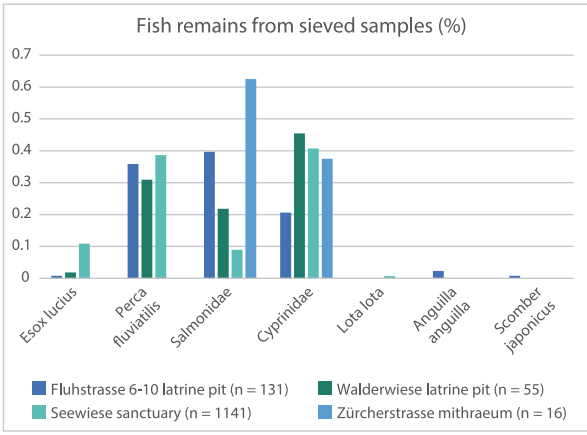
Fishbones accounted for 75 % of the material in the latrine pit at Fluhstrasse 6–10 and for 57 % of the finds from the latrine pit at Walderwiese *(fig. 8)*. Despite the difference in proportions, there was a similar range of fish species in both pits *(fig. 9)*: the species identified were almost exclusively indigenous freshwater fish, including various salmonids – brown trout (*Salmo trutta fario)*, whitefish (*Coregonus* sp.) and grayling (*Thymallus thymallus)* – as well as perch (*Perca fluviatilis*) and cyprinids. The salmonids were the most numerous in the latrine pit at Fluhstrasse 6–10, whereas the cyprinids predominated in the Walderwiese latrine. Most of the fish were no longer than 20 cm when caught. Eel (*Anguilla anguilla*) and pike (*Esox lucius*) were identified only in very small numbers *(tab. 2)*. A vertebra of a Spanish mackerel (*Scomber japonicus*) from the latrine pit at Fluhstrasse 6–10 was the only evidence of imported sea fish. Birds, amphibians and reptiles all accounted for less than 10 % of the range of animal groups and were thus less abundant than in the Seewiese sanctuary. Be-

	Fluhstrasse 6-10 latrine pit	Walderwiese latrine pit	Seewiese sanctuary	Zürcherstrasse mithraeum
Pisces indet.	335	42	1531	145
Esox lucius	1	1	124	
Perca fluviatilis	47	17	441	
Anguilla anguilla	3		1	
Lota lota			8	
Rutilus rutilus	1		31	
Scardinius erythrophthalmus			6	
Leuciscus cephaloides			8	
Barbus barbus			6	
Cyprinidae	26	25	414	6
Salmonidae	39	5	55	8
Salmo trutta fario	1	7	37	
Coregonus sp.	5		8	2
Thymallus thymallus	7		2	
Scomber japonicus	1			
Pisces total	**466**	**97**	**2672**	**161**
Amphibia indet.	2	1	352	1
Rana sp./*Bufo* sp.			17	2
Rana sp.	4		28	
Amphibia total	**6**	**1**	**397**	**3**
Reptilia indet.			76	2
Lacertidae			36	1
Anguis fragilis		1	1392	5
Serpentes			2	
Reptilia total		**1**	**1506**	**8**
Gastropoda		9	116	1250
Invertebrata	98	8		
Total	**1076**	**521**	**24670**	**5716**

Tab. 2 Kempraten: List of small animal bone remains from the residential area at Fluhstrasse 6–10 and Walderwiese, the Seewiese sanctuary and the mithraeum.



8 Kempraten: Animal groups frequency in the residential area at Fluhstrasse 6–10 and Walderwiese, the Seewiese sanctuary and the mithraeum.



9 Kempraten: Fish species frequency in the residential area at Fluhstrasse 6–10 and Walderwiese, the Seewiese sanctuary and the mithraeum.

cause of the predominance of long bone and vertebrae fragments, most bird remains were undetermined. The assemblages were comprised mainly of indeterminate fowl (Galliformes) in the latrine at Walderwiese, and of indeterminate songbirds (Passeriformes) in the latrine at Fluhstrasse 6–10.

The highly fragmented large mammal remains from both latrines in the residential area prevented us from carrying out any further analyses.

The sanctuaries differed from the residential areas in terms of the composition of identifiable animal species *(tab. 2, fig. 8)*. This was particularly clear with regard to

the large number of bones found in the Seewiese sanctuary. But even more remarkable was the relatively large variety of small animal species. Additionally, the few identifiable large animal bones represent a diverse species composition. Besides a relatively high number of domestic pigs and sheep/goats, the range also included small dogs or foxes, equines (Equidae), roe deer (*Capreolus capreolus*), mustelids (Mustelidae), weasels (*Mustela nivalis*), red squirrels (*Sciurus vulgaris*) and various species of mice such as house mice (*Mus musculus*), wood/yellow-necked mice (*Apodemus sylvaticus/flavicollis*) and harvest mice (*Micromys minutus*); voles were represented by European water voles (*Arvicola terrestris*), field voles (*Microtus agrestis*), common voles (*Microtus arvalis*) and bank voles (*Myodes glareolus*), and the insectivores included water shrews (*Neomys fodiens*) and moles (*Talpa europaea*). Besides commensal small mammals such as those found in the latrine pits in the domestic areas, the sanctuaries thus yielded a range of species less closely associated with humans.

Whilst fish were less abundant in the two sanctuaries than in the domestic areas of the *vicus*, they nevertheless accounted for 39 % in the Seewiese sanctuary. In the mithraeum, on the other hand, they only amounted to 10 % *(fig. 8)*. Fish remains from some features in the sacred district at Seewiese were well preserved thanks to the waterlogged conditions, whilst only small numbers of fish remains were retrieved from the dryland area of the mithraeum. The latter were highly fragmented and, as a consequence, almost completely undeterminable *(tab. 2)*. Nevertheless, it was possible to identify salmonids, which serve as an indicator of 'Romanisation'[40], as well as eel (*Anguilla Anguilla*) and burbot (*Lota lota*) in the Seewiese sanctuary, both of which are often found at Roman sites and declared as delicious by various classical authors[41]. The Seewiese sanctuary yielded surprisingly low numbers of salmonids, whilst cyprinids and perch were rather more abundant *(tab. 2)*. As in the domestic areas, most fish were quite small, measuring less than 20 cm in length. Moreover, 124 (= 11 %) remains of pike (*Esox lucius*) were unexpectedly found in the Seewiese sanctuary. Such a concentration is very unusual for Roman Switzerland, where pike are mostly found in military contexts or in *vici*, and always in low numbers[42]. The latrines in the domestic areas on the other hand yielded only one specimen each of this predatory fish. Another aspect worth noting is that the pike found in the Seewiese sanctuary were less than 30 cm long, suggesting that none of them had reached their first spawning season.

Another difference between the sanctuaries and the residential areas can be found in the number of bird bones: both sanctuaries yielded higher numbers of birds than the domestic areas *(fig. 8)*. Birds were particularly numerous in the Seewiese sanctuary, with 22 % of the animal bones belonging to this class. Whilst they amounted to only 6 % in the mithraeum, it must be considered that a significant number of remains from the 4 mm fraction were identified as chicken bones and are included in the analysis of the hand-retrieved bone material, because they obviously belong to the hand-retrieved chicken bones (*see 3.1*). The high proportion of birds in the Seewiese sanctuary can also be attributed to the abundance of chicken bones. Other species were rare and included common pheasant (*Phasianus colchicus*), grey partridge (*Perdix perdix*), ducks (Anatidae), geese (*Anser* sp.), common buzzard (*Buteo buteo*) and a small number of songbirds such as house sparrows (*Passer domesticus)*, finches (*Fringilla* sp.) and robins (*Erithacus rubecula*).

Furthermore, relatively high proportions of reptiles, amphibians and gastropods were found in the Seewiese sanctuary *(fig. 8)*. Scales from beneath the skin of slow-worms, for instance, were concentrated in the vicinity of Temple B. Amphibians, on the other hand, were mainly found in the waterlogged areas of the sacred district. The mithraeum yielded mainly small land and water snails, and hardly any amphibians or reptiles.

Discussion

All three areas of the *vicus* at Kempraten yielded a considerable number and variety of large and small animal bones. Our analyses have identified both commonalities and, in some cases, rather large discrepancies between

40 We have used this term to record an adopted or modified scale of value attributed to different fish species in terms of the prevailing dietary habits in the northern Roman provinces. For more information on this topic see Hüster Plogmann 2006, 187–199.

41 Cf. Hüster Plogmann 2006, 187–199.

42 Hüster Plogmann 2002; Hüster Plogmann 2007; Ginella et al. 2011.

both categories. Moreover, in terms of the small animal remains, a distinction should be made between natural and anthropogenic introductions, which in turn can provide interesting evidence pointing to a variety of human uses and activities.

Natural introductions

Amphibians, reptiles, gastropods and small mammals were the main natural introductions. These animal groups first and foremost point to the ecological conditions that existed at the site and in the local area. The fauna identified in the Seewiese sanctuary, i. e. small land snails, frogs and toads as well as various voles and insectivores, suggests a waterlogged terrain with the appropriate habitat for each individual species. Slow-worms, which were well represented, favour ground vegetation that offers a lot of dense cover and sufficient soil moisture. However, there must also have been dry and sunny areas. The Seewiese temple buildings provided an adequate number of dry nesting sites for mice and also offered dependable sources of food (e. g. food waste from cult activities?). Moreover, the fact that such a great variety of animal groups was represented suggests that quite a large number of small animals were able to roam the area freely at certain times, particularly in the southern half of the sacred district, where we have proposed the location of a grove based on the archaeobotanical investigations[43]. The small animals from the Seewiese sanctuary suggest that phases of human absence alternated with phases of human activity at the site.

Although not all of the remains from the mithraeum are available for analysis yet, the composition of animal groups mentioned above also suggests that human presence was not constant.

The domestic areas of the *vicus*, however, have yielded comparatively fewer amphibians, reptiles and land snails. Based on the postcranial skeletal elements of small mammals, we can probably expect more commensal rodents, as are often found in settlement contexts from the Roman period[44]. In contrast to the Seewiese sanctuary, insectivores, water shrews in particular, larger voles and elusive mouse species such as harvest mice, were not found in the domestic areas of the *vicus*.

We can therefore assume that the ecological conditions were largely the same throughout the whole area of Kempraten and its environs, but that there was a higher density of species overall in the sacred district, because it was less often frequented by people, and the natural fauna was therefore largely undisturbed and better able to thrive.

Anthropogenic introductions of large and small animals and how to interpret them

By contrast to the animal species mentioned in the last paragraph, we can assume that the remains of domestic mammals, certain bird species and fowl as well as fish were intentionally introduced to the site as part of human activity. However, it is not always possible to determine for what purpose they were brought to the site. In the case of the remains of domestic mammals, birds and fish in the domestic areas, for instance, we would assume that these were left behind after the consumption of meat. This can be confirmed not only by the presence of butchery marks and burnt bones but also more directly by digested bones from the latrines. In the sanctuaries, on the other hand, it is often difficult to distinguish between a sacrificial offering and food waste from a ceremonial feast. In the case of the severely burnt bones (mainly of birds), which were found in greater numbers near the places for burnt offerings in the Seewiese sanctuary, it is more obvious to make the assumption that these were sacrificial offerings than in the case of the mainly unburnt large animal bones. We are inclined to interpret the latter as the remains of ceremonial feasts. Therefore, we can assume that the animal bones found in the two sanctuaries did not come from a domestic context, but were part of a sacred rite, which led to a particular selection of animals.

The selection of animals in domestic and sacred contexts

Based on written and pictorial sources, domestic cattle, pigs and sheep can be seen as the typical choice of sacrificial animal in Roman cult practice[45]. All three species were found in all areas of Kempraten, albeit in varying proportions. The animal species from the domestic areas of the *vicus* and the Seewiese sanctuary exhibited close similarities, particularly in the overlapping peri-

43 Koch et al. 2018.
44 Cf. Hüster Plogmann 2007.
45 Deschler-Erb 2015, 24–25.

ods. The same applies to the slaughter ages of cattle, which suggest a preference for young individuals. This is in contrast to other Roman sites in Switzerland[46], and may be an indication of the economic choices of the region today known as eastern Switzerland. Perhaps animal husbandry and particulary dairy farming were more important here than crop cultivation[47]. The importance of domestic cattle both in the domestic areas of the *vicus* and in the Seewiese sanctuary can be seen as an indication of close economic and probably also social links. The distinctly lesser importance of domestic mammals in the mithraeum, on the other hand, was probably due to the special nature of the cult of Mithras, since mammals also played an unusually insignificant role compared to poultry in other mithraea[48].

Equines played a special part in the Seewiese sanctuary, as suggested both by the slightly higher number of fragments and the evidence pointing to the consumption of horse meat. Because hardly any equine bones have so far been found in the domestic areas of the *vicus*, we can only assume that this was associated with some sort of sacred context. No comparable examples have yet come to light, which makes it more difficult to interpret the situation. The evidence probably attests to local customs, since the sacrifice of horses was rarely practised in Roman religions[49] but did play a relatively important role in Celtic cult practices[50]. It must also be borne in mind that the consumption of horse meat in many regions of the Roman empire was practically taboo[51].

The number of birds, and particularly chicken, was insignificant amongst the mainly unburnt large animal bones in the Seewiese sanctuary and in the domestic areas of the *vicus*. However, they were extremely well represented amongst the burnt bones from the places for sacrificial offerings in the Seewiese sanctuary and in the mithraeum. In both cases this attests to the special importance of poultry in cult practices, both as burnt offerings at Seewiese and as part of the ceremonial feasts that took place at the mithraeum. The burnt offerings may have been linked to the cult of Magna Mater, as suggested by comparable observations made at the Isis and Mater Magna sanctuary in Mainz[52]. In this context, it is worth noting that the Seewiese sanctuary yielded numerous remains of laying hens, whilst cocks were predominant at Mainz[53] and at mithraea – for example at Tienen[54]. However, due to the preliminary nature of our results, we cannot say yet if the same applied to the mithraeum of Kempraten. Additionally there are questions around the origin of the large number of chickens and if they were bred specifically for the ceremonial activities.

Besides severely burnt poultry remains, the Seewiese sanctuary also regularly yielded burnt fish bones, even though such fatty bones tend to be completely incinerated in an oxidising fire. It is highly likely that the fish remains therefore represented only a small proportion of the total number of sacrificial fish at the site. The fish remains included species of the family of cyprinids as well as perch. These were also found in the latrine pits, but in varying numbers. It is unclear whether the discrepancies mirrored different dietary preferences or whether they were the result of varying fishing techniques. Fish sizes were similar in all areas, with the majority measuring less than 20 cm in length; this suggests intensive shoreline fishing. With the exception of the very popular salmonids which, besides perch and cyprinids, were also quite numerous, edible fish such as burbot, eel or Spanish mackerel only occurred in isolated instances. This applied to all areas, including the sanctuary Seewiese, though the latter stood out by virtue of the fact that it had yielded only few salmonids. This could mean that salmonids did not play any role in the cult practices that took place at the sacred district but were popular as part of the diet in the domestic area. The most remarkable aspect, however, was the discovery of 124 pike remains in the Seewiese sanctuary. This species is rarely found at Roman-period sites and, according to written sources, was not particularly favoured as part of the Roman diet[55]. It comes as no surprise, therefore, that both domestic latrine pits at Kempraten only yielded a single specimen each of this predatory fish. In contrast, remains of young pike were found dispersed across all areas for burnt sacrifices in the Seewiese sanctuary. Compared to the other fish species, it is likely that young pike were not favoured in the domestic kitchen, since they have an oversized head and very little edible flesh. Moreover, catching these young specimens involves a lot of effort because they tend to live as solitary individuals in rather inaccessible reed beds along the water's edge. We therefore presume that fishing for pike was likely to have been cultically motivated[56].

46 Groot / Deschler-Erb 2016.
47 Other studies have also come to the same conclusion; Deschler-Erb 2016.
48 E. g. Olive 2004; Lentacker et al. 2004.
49 As a rare example, the so called October horse is mentioned in written sources, Deschler-Erb 2015, 27.
50 Deschler-Erb 2015, 27 and 169–171.
51 Peters 1998, 164.
52 Hochmuth et al. 2005.
53 Hochmuth et al. 2005.
54 On mithraea in general: Lentacker et al. 2004, 81 and 88–90.
55 Ausonius' *Mosella* dating from the 4th century includes this statement about pike: "[…] only in stinking, ponging taverns is it cooked". E. g. Hüster Plogmann 2006, 192.
56 A religious deposit at Basel-Münsterhügel also contained the remains of a pike skull; Stopp 2011, 344–345.

Conclusions

In comparing the animal bones from two sacred sites with those from the residential areas of the *vicus* at Kempraten both commonalities and significant discrepancies were identified.

The biggest differences were observed amongst the naturally occurring small animal remains, the fowl and the fish. Apart from the presence of commensal species of mice in all areas, there was a large variety of wild mammals and significant numbers of amphibians, reptiles and gastropods in the Seewiese sanctuary. Whilst this does not point to the use of these animals as part of the cult practice, it does suggest the discontinuity of the human use of the area, characterised by phases of intensive human activity alternating with phases during which the site lay idle, as we would expect for a sacred district.

There were also differences with regard to the animals that were sacrificed. Chicken bones, for instance, were far less abundant in the domestic areas of the *vicus* than in the sanctuaries. Such higher numbers of chicken bones at sacred sites compared to domestic contexts have also been observed elsewhere. This inevitably raises the question as to where the many chicken found in the sanctuaries came from. According to the finds recovered from the domestic areas of the *vicus* so far, chicken farming does not appear to have been widespread in the region.

Analyses of Roman-period fish remains from sacred contexts are generally quite rare. One reason is that wet-sieving is not often undertaken at excavations of temple sites. Because the fatty bones tend to be completely incinerated at high temperatures, they are not very often detected in places for burnt offerings. Fortunately, the Seewiese sanctuary yielded both burnt and unburnt fish bones, which suggests that fish, young cyprinids and perch in particular, as well as young pike, though of very little culinary value, did indeed play a role in the ceremonial activities, and that these species were probably targeted specifically for use in a sacred context.

The proportions of the large domestic and wild animal bones from the Seewiese sanctuary, on the other hand, besides some perhaps cultically motivated differences (equines), were very similar to those from the domestic areas of the *vicus*. The inhabitants of the *vicus*, or those who performed the ceremonial acts, therefore shared the same meat with the Gods that was also part of their everyday diet. In this case, the local or regional economy and the cultural context were interwoven[57].

The cultic acts performed at the place for burnt sacrifices, probably in veneration of Mater Magna, instead mainly involved offering poultry, and the same applied to the nearby mithraeum. In these cases, the selection of the sacrificial fowl appears to have been cultically rather than economically motivated. In domestic contexts in fact poultry bones are rarely found and chicken farming was not particularly important in this region in general[58]. Therefore, on the basis of the chicken bones, it is not possible to make any further statements concerning the social and cultural affiliation of the people who performed the ceremonies in the sanctuaries as it is in the case of cattle in the Seewiese sanctuary. The same can be said for the fish finds from the Seewiese sanctuary; the selection of species is also highly likely to have been cultically motivated, but the exact background (thus far) remains a mystery.

The archaeozoological comparison between two profane and two sacred areas of the Roman *vicus* has shown that there was a strong link between economic and cult practices. However, there was a different motivation behind the choice of animals that were sacrificed as part of certain cults and practices.

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57 The interconnectedness of the settlement's economic system with the cultically motivated consumption of meat was also observed at Avenches; Deschler-Erb 2015, 110–118.

58 Groot / Deschler-Erb 2015, 453.

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Abstract

In this study, archaeozoological remains (hand-retrieved and retrieved from soil samples) from residential areas and from two different sanctuaries from the *vicus* Kempraten have been analysed and compared. The archaeozoological assemblage consists of 15 886 animal remains identified to animal group and/or species and were recovered from a number of different features which partially overlap chronologically. We discuss commonalities and discrepancies as well as possible reasons behind the selection of certain animal species for domestic and/or ritual purposes. We found remarkable differences amongst the naturally occurring small animal remains, the fowl and the fish. A large variety of natural intruders (wild small mammals, amphibians, reptiles, gastropods) in the gallo-roman sanctuary let us assume that phases of intensive human activity alternated with phases during which the site lay idle. The cultic act in both sanctuaries mainly involved offerings of poultry. The selection of the sacrificial fowl appears to be rather cultically and not economically motivated. The same can be said for the fish finds, especially for young pike from the gallo-roman sanctuary, because in residential areas of the *vicus* fowl and pike were far less abundant than in the sanctuaries. Comparing the proportions of the large domestic and large wild animal bones from the gallo-roman sanctuary with those from the domestic areas of the *vicus*, we can find a large similarity. Therefore, we assume that animals like cattle or pig played an important role in the everyday diet as well as in the cultic rituals of the inhabitants of Kempraten.

Zusammenfassung

Tiere im rituellen und häuslichen Kontext: Eine vergleichende Studie zwischen den Faunengesellschaften aus Wohngebieten und zwei Heiligtümern des *vicus* Kempraten (Rapperswil-Jona, CH)

In dieser Studie wurden sowohl von Hand aufgelesene als auch aus Bodenproben stammende Tierreste aus dem *vicus* Kempraten (Schweiz) untersucht. Die insgesamt 15 886 bis auf Tiergruppe und/oder -art bestimmten Reste stammen aus dem profanen Siedungsbereich sowie einem gallo-römischen Tempelbezirk und einem Mithraeum und überschneiden sich teilweise zeitlich. Die Studie stellt die Unterschiede und Gemeinsamkeiten der Tierreste aus diesen verschiedenen Bereichen des *vicus* vor und diskutiert die Selektion bestimmter Tierarten für häusliche und/oder rituelle Zwecke. Unterschiede zwischen den Bereichen fielen insbesondere bei Anzahl und Zusammensetzung der Reste von natürlich vorkommenden Kleintieren, Geflügel oder Fischen auf. Eine Vielzahl wilder Kleinsäuger, Amphibien, Reptilien und Schnecken im gallo-römischen Heiligtum weisen auf einen Wechsel von Phasen menschlicher Abwesenheit und Phasen menschlicher Aktivität hin. Bei den Kulthandlungen in beiden Heiligtümern spielte Geflügel eine große Rolle. Deren Auswahl ergab sich wohl vor allem aus kultischem Hintergrund und nicht aus wirtschaftlichen Motiven. Gleiches gilt für die Fischfunde, insbesondere für die nachgewiesenen jungen Hechte, denn insgesamt wurden in den Wohngebieten weit weniger Geflügel und Hechte nachgewiesen. Hingegen ergab sich beim Vergleich der Anteile der großen Haus- und Wildtiere aus dem gallo-römischen Heiligtum mit denjenigen aus den Wohngebieten eine große Ähnlichkeit. Es kann also davon ausgegangen werden, dass den Rindern und Schweinen eine wichtige Rolle sowohl in profanen als auch in kultischen Lebensbereichen der Bewohner von Kempraten zukam.

Résumé

Les animaux en contexte rituel et domestique: une étude comparative entre les ensembles faunistiques de zones résidentielles et de deux sanctuaires du *vicus* de Kempraten (Rapperswil-Jona, CH)

On a examiné et comparé dans cette étude les restes archéozoologiques (collectés à la main et extraits d'échantillons de sol) provenant de zones résidentielles et de deux différents sanctuaires du *vicus* de Kempraten. L'ensemble archéozoologique comprend 15 886 restes animaux identifiés à un groupe ou à une espèce et provenant de différentes structures qui se recoupent partiellement sur l'axe chronologique. Nous discutons les points communs et les différences, ainsi que les raisons possibles qui ont mené à sélectionner certaines espèces à des fins domestiques ou rituelles. Nous avons constaté des différences remarquables parmi les restes de petits animaux naturels, la volaille et le poisson. Une grande variété d'espèces invasives naturelles (petits mammifères sauvages, amphibiens, reptiles, gastropodes) dans le sanctuaire gallo-romain fait penser que des phases d'activité humaine intensive alternaient avec des phases où le site restait inoccupé. Le culte observé dans les deux sanctuaires impliquait principalement des offrandes de volaille. La sélection de volaille pour le sacrifice répondait à des motivations plus cultuelles qu'économiques. Ceci vaut également pour le poisson, spécialement les jeunes brochets du sanctuaire gallo-romain, car la volaille et les brochets étaient bien moins fréquents dans les zones résidentielles du *vicus* que dans les sanctuaires. Les pourcentages d'os de grands animaux sauvages et de grands animaux domestiques provenant des sanctuaires sont par contre très comparables à ceux des zones résidentielles du *vicus*. On peut en conclure que des animaux tels que les bovins et les porcs jouèrent un rôle important dans le menu quotidien et dans les rites culturels des habitants de Kempraten.

Sabazios-Kult in *Sorviodurum* Tierknochen aus einer Kultgrube in Straubing (Bayern/Deutschland)

von *Constanze Höpken / Hubert Berke*

Schlüsselwörter

Sorviodurum (Straubing, DE), Kultgrube, Bärentatze, Schlangentopf

Keywords

Sorviodurum (Straubing, DE), Ritual pit, bear paw, Snake pot

Mots-clés

Sorviodurum (Straubing, DE), fosse rituelle, patte d'ours, vase à serpents

Über den Kult des Gottes Sabazios – ein orientalischer Gott mit vorrömischen Wurzeln – ist wenig bekannt. Während in hellenistischer Zeit noch schriftliche Quellen herangezogen werden können[1], geben für die römische Zeit nur archäologische Quellen Auskunft. Aus der hellenistischen Tradition ist bekannt, dass Sabazios zu den Göttern zählte, die ein glückliches Leben und eine mystische Vereinigung im Jenseits versprachen. Der Kult könnte vor allem Frauen angesprochen haben, da er als Gott für die Fruchtbarkeit und die immer wieder erwachende Natur auch für die Geburtshilfe zuständig war. Als Sinnbild einer jährlichen Erneuerung stehen die Attribute Schlange, Eidechse, Frosch und Schildkröte. Sie sind neben weiteren kennzeichnenden Objekten auf bronzenen Votivhänden dargestellt[2] – den häufigsten Relikten des Sabazioskultes römischer Zeit[3]. Die Verehrung des Gottes Sabazios breitete sich vermutlich im Umfeld des römischen Militärs von Osten her seit dem frühen 1. Jahrhundert in die westlichen Provinzen des Römischen Reiches aus.

Ein dem Sabazios geweihter Tempel ist bislang nicht nachgewiesen; Belege für seine Verehrung finden sich gelegentlich in Wohnquartieren, beispielweise in Pompeji[4]. Vermutlich kamen die Mitglieder der Kultgemeinschaften in Versammlungslokalen zusammen, wie dies auch zur Verehrung anderer Götter, beispielsweise Mithras und Jupiter Dolichenus, üblich war[5].

1 Grundlegend zum Sabazioskult siehe Lane 1983; Lane 1985; Lane 1989; Fellmann 1981; Johnson 1984.

2 Viele dieser Objekte sind auch Bestandteile der sog. Mithrassymbole, die in Frauengräbern Niedergermaniens gefunden wurden (vgl. Kiernan 2009; Gottschalk 2012).

3 Lane 1983.

4 Lane 1983, 7–9.

5 Schäfer 2008. Zu Versammlungslokalen anderer Götter beispielsweise in *Carnuntum* siehe Kandler 2001, in *Porolissum* siehe Rusu-Pescaru / Alicu 2000, 74–77, in *Alba Iulia* siehe Schäfer / Diaconescu 1997 sowie Fiedler 2005 und vermutlich Schwarzenacker siehe Kolling 1967.

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Die sogenannte Sabaziosgrube in Straubing

Als 1993 in Straubing mehrere Schlangentöpfe in einer großen Grube entdeckt wurden, ließ sich auch im *vicus* von *Sorviodurum* – einem Militärstandort am Donaulimes in Rätien – ein Kultlokal vermuten. In der zweiten Hälfte des 1. Jahrhunderts war am westlichen Ufer der Donau ein Auxiliarkastell für zwei Kohorten errichtet worden; im Umfeld entwickelte sich die zugehörige Zivilsiedlung, in der auch die Grube lag *(Abb. 1)*[6]. In den 70er Jahren des 2. Jahrhunderts fielen die Markomannen in Straubing ein und große Teile der Siedlung wurden zerstört, wie Brandschichten bezeugen. Es folgte ein Wiederaufbau unter anderem mit verschiedenen repräsentativen Steingebäuden. Sein Ende fand der *vicus* schließlich durch Germaneneinfälle nach der Mitte des 3. Jahrhunderts.

Hinweise auf eine Sabaziosgemeinde gaben allein die Kratere aus der Grubenfüllung und deren Umgebung, die, außer mit Schlangen, zusätzlich mit Fröschen, Eidechsen und Schildkröten verziert waren *(Abb. 2)*[7].

Die Grube lag inmitten der zivilen Siedlung im Bereich von Wohnbebauung südlich des Auxiliarkastells *(Abb. 1)*[8], unweit einer nordsüdlich ausgerichteten Straße, die beidseitig von Holzgebäuden gesäumt war. Hier betrieben verschiedene Handwerker ihre Werkstätten und Händler ihre Läden[9]. Ein Bezug zu einem Gebäude ist derzeit nicht erkennbar, dennoch ist eindeutig, dass der Bau sich innerhalb eines Wohnquartiers befand, in dieses integriert war und keinesfalls zu einem freistehenden Tempel gehört haben kann.

Der Befund

Die Grabungen fanden im November 1993 unter Zeitdruck und widrigen Bedingungen statt; da der Befund zudem in das benachbarte Grundstück hineinragte, konnte die Grube nicht vollständig ergraben werden. Dennoch lassen die differenzierte Fundbergung und die nach Plana organisierte Grabungstechnik detaillierte Aussagen zum Befund zu.

Die im Osten nicht vollständig ergrabene, rechteckige Vertiefung maß 4,6 × 3,3 m und war bis zu einer Tiefe von 1,8 m erhalten[10]. Darüber lag eine Brandschicht aus Holzkohle und Hüttenlehm, die entweder von den Markomannenkriegen in der zweiten Hälfte des zweiten Jahrhunderts oder von den Germaneneinfällen im 3. Jahrhundert herrührt. Die Grubenfüllung selbst lässt sich anhand der Keramik in die Mitte des 2. Jahrhunderts einordnen.

Der Grabungspraxis in Straubing entsprechend war die Grube in mehreren Schichten, nach künstlichen Plana getrennt, ausgenommen worden. Hierbei wurden die Funde zum Teil aus verschiedenen Bereichen nochmals getrennt geborgen und mit einer eigenen Fundnummer versehen. Da aufgrund der widrigen Witterungsbedingungen kaum nach natürlichen Verfärbungen getrennt werden konnte, sind Vermischungen gegeben. Dies zeigt sich auch deutlich durch Passscherben zwischen vielen Fundnummern. Aufgrund der detaillierten Fundbergung konnten daher während der Auswertung der Fundumstände und der Profilzeichnungen Fundkomplexe rekonstruiert werden (vgl. *Tab. 1*). Allerdings fanden sich in einem Fall Scherben von einem Kultgefäß in allen Komplexen und darüber hinaus, d. h. von den unteren bis zu den oberen Fundkomplexen der Grube und in deren Umfeld, wo das Fest mutmaßlich stattgefunden hat.

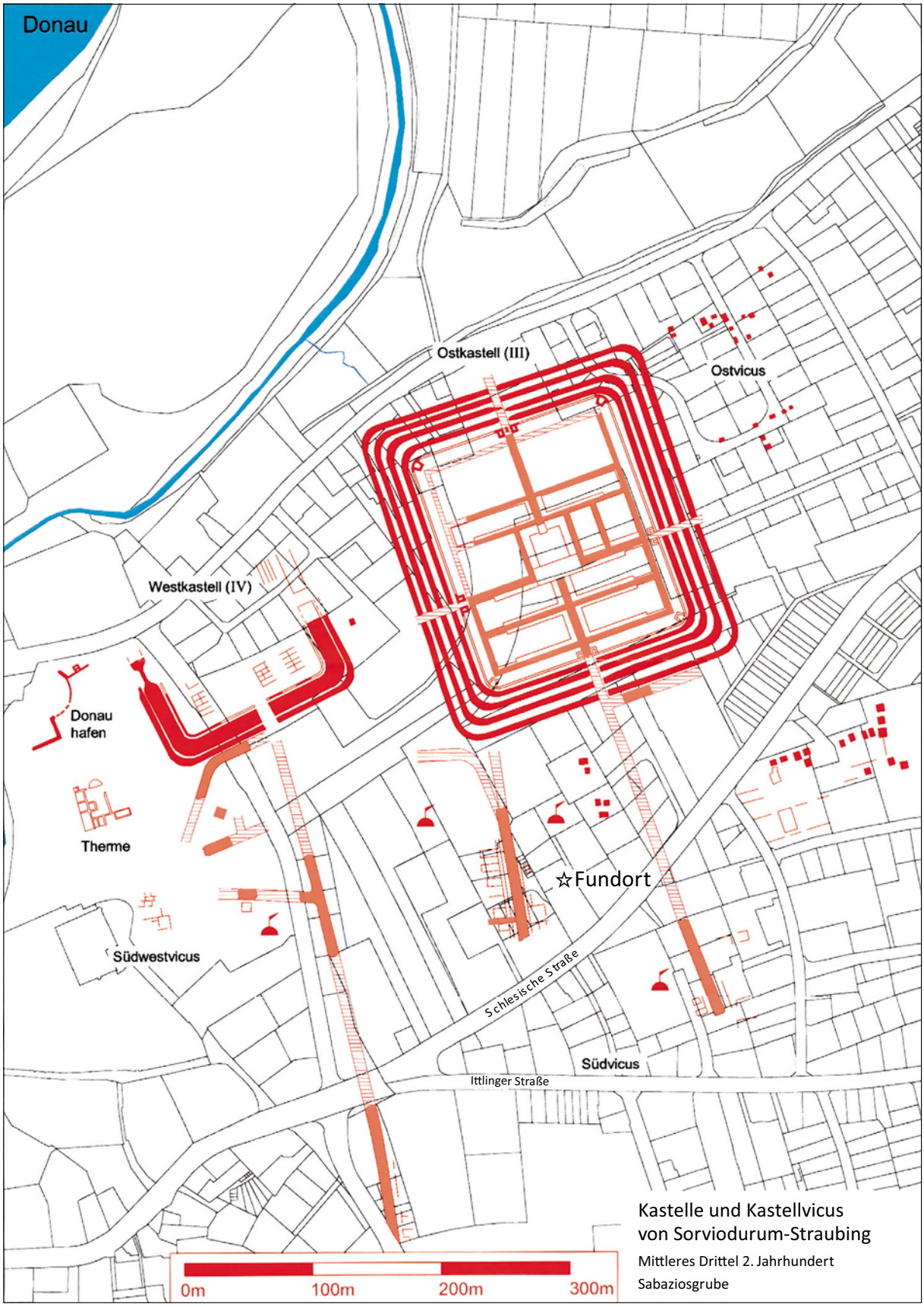
6 Insgesamt zur Geschichte Straubings siehe Prammer 1989.

7 Johannes Prammer (Dir. a. D. Gäubodenmuseum Straubing) danke ich für die Möglichkeit, dieses Material bearbeiten zu dürfen. Finanziert wurde das Projekt 2011/12 durch die Deutsche Forschungsgemeinschaft. Bisher dazu Höpken 2011; Höpken 2012; Höpken 2014.

8 Stationiert in Straubing von traianischer Zeit bis in die erste Hälfte des 3. Jahrhunderts war die *Cohors I Flavia Canathenorum milliaria sagittariorum*.

9 Prammer 1989, 68–70.

10 Die Grabung wurde 1993 unter der wissenschaftlichen Leitung von Johannes Prammer und der technischen Leitung von Reinhold Pielmeier durchgeführt. Vgl. Prammer 1995; Wolff 1998.



1 Das römische Straubing mit verschiedenen Militärlagern und der Lage der sog. Sabaziosgrube im *vicus* (Gäubodenmuseum Straubing).

2 Schlangentöpfe mit weiteren Applikationen aus dem Sabazioskomplex in Straubing (Foto M. Fiedler).

Komplex	Fundnummern	statistische Daten	Kommentar
1 (Planum I–II)	132, 133, 135	Funde ges. n = 406 davon bestimmbare übrige Tierknochen: 159 Huhn: 14 Terra Sigillata: 53 Becher: 46	Gans, Hase, Wildrind, Wildschwein, Hund, Pferd (adult, senil), Rind (adult), Schwein (ca. 30 % adult), Schaf/Ziege (ca. 50 % adult), Huhn (mindestens ein Kapaun) Räucherkelche, Kantharoi, Krater
2 (Planum II–III)	148, 151, 159, 160, 161, 162, 166, 167, 168	Funde ges. n = 528 davon bestimmbare übrige Tierknochen: 216 Huhn: 53 Terra Sigillata: 44 Becher: 60	Wildschwein, Hirsch, Hund Pferd (alle Altersklassen), Rind (ca. 75 % adult) Schwein (wenige adult) Schaf/Ziege (weniger als 50 % adult) Huhn Räucherkelche, Schlangentopffrg., Lampe, Kantharoi, Kratere
3 (Planum III–IV)	169, 172, 173, 174, 175	Funde ges. n = 382 davon bestimmbare übrige Tierknochen: 123 Huhn: 20 Terra Sigillata: 43 Becher: 56	Pferd (adult, senil), Rind (ca. 75 % adult) Schwein (ca. 25 % adult) Schaf/Ziege (ca. 50 % adult) Huhn (mindestens ein Kapaun) Räucherkelche, Schlangentopffrg., 2 Lampen, Kantharoi, Kratere
4 (unter Pl. IV)	176, 178, 181, 184, 185, 189	Funde ges. n = 337 davon bestimmbare übrige Tierknochen: 207 Huhn: 31 Terra Sigillata: 20 Becher: 16	Hirsch, Ur Pferd (juvenil, adult), Rind (adult) Schwein (unter 30 % adult) Schaf (ca. 50 % infantil) Huhn (mindestens ein Hahn) Räucherkelche, Schlangentopffrg., Ringlampe
5 (unter Pl. IV)	179, 180, 186, 190, 192	Funde ges. n = 348 davon bestimmbare übrige Tierknochen: 250 Huhn: 13 Terra Sigillata: 47 Becher: 26	Bär, Hirsch, Wildrind Katze Pferd (adult, senil), Rind (ca. 75 % adult) Schwein (wenige adult) Schaf/Ziege (wenige adult) Huhn (ein Kapaun?) Wetzsteine, Räucherkelche, Schlangentopffrg.
6 (unter Pl. IV)	182, 188, 191, 193, 194	Funde ges. n = 260 davon bestimmbare übrige Tierknochen: 159 Huhn: 6 Terra Sigillata: 7 Becher: 16	Wildschwein Katze Pferd (adult, senil), Rind (adult) Schwein (v. a. adult) Schaf/Ziege (v. a. adult) Huhn Räucherkelche

Tab. 1 Rekonstruierte Fundkomplexe in der Grube.

Die Verfüllung der Grube enthielt, außer zahlreichen Knochenresten, Bruchstücke von mehr als zehn Schlangentöpfen – fünf davon mit weiteren applizierten Amphibien und Reptilien – und weiteren Kultgefäßen sowie Reste zahlloser Trinkbecher und von einfachem Tisch- und Haushaltsgeschirr. Die weitgehend bzw. vollständig zusammensetzbaren Gefäße, die – im Falle vieler Becher – unbenutzbar waren, bzw. – im Falle der Teller – ihre Gebrauchsspanne bereits überschritten hatten[11], lassen sich als rituelle Deponierung deuten. Bei den Bechern handelt es sich vielfach um Fehlbrände, die durch eine Lochung im Boden unbrauchbar gemacht worden waren. Im Gegensatz dazu zeigen die Teller sehr intensive Gebrauchsspuren, insbesondere Rußanhaftungen außen und Schnittspuren sowie gelegentlich auch Reste von angebrannten Nahrungsmitteln innen. Vermutlich gehörten zu diesem Depot auch mehrere vollständige Öllampen, die sich im Zentrum der Grube konzentrierten.

Die Schlangentöpfe und andere Kultgefäße hingegen waren mitunter stark zerscherbt und nicht alle Fragmente der einzelnen Gefäße waren in die Grube gelangt; viele Bruchstücke lagen im Umfeld. Es ist also davon auszugehen, dass diese Gefäße nicht zur Deponierung gehörten[12].

Viele Schlangentopf-Fragmente fanden sich im unteren Teil der Füllschicht und gehörten offenbar zum unmittelbar auf die Deponierung folgenden Verfüllungsmaterial. Möglich ist, dass sie während der Kultfeier, die im Zusammenhang mit der Deponierung abgehalten wurde, zu Bruch gingen und dann mit anderem Abfall der Feier in die Grube gelangten. Dies gilt nicht nur für einige Schlangentöpfe, sondern auch für einzelne Räucherkelche und Keramikaltäre[13], außerdem Tisch- und Küchengeschirr. Die übrigen Scherben der Gefäße lagen in der obersten Grabungsschicht vor allem südlich der Grube bis zu 15 m im Umkreis verstreut – möglicherweise fanden in diesem Bereich die Feste statt.

Die Tierknochen

Die Tierknochen (n = 1373, vgl. *Tab. 2*) konnten aufgrund der Grabungstechnik in Plana getrennt nach verschiedenen Lagen in der Grube untersucht werden. Einige Knochen zeigen Spuren von Hundeverbiss, die sich jedoch nicht im oberen Teil der Grube konzentrieren, sondern auch aus den unteren Bereichen der Füllung stammen. Entweder wurden die Knochen angenagt, als sie noch nicht in der Grube lagen – dann hätten Hunde Zugang zum Gelände während oder direkt nach den Feierlichkeiten gehabt – oder die Grube stand eine gewisse Zeit offen, wurde erst nach und nach verfüllt und war für Hunde zugänglich[14].

11 Höpken 2011.

12 Möglich ist allerdings, dass gezielt einzelne Fragmente in der Grube deponiert wurden. Zur rituellen Deponierung einzelner Gefäßfragmente siehe Ulbert 2004 bzw. Wulfmeier 2004.

13 Höpken 2012.

14 Siehe dazu auch Deschler-Erb 2015, 47.

Komplex 1-6 ---------- Tierarten	1 133	1 135	1 151	2 148	2 160	2 166	2 168	3 169	3 172	4 176	4 178	4 182	4 189	5 179	5 186	5 190	6 188	6 191	6 194	
Pferd	2	6			13	1	3	6	6	3	2	3	1	7		8	6	5	8	**80**
Rind	31	48	1	2	41	4	35	29	36	61	14	5	28	16	17	100	25	45	44	**582**
Schwein	23	21	3	3	25	10	16	6	13	10	18	5	19	25	21	13	1	13		**245**
Schaf/Ziege	3	12			5	18	28	3	15	4	13	1	10	14	6	10		5		**147**
Schaf				1	2		3	4	2	1		2	2	3	5	2	1		3	**31**
Ziege		3			1				3					1						**8**
Huhn	3	11			15	11	27	11	9	10	14	2	5	4	9		1	3	2	**137**
Hund	2	1					3													**6**
Bär														1						**1**
Hase		1																		**1**
Wildschwein		1			1		1								1			1		**5**
Hirsch										1	2			1	1					**5**
Wildrind sp.		1																		**1**
Ur										1										**1**
unbestimmt	2	16			18	5	21	12			22				19			8		**123**
	66	**121**	**4**	**6**	**121**	**49**	**137**	**71**	**84**	**91**	**85**	**18**	**65**	**72**	**79**	**133**	**34**	**80**	**57**	**1373**

Tab. 2 Tierartenspektrum aus der sogenannten Sabaziosgrube in Straubing, aufgeschlüsselt nach Komplexen und Fundnummern (vgl. *Tab. 1*).

Um eine Vergleichbarkeit zu den Siedlungsfunden herzustellen, wurde ein weiterer Komplex mit allerdings nur 61 Knochen(fragmenten) untersucht: Von 26 Rinderknochen stammen 23 von adulten Tieren, drei von juvenilen. Von neun Schafknochen stammen acht von adulten Tieren, einer von einem juvenilen. Von acht Schweineknochen stammen fünf von adulten Tieren, drei von jüngeren. Alle neun Pferdeknochen stammen von adulten Tieren. Hinzu kommen zwei Hundeknochen. Daneben gibt es zwei Vogelknochen – einer hinsichtlich der Art unbestimmbar, einer vom Kranich –, eine Geweihstange und zwei Knochenfragmente vom Hirsch sowie einen Beleg für ein Wildschwein.

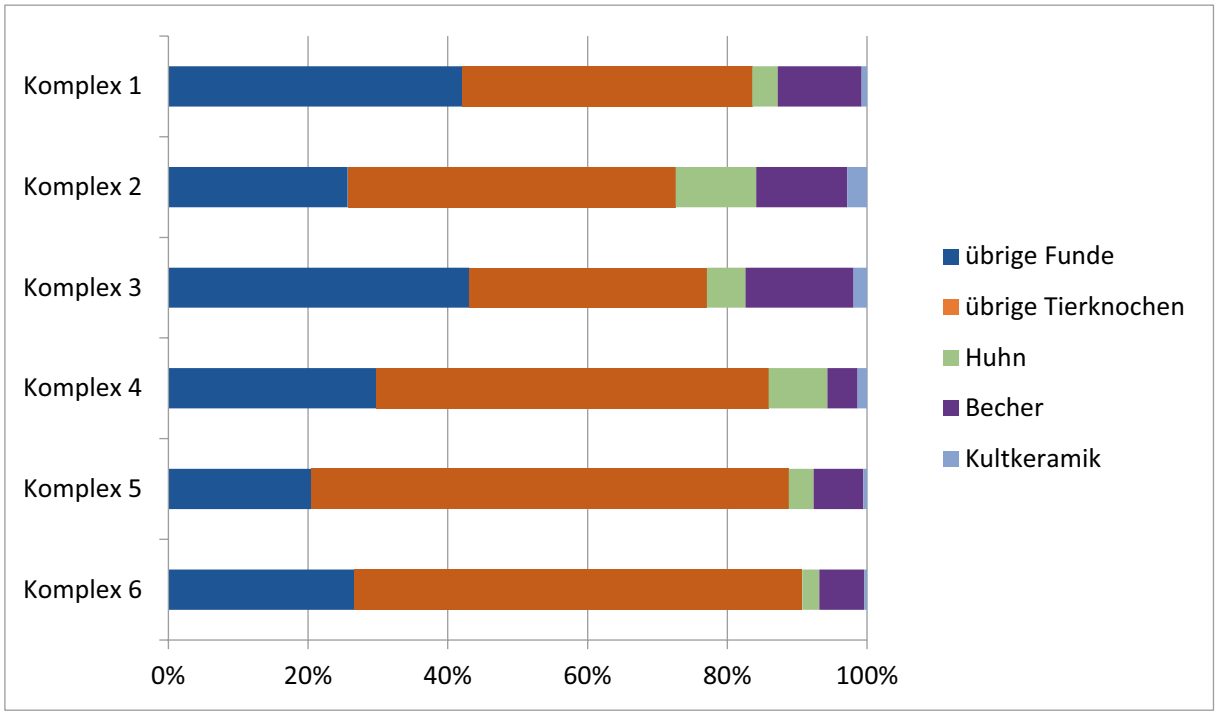
Diese Tendenz entspricht der Schicht, die zuunterst in der Grube lag (Komplex 6, n = 171)[15] (vgl. *Tab. 2*): das Knochenspektrum wird dominiert von Rind (adult) und weiteren Haustieren; dazu kommen Knochen von einem sehr alten Pferd. Insgesamt entspricht dies einem Spektrum, bei dem sich die Schlachtzeiten der Tiere an ökonomischen Grundgedanken orientierten. Schaf und Schwein sind teils adult, teils jünger – hier liegt wohl schon eine Vermischung mit dem Material von den Kultfeiern vor. Hierauf weisen als ‚Kultanzeiger'[16] auch einige Hühnerknochen[17], darunter ein Tarsometatarsus von einem Hahn, und je ein Fragment von einem Räucherkelch, einem Schlangentopf und einem Keramikaltar hin.

3 Drei Metacarpus-Knochen einer vorderen rechten Bärentatze aus Fundnummer 179/Komplex 5.

15 Zu den Fundnummern und weiteren Funden siehe *Tab. 1*.

16 Zu Gegenständen und Phänomenen, die als ‚Kultanzeiger' gelten können, siehe Höpken / Fiedler 2017; Höpken / Fiedler 2015; Höpken 2015.

17 Deschler-Erb 2015, 113–114.



4 Anteilsvergleich der ‚Kultanzeiger' Trinkbecher, Hühnerknochen und Kultkeramik sowie der restlichen Knochen und der übrigen Funde in den einzelnen Fundkomplexen in der Grube.

Im darüberliegenden Komplex 5 (n = 282) unterscheidet sich das Spektrum signifikant von dem darunter liegenden: Neben Wildarten wie Wildschwein und Hirsch fällt eine vordere rechte Bärentatze auf, von der drei Metacarpus-Knochen erhalten sind *(Abb. 3)*. Ungewöhnlich sind zudem kleine Fragmente von einem Katzenschädel. Hinzu kommen 13 Hühnerknochen. Zum üblichen Spektrum einer Siedlung zählen Knochen von meist adulten Rindern, Pferden und Hunden. Bei Schwein und Schaf bzw. Ziege ist der Anteil der jüngeren Tiere höher als zuvor. Mit Fragmenten von Räucherkelchen, Schlangentöpfen sowie von einem Lochrandtopf[18] sind ‚Kultanzeiger' vorhanden. Zwei Wetzsteine hingegen scheinen eher wieder auf Siedlungsabfall und damit auf eine Vermischung hinzudeuten.

Komplex 4 (n = 259) hat mit Hirsch und Ur wieder Wild im Spektrum; die Zahl der Hühnerknochen verdoppelt sich; ein Hahn ist nachgewiesen. Das Altersspektrum der Schafe zeigt etwa 50 % infantile und einige juvenile und subadulte Tiere – nur wenige sind adult. Bei den Schweinen ist das Spektrum ähnlich, mit weniger als einem Drittel adulten Tieren. Auch beim Rind sind nur einige praeadulte Tiere belegt. In der Keramik sind wieder Fragmente von Räucherkelchen, einem Lochrandtopf und einem Schlangentopf, außerdem eine Ringlampe, die mehrheitlich in kultischen Kontexten nachgewiesen wurden[19].

Das darüber liegende Schichtpaket Komplex 3 (n = 155) zeigt im Knochenspektrum zum einen mit adultem Pferd und Rind eher Siedlungsabfalltendenzen, zum anderen sind bei den Rindern nun auch etwa 25 % der Knochen von juvenilen Tieren zu verzeichnen. Bei Schaf bzw. Ziege sind etwa 50 % der Knochen von adulten Tieren, bei den Schweinen hingegen über 75 % von jünger als adulten Tieren. In der Keramik fällt nun ein hoher Anteil an Bechern auf (vgl. *Abb. 4*). Dies ist zusammen mit einer vollständig erhaltenen Lampe und Fragmenten von Krateren, Schlangentöpfen und Räucherkelchen charakteristisch für kultische Komplexe.

Vollständige Lampen sowie Fragmente von einer Ringlampe, Kantharoi, Krateren und Schlangentöpfen kommen auch im Schichtpaket 2 darüber vor, außerdem – wie darunter – recht viele Becher. Unter den Knochen (n = 313) ist Huhn vertreten, zudem Hirsch und Wildschwein. Bei Schwein und Schaf ist der Anteil der jüngeren Tiere hoch, aber auch bei den Rindern ist etwa ein Viertel jünger als adult.

18 Zur Form siehe Höpken 2015, 163–164; 165 Abb. 1,2; Höpken / Fiedler 2017, 12–13 Abb. 1,4.

19 Höpken / Strothenke 2012, 171.

Der oberste Komplex 1 (n = 191) direkt unter der Brandschicht schließlich enthält Gans, Hase sowie Wildrind und -schwein. Bei den Hausschweinen bleibt der Anteil von Knochen adulter Tiere unter 30 %, bei den Schafen steigt er auf 50 %. Unter den Rinderknochen dominieren wieder die adulten Tiere. Die Pferdeknochen stammen wieder von adulten und senilen Tieren, wie am Boden der Grube. Die Keramikformen umfassen u. a. Bruchstücke von Kantharoi, Krateren und Schlangentöpfen sowie Räucherkelche. Auch der Anteil der Becher ist noch recht groß.

Fazit

Obwohl die Analyse der Funde zeigt, dass innerhalb der Grube eine gewisse Vermischung mit potentiellem Siedlungsmaterial vorliegt, ist zusammenfassend festzuhalten, dass zuunterst in der Grube normaler Siedlungsabfall lag, außerdem Reste von senilen Pferden mit Sterbealtern von über 20 Jahren. Darüber ändern sich das Arten- und insbesondere das Altersspektrum der nachweisbaren Tierarten. Während bei den Rinderknochen nach wie vor an wirtschaftlichen Gesichtspunkten orientierte Schlachtzeiten dominieren, liegen diese bei den anderen Nutztieren Schwein und Schaf weitaus früher. Hier dominieren juvenile Tiere die Alterskurve[20]. Es werden mitunter sehr junge Spanferkel und Milchlämmer bevorzugt, die sicherlich nicht nur in der Spätantike besonders teuer waren[21]. Der Anteil der Hühner nimmt deutlich zu – insgesamt sind in der Grube 40 Individuen nachweisbar, darunter mehrere mutmaßliche Kapaune. Der Anteil von Wild nimmt zu – hervorzuheben ist eine Bärentatze, die möglicherweise als Delikatesse bei den Kultfeiern verspeist wurde.

Mit den Funden aus Straubing bietet sich erstmals ein Einblick in die Feier einer Kultgemeinschaft zu Ehren des Sabazios, bei der Hühner, Ferkel und Lämmer, aber auch Wild verspeist wurde. Das Spektrum und die Alterskurve der geschlachteten Tiere sind typisch für kultische Mahlzeiten wie man sie vor allem aus Mithräen kennt. Da bislang keine anderen Fundkomplexe dieser Art, die mit dem Sabazioskult in Zusammenhang stehen, bekannt sind, lässt sich noch nicht sagen, ob bestimmte Charakteristika für die Verehrung des Gottes kennzeichnend sind.

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Abbildungsnachweise

Abb. 1: Gäubodenmuseum Straubing. – Abb. 2: Foto M. Fiedler. – Sonstige Abbildungen: Autoren.

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Zusammenfassung

Über den Kult des Sabazios in römischer Zeit ist nur wenig bekannt. So ist unsicher, wo er gewöhnlich stattfand – im Tempel oder in den Versammlungsräumen – und auch die Rituale haben nur wenige Spuren hinterlassen. Die weite Verbreitung der bronzenen Sabazioshände und der typischen, mit seinen Attributen Schlange, Eidechse, Frosch und Schildkröte, verzierten Kultgefäße zeigen aber, dass er an vielen Orten verehrt wurde. In *Sorviodurum*/Straubing an der Donau-Ripa wurde eine große Grube archäologisch untersucht. Sie enthielt neben vielen anderen Keramikscherben und Knochen mehrere Fragmente von Schlangentöpfen, die zudem mit Fröschen, Eidechsen und Schildkröten verziert waren. Sie gelten als Symbole für die jährliche Erneuerung der Natur. Die Analyse der Funde zeigt, dass es innerhalb der Grube offenbar eine Vermischung mit potentiellem Siedlungsmaterial gibt. Die Funde am Boden der Grube bestanden aus Siedlungsabfällen, darunter Reste von alten Pferden. In den oberen Schichten konnte eine Veränderung im Spektrum der Tierarten und vor allem in ihrem Schlachtalter beobachtet werden. Während Rinder noch überwiegend im Erwachsenenalter geschlachtet wurden, stammen die meisten Schweine- und Schafknochen von Jungtieren. Spanferkel und Milchlämmer wurden bevorzugt. Der Anteil von Hühnern nimmt deutlich zu: Insgesamt befanden sich die Überreste von 40 Individuen in der Grube, darunter mehrere mutmaßliche Kapaune. Der Anteil der Wildtiere nimmt zu, ein herausragender Fund ist eine Bärentatze, die vermutlich als Delikatesse bei den Kultfeierlichkeiten gegessen wurde.

Abstract

Sabazios cult in *Sorviodurum*
animal bones from a cult pit in Straubing (Bavaria, Germany)

Almost nothing is known about the cult of Sabazios in Roman times: neither where it usually took place – temples or assembly halls – nor the rituals. Only the wide distribution of the bronze hands and significant cult vessels – in addition to the snake pots decorated with his attributes: lizard, frog, and tortoise – show that he was worshipped at many places.

In *Sorviodurum*/Straubing on the Danube ripa a big pit was excavated. It contained among many other pot sherds and bones several fragments of snake pots which were also decorated with frogs, lizards and tortoises. They were the symbols for the yearly renewal of the nature.

The analysis of the finds shows that there is some mixing with potential settlement material within the pit, e. g. the finds at the bottom of the pit consisted of settlement waste, including remains of old horses. In the upper layers the spectrum of the animal species and especially their slaughter ages change. While cattle were still mainly butchered as adults, most of the pig and sheep bones are from juvenile animals. Suckling pigs and dairy lambs were preferred. The proportion of chicken increases significantly – in total, the remains of 40 individuals are present in the pit, including several suspected capons. The proportion of hunted animals is increasing – an outstanding find is a bear paw, which was probably eaten as a delicacy at the cult celebrations.

Résumé

Le culte de Sabazios à *Sorviodurum* os d'animaux d'une fosse cultuelle de Straubing (Bavière, Allemagne)

On ne connaît presque rien du culte de Sabazios à l'époque romaine : ni où il avait lieu – temples ou salles de réunion – ni les rites. Seuls, la large distribution des mains en bronze et les récipients caractéristiques du culte – en plus du serpent décoré de ses attributs : lézard, grenouille et tortue – révèlent qu'il était vénéré en de nombreux endroits.

Une grande fosse fut fouillée à *Sorviodurum*/Straubing sur la ripa du Danube. Elle contenait parmi les nombreux tessons de récipients et os quelques fragments de vases à serpents qui étaient aussi décorés de grenouilles, lézards et tortues. Ceux-ci symbolisaient le renouvellement annuel de la nature. L'analyse des trouvailles indique un certain mélange dans la fosse avec du matériel d'habitat, les objets trouvés au fond de la fosse résultant essentiellement de l'élimination de déchets, avec entre autres les restes de vieux chevaux. L'éventail des espèces animales, et spécialement leur âge d'abattage, change dans les couches supérieures. A l'inverse des bovins qui sont tués à l'âge adulte, la plupart des os de porcs et de moutons proviennent de jeunes animaux. La préférence allait aux porcelets en train de téter et aux agneaux de lait. Le pourcentage de la volaille augmente de manière significative – les restes de 40 individus sont présents dans la fosse, y compris quelques chapons probables. Le pourcentage des animaux chassés augmente également – comme trouvaille exceptionnelle, une patte d'ours mangée probablement comme délicatesse lors de célébrations cultuelles.

Tierknochen aus dem Heiligtum der Größeren Götter Domnus und Domna in Sarmizegetusa (Rumänien)

von *Constanze Höpken / Manuel Fiedler*

Schlüsselwörter

Sarmizegetusa (Rumänien), Kultgrube, rituelle Deponierung, Tierknochen

Keywords

Sarmizegetusa (Romania), Ritual pit, ritual deposit, animal bones

Mots-clés

Sarmizegetusa (Roumanie), fosse rituelle, dépôt rituel, os d'animaux

Die *Colonia Ulpia Traiana Sarmizegetusa* war als Hauptort der dakischen Provinzen und Sitz des Finanzprokurators eine der bedeutendsten Siedlungen im unteren Donauraum[1]. Durch ihre Lage am Eisernen Tor Transilvaniens konnte hier der Zugang in das innerkarpatische Gebiet des heutigen Siebenbürgens von Süden kontrolliert werden. Die Wiederbesiedlung der dakischen Landschaft nach den Dakerkriegen nach 106 n. Chr. führte Bewohner aus den verschiedensten Gegenden des Reiches nach Sarmizegetusa, und entsprechend der unterschiedlichen Herkunft der Siedler wurden hier viele verschiedene Götter verehrt[2]. Innerhalb der Stadt und in der *area sacra* außerhalb der Stadt finden sich daher ganz unterschiedliche Kultbauten, beispielsweise italische Podiumstempel oder gallorömische Umgangstempel.

In der *area sacra* konnte östlich neben einem Podiumstempel, der Liber Pater geweiht war, zwischen 2004 und 2007 ein kleiner, an die Temenosmauer angesetzter Schrein detailliert ergraben werden[3]. Die *cella* maß in der ersten Bauphase nur etwa 2,5 x 3,5 m; vermutlich ging das Gebäude bei den Sarmateneinfällen 177/178 n. Chr. zugrunde. Bei der Wiedererrichtung wurde der Bau auf 6 x 6 m erweitert *(Abb. 1)* und am Eingang mit einer marmornen Säulenstellung betont. Laut einer Inschrift aus dieser zweiten Bauphase, die im Inneren der *cella* verstürzt aufgefunden wurde, war der Tempel den Göttern Domnus und Domna geweiht. Gaius Postumius Pansa, ein Zenturio der *legio III Italica*, löste mit der Errichtung des Gebäudes sein zuvor abgegebenes Versprechen gegenüber dem Götterpaar ein. Etwas rätselhaft bleibt, wer mit den beiden Gottheiten gemeint ist[4].

Im und um den Tempel fanden sich zahlreiche rituelle Deponierungen, die aus Keramikgefäßen, Lampen und Tierknochen bestanden. Die Deponierungen gehören verschiedenen Kategorien an, die auf unterschiedliche Intentionen zurückgehen[5]. So liegen vermutlich zwei Einweihungsopfer vor: Zum einen fand sich axial vor dem Kultgebäude eine Grube, in der man

1 Zu Sarmizegetusa: Piso 2000, 67–75; Eck / Lobüscher 2001, 263–266. Zur *area sacra*: Daicoviciu / Alicu 1981, 59–84; Rusu-Pescaru / Alicu 2000, *passim*; Schäfer 2003.
2 Schäfer 2007.
3 Vorberichte: Fiedler / Höpken 2010; Fiedler / Höpken 2013.
4 Siehe dazu Fiedler / Höpken 2007, 448–449 Anm. 24; Epigraphik-Datenbank Clauss/Slaby Nr. 59500075.
5 Fiedler / Höpken 2013.

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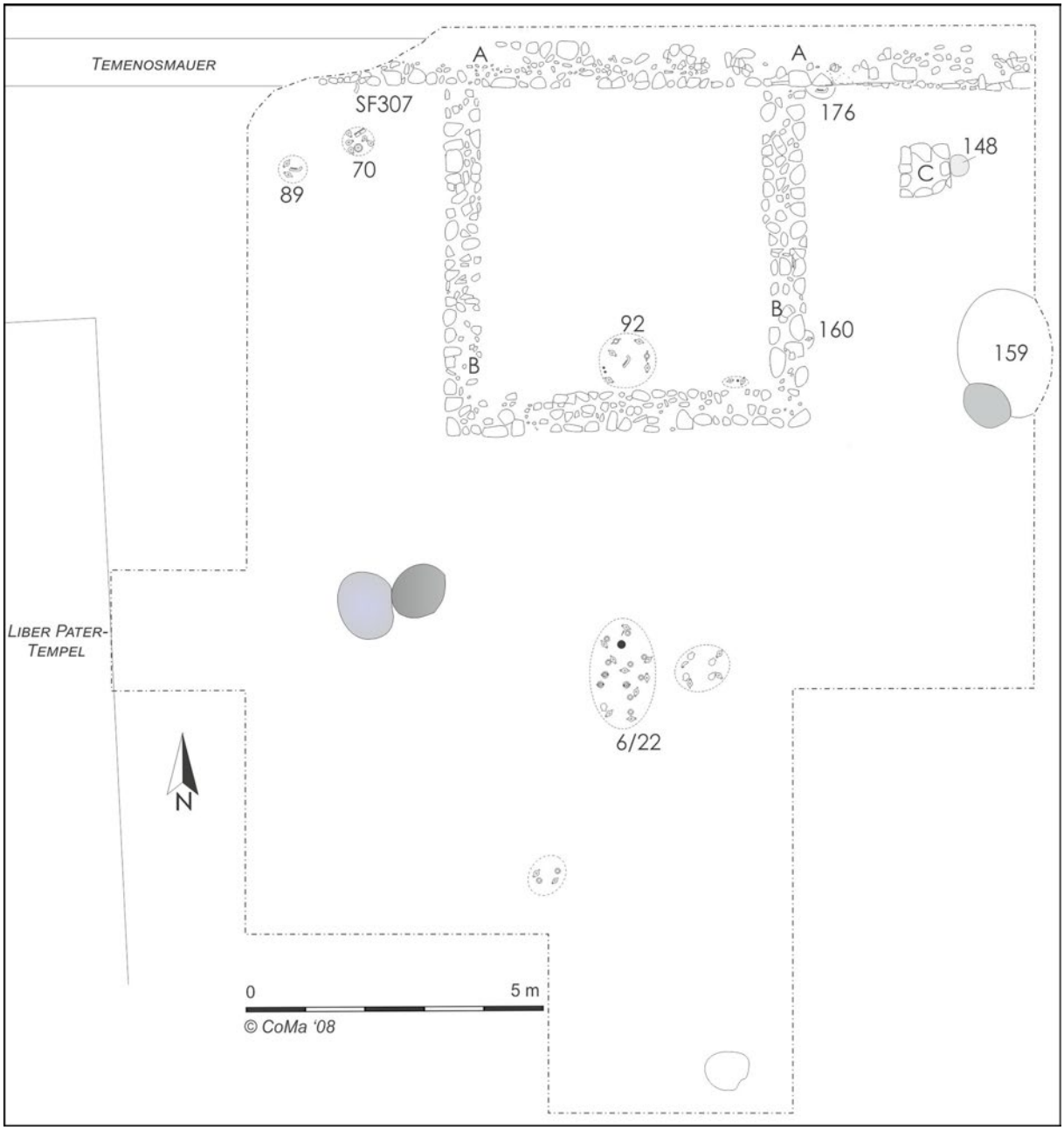
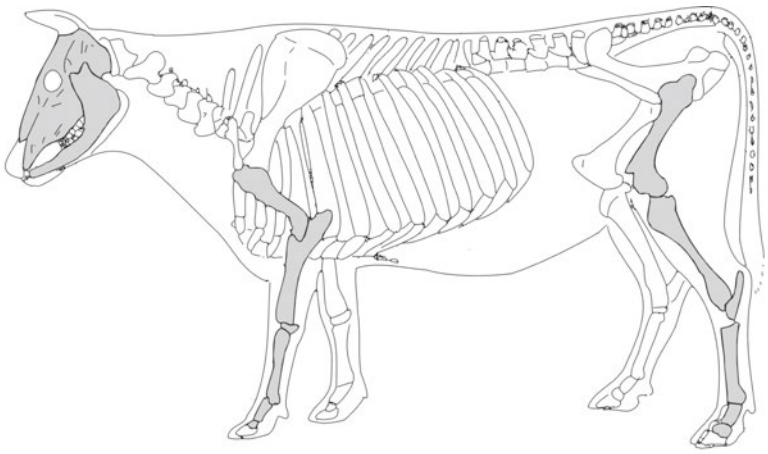


1 Plan des Tempels der Größeren Götter Domnus und Domna (Phase 2) in Sarmizegetusa mit relevanten Kontexten.

Paare von Bechern und Lampen sorgsam niedergelegt hatte (*Abb. 1*, Kontext 6), und dazu gehörte ein Nest kalzinierter Rinderknochen (*Abb. 1*, Kontext 22, vgl. *Abb. 2*). Den Tierknochenanalysen zufolge sind hier Reste eines unter zwei Jahre alten Rindes (oder mehrerer Individuen) überliefert. Ein zweiter, sehr ähnlicher Befund wurde mit einer Konzentration kalzinierter Rinderknochen direkt an einem Fundament für einen Altar oder ein Standbild entdeckt (*Abb. 1*, Kontext 148), die möglicherweise im Zusammenhang mit einem Einweihungsopfer für diese Struktur zu sehen ist.

Die meisten Deponierungen dürften allerdings während des laufenden Kultbetriebes niedergelegt worden sein. Hierzu zählen innerhalb und außerhalb des Gebäudes eingetiefte Gruben mit halbierten Tierunterkiefern und Lampen (*Abb. 1*, Kontext 92, vgl. *Abb. 3*). Auch entlang der Temenosmauer fanden sich Deponierungen einzelner Tierknochen, Räucherkelche, Lampen und Münzen (*Abb. 1*, bspw. Kontext 176 und Sonderfund 307). Möglicherweise gehört hierzu auch eine größere Grube am östlichen Rand der Grabungsfläche mit niedergelegtem Geschirr und Tierknochen (*Abb. 1*, Kontext 159).



2 Knochenkonzentration Kontext 148 (vgl. *Abb. 1,1*). Oben: markierte Körperpartien der überlieferten Knochen. Unten: die größten Fragmente des Fundkomplexes.

3 Aufeinanderliegend ein halbierter Unterkiefer eines Rindes mit abgetrenntem Flotzmaul, darunter halbierter Unterkiefer eines Schweins aus Deponierung 70 (vgl. *Abb. 1,6*).

Bislang konnte eine Analyse ausgewählter Knochenfunde insbesondere aus den Grabungen von 2005 und 2007 erfolgen; insgesamt wurden knapp über 1000 Knochenfragmente von Michael Hochmuth (DAI Berlin, EA) untersucht. Über 60 % waren vor allem wegen des Fragmentierungsgrades nicht bestimmbar. Damit kann ein erster – vorläufiger – Überblick gegeben werden.

Knochenfunde 2005

2005	gesamt n	gesamt %		Innenraum des Tempels		Umfeld ohne Innenraum des Tempels	
Rind	49	11 %		8	4 %	41	16 %
Schwein	67	15 %		28	15 %	39	15 %
Schaf und Ziege	91	21 %		43	23 %	48	19 %
Hund	1			1	0,5 %	0	
Huhn	70	16 %		47	25 %	23	9 %
Pferd	1			0		1	0,5 %
Hase	1			0		1	0,5 %
Singvogel	1			0		1	0,5 %
Cyprinide	1			1	0,5 %	0	
Unbest.	162	37 %		59	32 %	103	40 %
ges.	444	100 %		187	100 %	227	100 %

Tab. 1 Absolute und prozentuale Anteile der 2005 geborgenen Knochen.

Insgesamt wurden 444 Knochen(-fragmente) aus dem Kultbau und seinem direkten Umfeld untersucht[6], die von Rind, Schwein, Schaf und Ziege stammen. Jeweils nur mit einzelnen oder wenigen Knochen sind Fisch, Singvogel, Hase, Hund und Pferd nachgewiesen.

Von den 444 Knochen bleiben 162 unbestimmt (= 37 %). Unter den bestimmbaren sind mit 21 % Schaf und Ziege am häufigsten (n = 91), gefolgt von Huhn mit 16 % (n = 70), Schwein mit 15 % (n = 67) und Rind mit 11 % (n = 49). Das Verhältnis der im Kultbau gefundenen Knochen[7] verschiebt sich zugunsten der Hühnerknochen und zuungunsten der Rinderknochen: Huhn liegt hier bei 25 % und Rind bei 4 %. Die Anteile von Schaf und Ziege sowie Schwein bleiben etwa gleich.

Eine Scherbenkonzentration (*Abb. 1*, Kontext 50)[8], die vermutlich Geschirr von Kultfeiern im Heiligtum beinhaltet, enthielt etwa gleichviele Reste von Schaf/Ziege (n = 15) sowie Schwein (n = 15) und Huhn (n = 14) bei nur wenigen Rinderknochenfragmenten (n = 6). Insgesamt sind hier 83 unbestimmbare Fragmente überliefert, die einen hohen Fragmentierungsgrad anzeigen. Außergewöhnlich ist ein Knochen von einem Singvogel.

Knochenfunde 2007

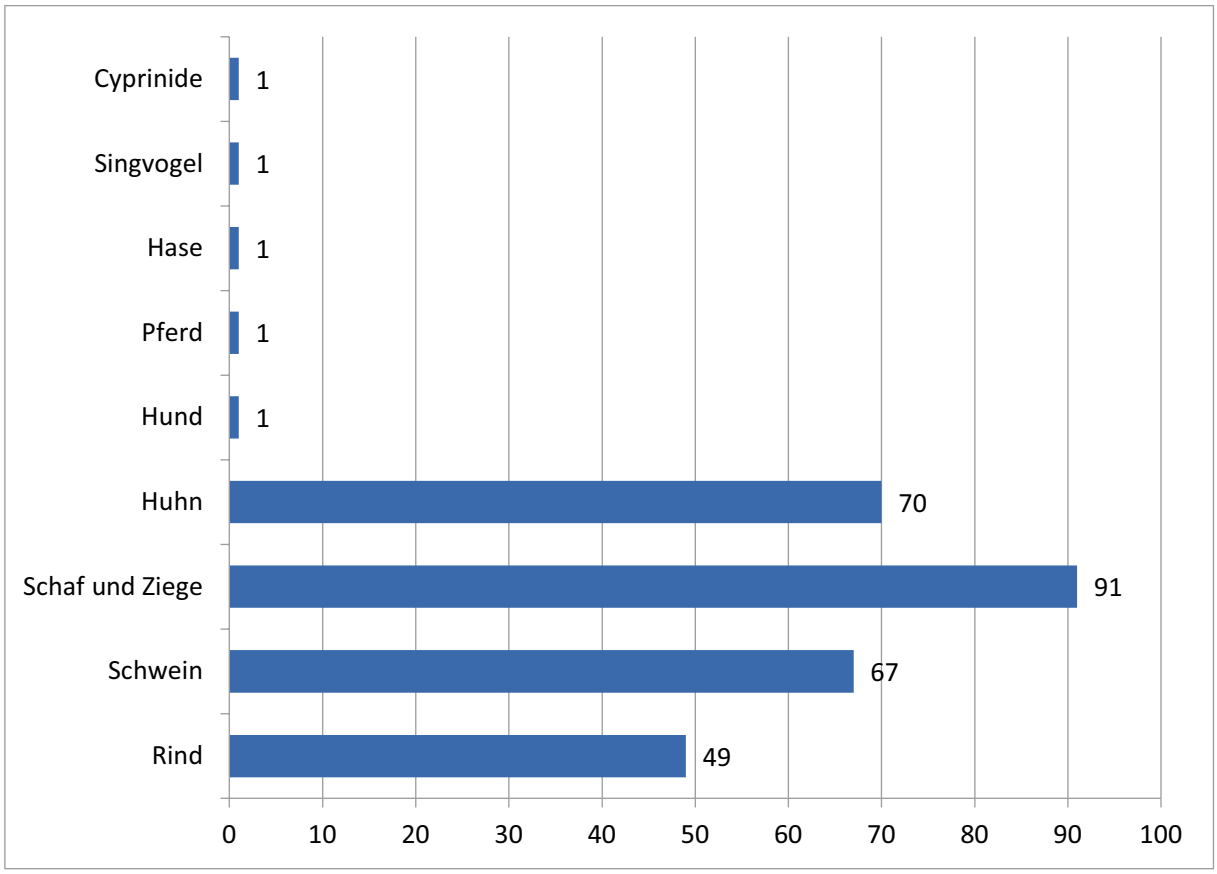
2007	gesamt n	gesamt %		Kontext 148		übrige ohne 148	
Rind	56	9 %		21	6 %	35	16 %
Schwein	48	8 %		1		47	22 %
Schaf und Ziege	23	4 %		1		22	10 %
Hund	3			0		3	1 %
Huhn	6	1 %		0		6	3 %
Wildschwein	1			0		1	
Unbest.	452	77 %		353	94 %	99	47 %
ges.	589	100 %		386	100 %	203	100 %

Tab. 2 Absolute und prozentuale Anteile der 2007 geborgenen Knochen.

6 Kontextnummern 50, 50/53, 50/54, 54, 55, 56, 62, 63, 64, 65, 68, 69, 70, 71, 73, 75, 80, 82, 86, 87, 90, 91, 92, 93, 94.

7 Kontextnummern 56, 62, 64, 82, 92.

8 Kontextnummern 50 mit 50/53 und 50/54.

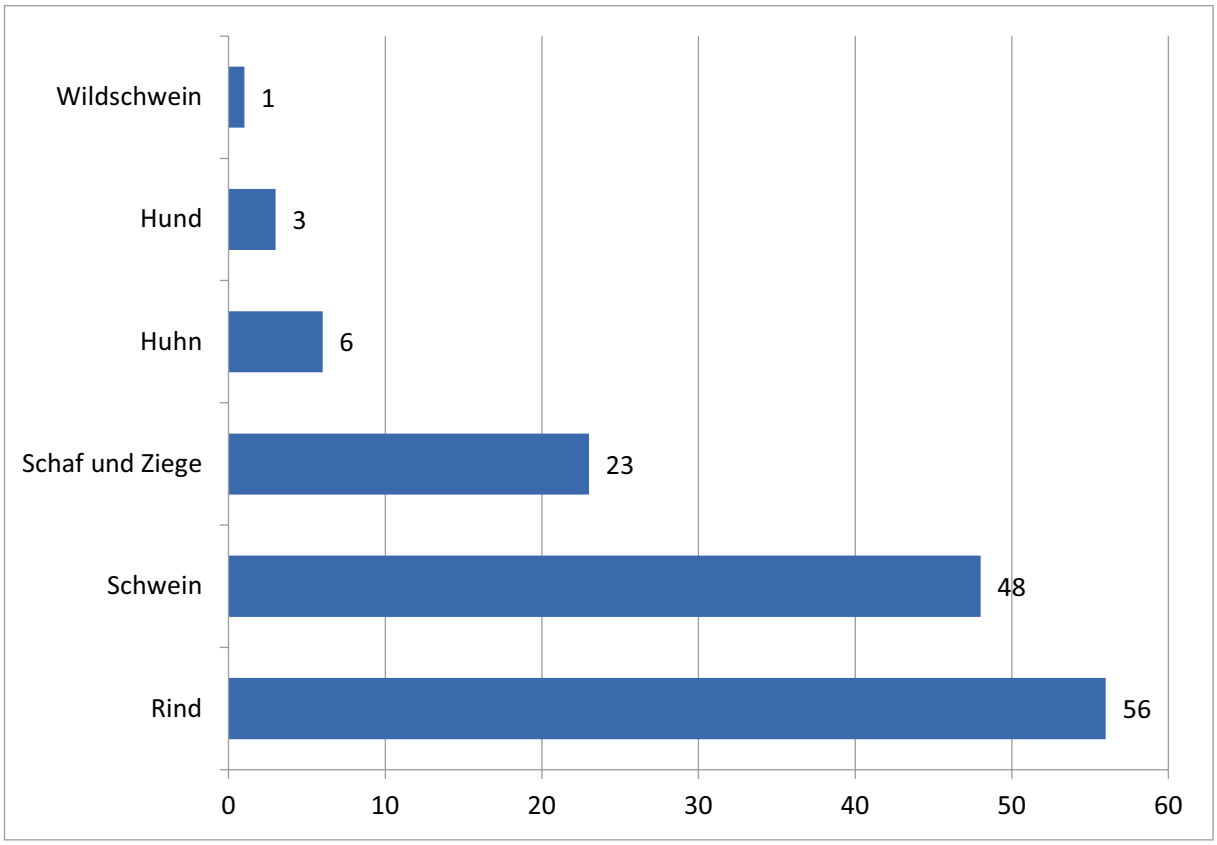


Diagr. 1 Artenverteilung der 2005 geborgenen, bestimmbaren Knochen (n = 282).

Die Grabungen 2007 erstreckten sich östlich des Kultgebäudes in einem Bereich, in den u. a. ein Fundament für einen Altar oder Standbild nachgewiesen werden konnte. Untersucht wurden 589 Knochen(-fragmente)[9], die recht gut erhalten, aber oft sehr klein fragmentiert und kalziniert waren. Daher blieben 77 % unbestimmt.

Zwar überwiegt in der Statistik der große Anteil an Rinderknochen gegenüber Schwein und Schaf/Ziege, allerdings wird das Knochenspektrum von Funden des mutmaßlichen Einweihungsopfers an dem erwähnten Fundament dominiert. Hier lagen Knochensplitter dicht konzentriert in einer Grube, die mit wenigen Ausnahmen kalziniert waren (*Abb. 1*, Kontext 148). Von 386 geborgenen Knochenfragmenten konnten 23 bestimmt werden. Davon stammen 21 von einem jungen, unter zwei Jahre alten Rind. Vor allem Fragmente fleischarmer Regionen des Skeletts, Reste vom Schädel und der Extremitäten, gelangten in die Grube, während die meisten fleischtragenden Partien nicht nachgewiesen werden konnten. Ferner kamen noch jeweils ein Fragment eines Hausschweins (Phalanx) und von Schaf/Ziege (Unterkiefer-Prämolar) hinzu, die aber unverbrannt sind. Betrachtet man nun die übrigen, 2007 geborgenen Knochen, zeigt sich, dass Schwein überwiegt, aber Huhn und Schaf/Ziege immer noch unter dem Anteil vom Rind liegen.

9 Kontextnummern 60, 128, 129, 130, 140, 141, 142, 146, 147, 151, 152, 155, 156, 158, 159, 160, 162, 164, 170, 171, 172, 173, 176, 179 sowie 148.



Diagr. 2 Artenverteilung der 2007 geborgenen, bestimmbaren Knochen (n = 137).

Allgemeine Bemerkungen zu den Tierknochen in und um das Heiligtum

Das Spektrum der bislang analysierten Knochenfunde aus dem Heiligtum zeigt insgesamt eine Artenpräsenz, die zunächst auch in Siedlungen nicht ungewöhnlich wäre. Für kultische Kontexte charakteristische Phänomene wie beispielsweise besonders hohe Anteile von Hühnerknochen[10] treten in einigen Kontexten in Erscheinung. Besonders deutlich wird dies mit dem Knochenspektrum aus dem Tempelinneren und aus einem Komplex (Kontext 50), der vermutlich aus Resten von Kultfeiern besteht: Hier überwiegen die Hühnerknochen deutlich gegenüber den Rinderknochen.

Auffällig ist der recht hohe Anteil von Rinderknochen im Gesamtspektrum[11]. Immer wieder sind halbierte Rinder-Unterkiefer und -Schulterblätter belegt, die geräuchert ein preiswertes Nahrungsmittel darstellten[12]. Insbesondere halbierte Rinderunterkiefer, denen das Flotzmaul abgetrennt war[13], finden sich in Deponierungen mit Lampen und/oder Räucherkelchen (*Abb. 1*, Kontexte 70, 89, 92, 176). Die Knochen lagen meist zuunterst; auf sie waren weitere Gaben abgestellt. In einem Fall (*Abb. 1*, Kontext 70) waren je ein Unterkiefer vom Rind und vom Schwein gegengleich aufeinander gelegt. Bei einer anderen Deponierung fanden sich im Zusammenhang mit einem zerscherbten Räucherkelch je ein halbierter Schweine- und ein halbierter Schaf-/Ziegenunterkiefer (*Abb. 1*, Kontext 176). Sie belegen, dass die Praxis nicht auf Rinderunterkiefer beschränkt war, sondern die Deponierung generell aus einer Speisebeiga-

10 Deschler-Erb 2015, 113.
11 Im Vergleich mit anderen Kultkontexten ein eher ungewöhnliches Phänomen: vgl. Deschler-Erb 2015, 110; 116; 128.
12 Berke 1995; Deschler-Erb 2006. Sie sind auch in Siedlungskontexten in Dakien vielfach belegt, wie eigene Grabungen in *Porolissum* und am Dakischen Ostlimes gezeigt haben.
13 Zum Flotzmaul, das in der römischen Küche als Delikatesse galt, siehe Peters 1998, 260.

be bestand. Auch andere Teile der Skelette legte man sorgfältig, bspw. am Fundament der Mauern nieder. Hierzu zählen deponierte Schädelteile mit Hornzapfen[14]. Die übrigen Teile des Tiers dürften wohl anderweitig ‚genutzt', d. h. also wohl bei den – durch das Geschirr nachgewiesenen – Feiern verspeist worden sein.

Auf die Bedeutung des Rindes im Ritual verweisen insbesondere auch die beiden Depot-Nester der kalzinierten Rinderknochen: Da es in unmittelbarer Nähe an Brandspuren und Holzkohleresten fehlte, müssen die Knochen jeweils außerhalb der Gruben Feuerkontakt gehabt haben, die zur Kalzinierung führte. Danach hatte man Knochen und Brandreste sorgfältig voneinander getrennt und die Knochen in den Gruben gleichsam ‚bestattet'. Dem archäologischen Befund lässt sich folglich ein aufwendiger Vorgang vor deren Niederlegung ablesen: Von der Tötung, dem vermutlichen Verspeisen fleischhaltiger Partien, dem Verbrennen der Überreste, der sorgfältigen Trennung von Brandresten und kalzinierter Knochen bis hin zur Überführung der Knochen in die vorbereiteten Gruben, also der endgültigen Darreichung der Gabe an das Götterpaar.

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14 Siehe dazu auch Deschler-Erb 2015, 117; 128.

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Abbildungsnachweise

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Zusammenfassung

Im Bereich der *area sacra* der *Colonia Ulpia Traiana Sarmizegetusa* in Dakien wurde ein kleines Heiligtum ausgegraben, das einem nicht näher bekannten Götterpaar, den Größeren Göttern Domnus und Domna, geweiht war. Wie eine Inschrift verrät, errichtete ein Zenturio der Legio III Italica, Caius Postumius Pansa, das Gebäude. In und um den Tempel herum konnten zahlreiche Gruben, viele davon mit Tierknochen, aufgedeckt werden. Das Tierartenspektrum der Knochenfunde aus dem Heiligtum unterscheidet sich nicht von dem aus Siedlungen. Charakteristische Phänomene ritueller Kontexte, wie z. B. eine hohe Anzahl von Hühnerknochen, treten nur in einigen Befunden auf, insbesondere in Gruben im Inneren des Tempels und in einem Komplex (Kontext 50), der vermutlich aus Überresten von Kultzeremonien besteht. Ungewöhnlich für einen Ritualkomplex erscheint der recht hohe Anteil an Rinderknochen: Halbierte Rinderunterkiefer und -schulterblätter waren vermutlich Überreste von Räucherwerk. Insbesondere halbierte Unterkiefer von Rindern finden sich in den Gruben zusammen mit Lampen und/oder Räucherkelchen. Andere Teile der Skelette wie Schädelteile mit Hörnern wurden sorgfältig an den Fundamenten der Mauern abgelegt. Die übrigen Teile des Tieres wurden möglicherweise bei rituellen Feiern verwendet und anschließend verzehrt. Insbesondere zwei Gruben mit verbrannten Rinderknochen weisen auf die Bedeutung des Rinderritus hin: Da es keine Brandspuren und Holzkohlereste in der Nähe gab, müssen die Knochen außerhalb der Gruben mit Feuer in Berührung gekommen sein. Erst nachdem die Knochen sorgfältig gereinigt worden waren, wurden sie in den Gruben „bestattet“. Die archäologischen Befunde können daher als Spuren eines aufwendigen Prozesses gelesen werden: von der Tötung des Opfertieres über den wahrscheinlichen Verzehr des Fleisches, dem Verbrennen der Überreste, der sorgfältigen Trennung von Brandresten und kalzinierten Knochen bis zur Überführung der Knochen in die vorbereiteten Gruben, als abschließende Übergabe des Opfers an das Götterpaar.

Abstract

Animal bones from the sanctuary of the Greater gods Domnus and Domna in Sarmizegetusa (Romania)

In the *area sacra* of *Colonia Ulpia Traiana Sarmizegetusa* in Dacia a little shrine was excavated which was dedicated to the Greater Gods Domnus and Domna. The temple was set up by a centurion of the *legio III Italica* named Gaius Postumius Pansa as an inscription reveals. In and around the temple many deposits were found of which several contained animal bones. The animal species spectrum of bone finds from the sanctuary in general would not be unusual in settlements. Characteristic phenomena of ritual contexts, such as high numbers of chicken bones, appear in some contexts, especially in deposits inside of the temple and in a complex (context 50), which presumably consists of remnants of cult ceremonies. Unusual for a ritual complex seems the rather high proportion of bovine bone: halved cattle jaws and shoulder blades were probably remains of cheap smoked food. In particular, halved bovine mandibles can be found in deposits with lamps and/or incense burners. Other parts of the skeletons as skull parts with horns were carefully laid down at the foundations of the walls. The remaining parts of the animal may well have been used in celebrations and were eaten afterwards. In particular, two deposits of burned bovine bones also point to the importance of bovine ritual: Since there were no burn marks and charcoal remains in the vicinity, the bones must have had contact with fire outside of the pits. Only after that bones had been carefully selected and were 'buried' in the pits. The archaeological findings can therefore be read as an elaborate process before their deposition, from the killing, the probable eating of the meat, burning of the remains, the careful separation of fire debris and calcined bone to the transfer of the bones in the prepared pits, as a final presentation of the gift to the pair of gods.

Résumé

Os d'animaux du sanctuaire des dieux majeurs Domnus et Domna à Sarmizegetusa (Roumanie)

Dans l'*area sacra* de *Colonia Ulpia Traiana Sarmizgetusa* en Dacie, un petit sanctuaire dédié aux dieux majeurs Domnus et Domna a été fouillé. Ainsi que le révèle une inscription, le temple fut édifié par un centurion du nom de Gaius Postumius Pansa qui appartenait à la *legio III Italica*. De nombreux dépôts, dont certains contenaient des os d'animaux, furent trouvés à l'intérieur et autour du temple. Le panel des espèces animales identifiées dans le sanctuaire ne diffère en rien de celles que l'on trouverait habituellement dans des habitations. Certaines caractéristiques de contextes rituels, comme le nombre élevé d'os de volaille, apparaissent spécialement dans des dépôts à l'intérieur du temple et dans un ensemble (contexte 50) constitué vraisemblablement des restes de cérémonies cultuelles. Le pourcentage plutôt élevé des os de bovins semble par contre inhabituel pour un ensemble rituel: les mâchoires de bovins coupées en deux et les omoplates étaient probablement les restes d'aliments fumés bon marché. En particulier, des mandibules de bovins coupées en deux peuvent se retrouver dans certains dépôts avec des lampes et/ou des encensoirs. D'autres éléments du squelette tels que les parties du crâne avec cornes étaient soigneusement déposés contre les fondations des murs. Les parties restantes de l'animal étaient peut-être utilisées lors des célébrations et consommées par la suite. Deux dépôts d'ossements bovins brûlés révèlent l'importance du rituel bovin: En l'absence de toute marque de feu et de charbons à proximité, les os ont dû être exposés au feu à l'extérieur des fosses. Et c'est après avoir été méticuleusement nettoyés que les os furent « enterrés » dans les fosses. Les trouvailles archéologiques peuvent être décodées comme un processus élaboré avant leur dépôt, depuis l'abattage, la consommation probable de la viande, la combustion des restes, la séparation méticuleuse des débris du feu et des os calcinés jusqu'au transfert des os dans les fosses préparées à cet effet, présentation finale de l'offrande à un couple divin.

Choice beef for the worshippers – the cattle record from the sanctuary of Jupiter Heliopolitanus at Carnuntum (Austria)

by *Günther Karl Kunst / Erika Gál / Verena Gassner*

Keywords

Feasting, Roman period, animal bones, oriental religion, Lower Austria

Schlüsselwörter

Feierlichkeiten, römische Zeit, Tierknochen, orientalische Religion, Niederösterreich

Mots-clés

festin, période romaine, os d'animaux, religion orientale, Basse-Autriche

Introduction

Between 1978 and 1991, in the course of extensive rescue excavations made necessary by development of the modern village of Bad Deutsch-Altenburg, large areas of the eastern *canabae legionis* of Carnuntum (Lower Austria, communities of Petronell-Carnuntum and Deutsch-Altenburg, *fig. 1*), the civil settlement surrounding the legionary fortress, were investigated archaeologically. The area investigated was over 60 000 m², representing about 6 % of the total *canabae* area which was estimated to be 100 ha according to prospection data[1]. The *canabae* represent one of the two civil settlement cores of Carnuntum, the *municipium* or civil town in the eastern part being the second. In the north-east of the *canabae*, in the so-called Mühläcker (Millfields) area, two sanctuaries were discovered. A smaller one, possibly dedicated to Liber and Libera, and, 80 m to the east, a larger one, identified as the sanctuary of Jupiter Optimus Maximus Heliopolitanus[2]. This latter sanctuary, which forms the subject of the present study, was investigated from 1978 until 1982. It is also sometimes referred to as the sanctuary of Syrian or oriental deities, or of the Heliopolitan Triad, and may represent the most important discovery of all of the excavations in the *canabae* area. At least north of the Alps, no other sanctuaries dedicated to Jupiter Heliopolitanus have been found so far[3], although inscriptions are known from various places[4]. Baalbek or Roman *Heliopolis*, where the veneration of Jupiter Heliopolitanus originates from, is world-famous for the colossal Temple of Jupiter and the strict axiality of its main sanctuary[5]. In the Roman Imperial period, this cult apparently spread quickly into other areas of the empire, namely into larger harbour towns of Roman Italy and

1 Doneus et al. 2013.
2 Eschbaumer et al. 2004; Gassner et al. 2011.
3 van Ess / Rheidt 2014.
4 Gassner et al. 2014.
5 Lohmann 2014.

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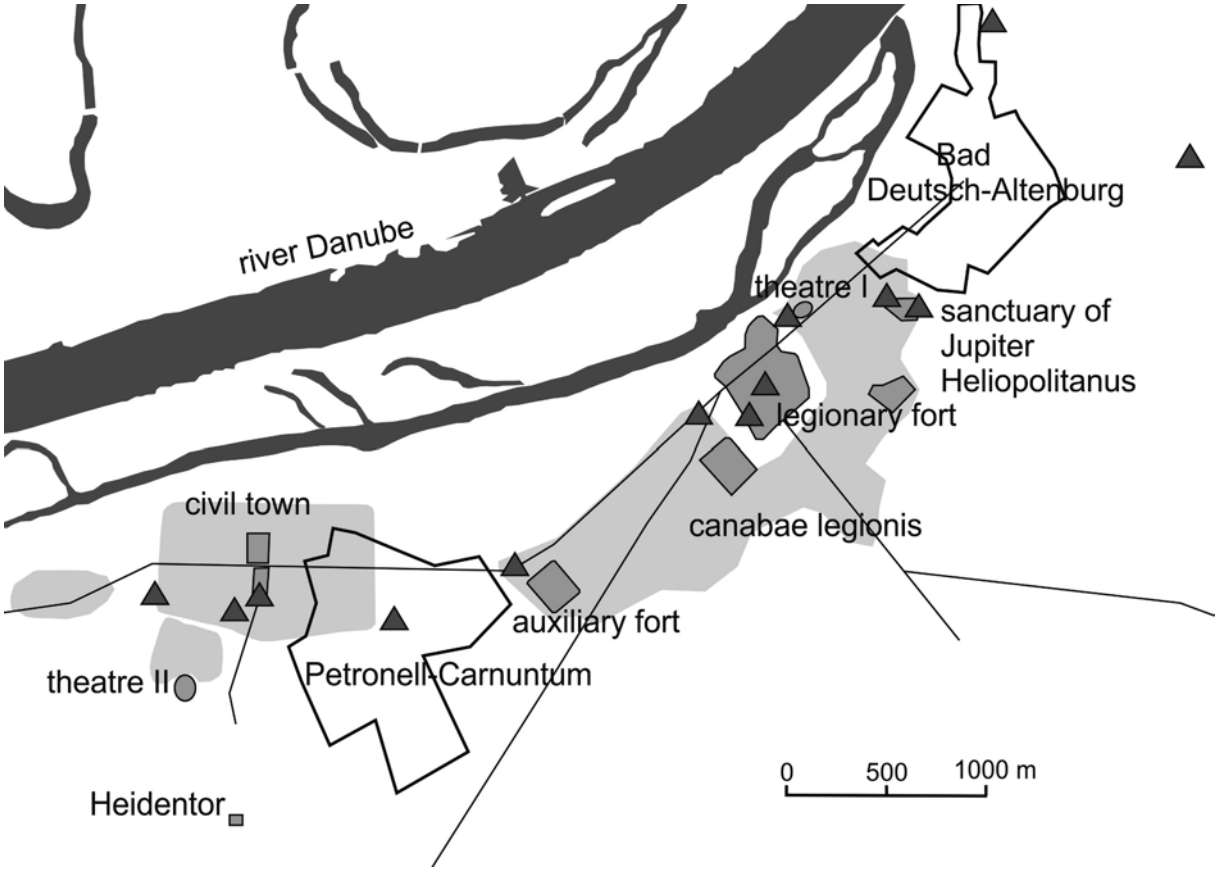


1 Generalised map of the archaeological area of Carnuntum; dark = water bodies; light grey = Roman settlement area; dark grey = major excavated structures; triangles = sanctuaries; fine lines = Roman roads; strong lines = limits of recent settlements (partly re-drawn after Gugl / Kremer 2010, adapted from Gál / Kunst 2018).

into areas with a strong military presence, such as Pannonia[6].

At the Carnuntum-Mühläcker sanctuary, the identification of Jupiter Heliopolitanus as the main deity is based on epigraphic evidence from an altar fragment and from *tabulae ansatae*, which all derive from destruction layers attributed to the last phase of the sanctuary's use. For the earlier phases, the evidence for Jupiter Heliopolitanus is scanty and is limited to vases with snake-applications which also appear in the later periods of the sanctuary[7]. A second representative of the so-called Heliopolitan Triad, Venus Victrix, may be evidenced by statue fragments found in one of the pits (G7), inside layers associated with the re-organisation of the sanctuary (AD 170/180–220/230). Snake-decorated vessels, or vessels with appliques of vine branches or other 'chthonian' elements like lizards and frogs, point at the veneration of a second male deity, which is tentatively identified as Bacchus. Finds of sherds of snake- or grape-decorated vessels are already quite frequent in the early horizons of the sanctuary[8]. At Baalbek, Bacchus, the third element of the Heliopolitan Triad, was probably venerated inside a separate temple in the south of the Jupiter sanctuary[9]. At Carnuntum, it is possible that the nearby so-called sanctuary of Liber and Libera was in fact dedicated to a Bacchus-like deity[10]. According to widespread agreement among scholars, oriental religions in the Roman Empire, including Mithraeism, were not simply adopted as such but became largely modified and adapted to local traditions in a syncretistic way. Therefore, deviant practices, as referred to Baalbek, can be expected for Carnuntum as well[11].

The Carnuntine sanctuary was obviously much smaller and more simply designed than its counterpart at Baalbek, regarding the size of the temples, the general spatial extension of the compound, and the complexity

6 Gassner et al. 2014.
7 Gassner 2004.
8 Eschbaumer et al. 2004, fig. 20; Gassner 2004.
9 Lohmann 2014.
10 Gassner et al. 2014.
11 Gassner 2013.

of its layout. However, there are common features present in both sanctuaries: the veneration of the Heliopolitan Triad, the presence of a large bath inside the sanctuary, and the installation of long rows of benches inside the halls, which in both cases has led to their interpretation as banquet halls.

Excavation and geophysical prospection

Surrounded by a polygonal enclosure wall, the sanctuary occupied an area of almost 0.8 ha during its largest extension, measuring about 110 m from north to south and 90 m from west to east *(fig. 2)*. It was situated 600 m to the north-east of the legionary fortress, and 500 m to the east of the military amphitheatre. A detailed topography of the *canabae*, based on excavations and aerial photographs, presented by Doneus et al.[12] clearly indicates the peripheral position of the sanctuary of Jupiter Heliopolitanus within the densely settled agglomeration of the *canabae*. Nevertheless, it certainly appeared as a dominant landmark of the local landscape. Today, the western settlement margin of the village of Bad Deutsch-Altenburg runs across the former excavation, which was stopped in this area in 1983: the remaining lots were finally declared as cultural heritage, leaving western and central parts of the sanctuary intact, but also unexplored. To close this gap, geophysical prospection using ground-penetrating radar was applied across these remaining surfaces in 2012, yielding important results, notably the foundations of the probable central temple[13].

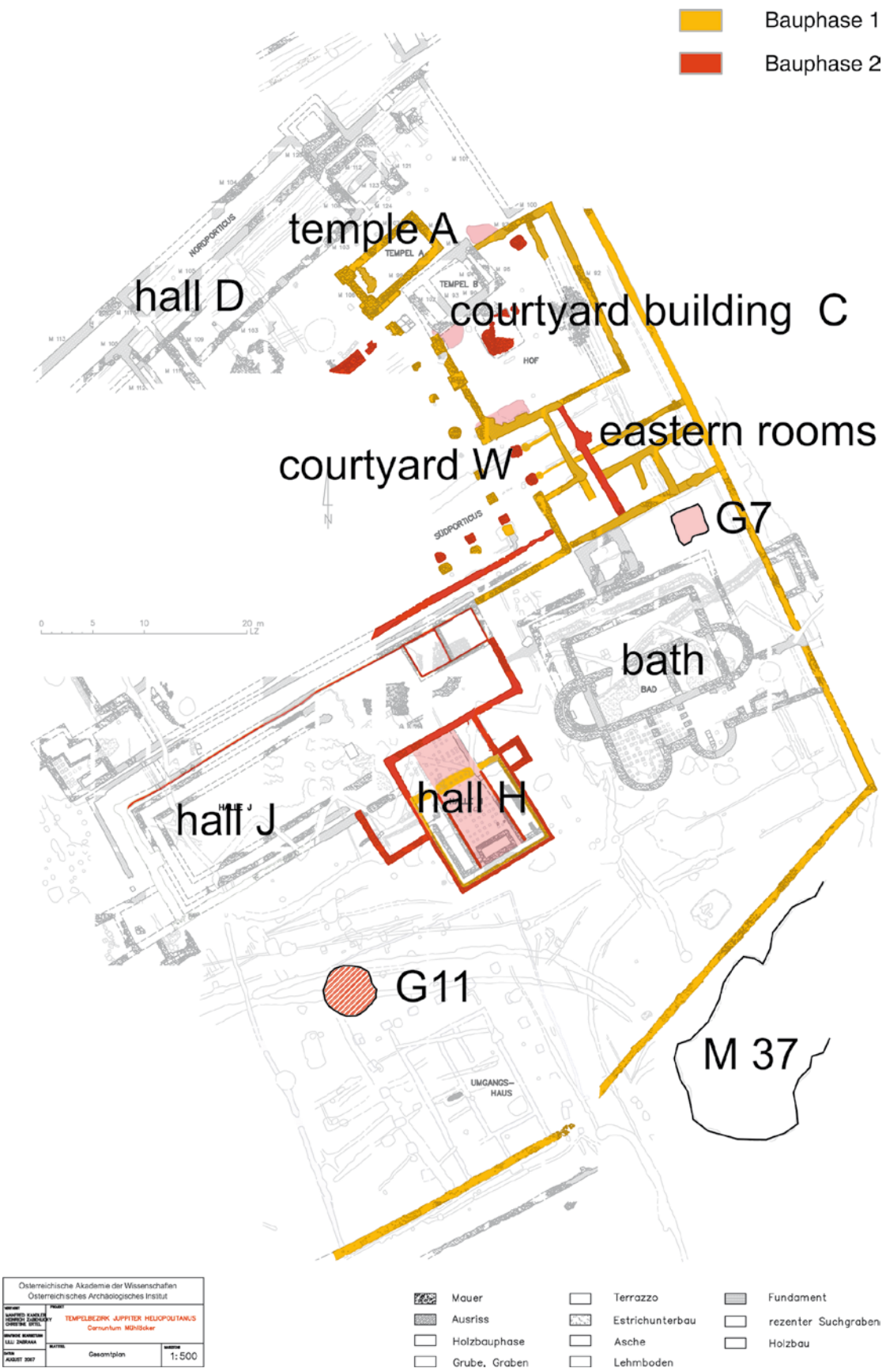
Generally, it can be said that the excavations were carried out by the standards of their time, as far as documentation is concerned. Artificial layers and section profiles were used throughout, and stratigraphic affiliation of finds has often to be constructed afterwards, from the drawings. However, both animal bones and artifacts were collected carefully by squares and depths, and often by layers. No sieving and very little sampling for botanic remains was carried out.

The ground plan of the sanctuary[14], as far as evidenced by the excavations, can be described as an array of cult-related buildings arranged around a central, trapezoidal courtyard (W), which was flanked by porticos to the east and south. Starting in the north and running clockwise to the south, around the courtyard, these buildings comprise hall D, two simple, small temples (A and B), in the east, a complex with a courtyard building (C) and interconnected rooms flanked by an exedra facing the courtyard, a small bath complex (F) and two banquet halls (H and J) in the south *(fig. 2)*. Most of these buildings were represented by important parts of the lower masonry and basements. None of them could be preserved or reconstructed after the excavations were finished, nor remains anything visible as an aboveground feature to this day.

The western part was not excavated, but from the geophysical prospection carried out, it became clear that the central courtyard, measuring a total of 22.5 x 31.5 m, was, at least finally, flanked by porticos on all sides. Most important, a large building obviously representing a temple (M) with a surrounding structure (portico or encirclement N), was situated to the west of it. Conceivably, this building represented the main temple of the sanctuary and was dedicated to Jupiter[15]. The authors suggest a possible similarity to the Apollo temple at Faimingen (Germany). Without excavations, it is not possible to integrate the structures revealed by the survey into the stratigraphic scheme worked out along the evidence from the eastern part of the sanctuary.

To summarise the evidence, all major buildings were arranged around, and accessible from, the central courtyard. To the south, a larger area inside the precinct, adjacent to the banquet halls and the bath, remained open space. The principal entrance of the sanctuary cannot be defined easily, it was tentatively localised in the northeast. Apart from that, it is likely that the central courtyard and the putative main temple were accessible from outside only via one of the minor building complexes abutting the wall[16]. This, in fact, may have been one important aspect of the religious activities.

12 Doneus et al. 2013.
13 Gassner / Steigberger 2013.
14 See e. g. Gassner 2013; Gassner / Steigberger 2013 for latest detailed versions.
15 Gassner / Steigberger 2013.
16 Gassner / Steigberger 2013.



2 Site map of the sanctuary, with some of the major features indicated; only excavated structures shown; yellow = phase 2.1.; red = phase 2.2. (source of map: Institute for Study of Ancient Culture, Austrian Academy of Sciences).

Stratigraphy

The analysis of the stratigraphy and chronology of the sanctuary, with a focus on the eastern area, was based primarily on the pottery, namely on the spectra of terra sigillata, on the fragments of wall paintings and on a careful re-reading of the field records, while coins played a minor role[17]. Accordingly, the following phases can be discerned:

- Phase 1.: During the Flavian dynasty (AD 69–96), traces of wooden architecture, i. e. small ditches, were variously observed. Definite wooden houses, interpreted as belonging to the early *canabae*, could be documented in the southern part. In the north under the later sanctuary, remains of halls, constructed in wood, were observed. They already follow the groundplan of the later sanctuary and together with the remains of a shrine under the later court-area C very probably represent the first phase of the sanctuary[18]. They were broken down at the turn of the 1st and 2nd century AD, to be followed by an interruption of settlement activity.
- Phase 2.1.: The definite beginning of the sanctuary can be attributed to the Trajanic-Hadrianic period (AD 98–138), possibly towards the end of the Trajanic reign (98–117), as indicated by rooftiles indicating the presence of a certain legion. Temple A in the east, the adjacent courtyard complex C with the interconnected rooms farther south, and the predecessor of the banquet hall H together with the adjacent porticos, were established. The principal concept of the sanctuary, cultic buildings arranged around a trapezoidal courtyard, already becomes apparent at this early stage.
- Phase 2.2.: This phase brought about local changes. These comprised reconstructions in the northern area, in the room complex in the east, where an exedra was added, in hall H in the south, where surrounding podia indicate a banquet hall, and a widening of the southern portico.

An important event in the history of the sanctuary occurred towards the end of the 2nd or early in the 3rd century AD: Many of the standing structures of phases 2.1. and 2.2., notably temple A and the courtyard complex C, were broken down. The resultant rubble was either levelled or disposed of into pits. Thus, larger areas could be prepared as buildings lots for new constructions.

This important re-organisation stage must have occurred after 170/180 AD or in the Severan period. Although it could theoretically be connected with the Marcomannic Wars (AD 166–180), the stratigraphy and the archaeological evidence indicate planned actions in the course of a deliberate abandonment, rather than a catastrophic event[19]. It was also either during these organised destruction processes, or in the course of the re-organisation of the sanctuary, that important animal bone assemblages were generated. Obviously, these two stages are causally linked and therefore cannot be clearly separated from one another.

- Phase 2.3.: During this phase, the sanctuary reached its heyday and its largest extension. Several buildings were newly erected or largely reconstructed: the small temple B just beside the destroyed temple A, the bath in the south-east, and altogether three complexes interpreted as cult halls in the north and south-west (D, H, J with benches). The central courtyard was maintained. Because occupation layers are not well preserved, the end of the buildings is difficult to establish. It may have been caused by an earthquake which occurred in the middle of the 4th century AD and was also documented elswhere in Carnuntum[20]. Other than the horizons connected to the end of phase 2.2., implying intentional demolition, the final layers of the sanctuary appear to be *in situ* destruction layers. It is unclear if the area was still used for ritual activities by this time.

17 Eschbaumer et al. 2004; Gassner et al. 2011.
18 Gassner et al. 2013.
19 Steigberger / Tober 2013.
20 Konecny et al. 2019.

Pits and levellings – contexts

In the course of the destruction event at the end of phase 2.2. and the re-organisation or new establishment of the sanctuary at the beginning of phase 2.3., the area saw important interventions into the soil. These processes were responsible for accumulations of pottery, building rubble and other types of artifacts and also, in some cases, of animal remains[21]. Waste parts were either dumped into pits or basements, or levelled horizontally. For instance, a series of pits and former basements of altars or statues in the north-eastern part contained very special assemblages, indicating both organised disposal and re-use of building materials. Some of these were probably generated by teams of masons, who would reshape building blocks and left chipped-off elements behind. Other pits contained related fragments of wall plaster and/or wall paintings, which allowed for the definition of recurrent type groups. Another category of pits was obviously linked to ritual activities. Its main representatives are pit G7 in square C/35 and pit G11 in square L/29. Because these two contexts yielded the most remarkable animal bone samples of the whole sanctuary, they will be introduced in more detail. Both were filled up during the re-organisation phase and are situated in the southern part of the sanctuary, on the backside of buildings surrounding the central courtyard, but still inside the *temenos* wall.

Pit G7 in square C/35 is a roughly rectangular (3.00 x 3.25 m) pit[22], situated just south of the eastern room complex, possibly close to one entrance, and only a few meters away from the wall. Because its sides go down perpendicularly, G7 could also be categorised as a shaft and may have originally represented a well. In 1979, excavations were stopped at a depth of 1.80 m before the bottom was reached. The fill was described as rather homogenous and loamy with burnt rubble, however pictures show different layers which gently slope towards the centre. On its top, G7 was sealed by a levelling layer containing brick and mortar fragments, with a thickness of up to 0.20 m. It probably resulted from the destruction of the eastern buildings and covered most of this area[23]. Matching potsherds from different depths make is seem likely that the fill was brought in during a single event. The terra sigillata, dominated by beakers, comprise freshly broken sherds, while reworked specimens are almost absent. They cover a time span of about AD 180–230. Coins indicate a *terminus post quem* of AD 175/176. Statue fragments, most notably the head of a probable Venus Victrix, and a fragment of a small voodoo doll[24] range among the more spectacular finds. Among the snake-decorated pottery, one krater could be almost completely restored. A fragmentary *dipinto* "IO", painted in red on white plaster, may be complemented as Iuppiter Optimus Maximus, another common indication for Jupiter Heliopolitanus. Animal bones, charcoal, brick chippings and fragments of other building materials and of wall paintings are dominant in the fill. The mentioned finds and the spectra of the terra sigillata and animal bones, however, indicate a special background and intentional deposition, at least for parts of the assemblage.

Pit G11 in square L/29 was situated in the southern part which remained open ground throughout the whole use period of the sanctuary. It was about 15 m to the south-east from banquet hall H, and 20 m away from the southern *temenos* wall *(fig. 2)*. The stratigraphy, finds and interpretations of G11 are extensively discussed by Gassner[25]. The pit is almost perfectly circular in outline. Other than G7, it was not touched by destruction events or levellings. Rather, the pit cuts into the ground from a layer designated as antic humus, probably corresponding to phases 2.1./2.2. Its walls go down perpendicularly for 0.3 m, and then gradually taper towards the centre. Excavations were stopped at a depth of 3 m when the bottom of the fill was reached. The whole, relative depth of the pit reaches down for more than 2 m. Because no erosion debris was allowed to accumulate, the pit was probably filled immediately after its construction. The sedimentary sequence of the fill is documented by drawings and photographs *(fig. 3)*. From the bottom, it starts with a thin ashy layer, to be followed by a thick horizon of burned clay and fragments of secondarily burned mud bricks. Since no traces of heating were recognised in the wall, all burned objects must have reached the pit in an already cooled state. Locally, animal bones were deposited above this horizon. Separated by a dark loamy layer, a second horizon of burned clay or mud brick follows, overlaid by a densely packed layer of animal bones. The heat influence on the animal bones was variable, but mostly moderate and it exhibits no clear pattern, affecting only a minor portion of the sample *(figs 4 and 5)*. Fragments of unburnt wall paintings were frequent in both horizons with mud bricks. More loamy layers fol-

21 Gassner et al. 2011, 143–145; Steigberger / Tober 2013.
22 Eschbaumer et al. 2004, 134–136, Gassner et al. 2011, 146–148.
23 Eschbaumer et al. 2004.
24 Gassner 2008.
25 Gassner 2013.

3 Pit G11 during excavation (1981); dense concentration of animal bones in centre of section.

low on top. Probably these also belong to the primary fill of the pit. This sequence of alternating layers of burnt mud, brick debris and loamy horizons points at an intentional, quick fill process. Or, possibly, of two fill events following each other quickly.

Most of the archaeological finds derive from the two layers with mud bricks, showing a strong uniformity in composition. This further indicates that the fill was intentionally created in the course of a single action. The few coins give a *terminus post quem* of AD 178/182. The terra sigillata assemblage indicates a time-span of AD 170/180–210/220. Again, drinking vessels and other types of tableware prevail among the terra sigillata. Fragments of kraters with snake and grape appliques, and of plates and jars used for baking and cooking, further enhance the 'culinary' character of the pottery assemblage. It can be clearly distinguished from samples normally met at Carnuntum. As a direct sign of cult, a graffito "IOM" (Jupiter Optimus Maximus) was identified on one cooking pot. The idea of common meals attended by many people makes sense regarding the vicinity of hall H, identified as a banquet hall by its architecture. Small finds are represented by rings, medical tools, and lamp fragments. While the direct indicators of ritual activity are less pronounced than in G7, the collection of animal remains is many times larger. The scarcity of building rubble is another important difference to the fill of G7.

Both pits are classified as ritual pits, or as pits related to special aspects of ritual behaviour, namely common feasting, both in summarising reports[26], and in separate articles devoted to certain find groups[27]. The events responsible for the creation of these assemblages were probably linked to special and critical stages in the development of the sanctuary, either to closing ceremonies at the end of phase 2.2.[28], or to the establishment of the final sanctuary of phase 2.3. If such feasts had happened on an annual basis many more contexts of this kind were to be expected. Although the animal bone assemblages have little in common regarding species composition, the whole setting, a large pit filled up with putative feasting remains, bears some resemblance to the situation found in a pit at the Mithraeum at Tienen (Belgium), carefully described by Lentacker et al.[29].

26 Eschbaumer et al. 2004; Gassner et al. 2011.
27 Gassner 2004; Gassner 2013.
28 *Riti di chiusura*: Gassner 2013, 230.
29 Lentacker et al. 2004.

4 Random sample from pit G11, with many complete and well preserved bird bones and cattle bones. Some specimens with signs of heat influence. Prior to sorting and study, December 2006.

5 Representative random sample from pit G11, exhibiting little heat influence. Prior to study, December 2006.

The large, irregular pit or pit-group from square M/37 (in the following: M/37) is situated just outside the south-eastern *temenos* wall. Rather than representing a single, defined object like G7 and G11, M/37 represents a group, or partly intersecting sequence of shallow, irregular pit-like structures. It probably received much material influx from outside. M/37 nevertheless shows some influence from the sanctuary, e. g. the presence of snake-decorated pottery[30], but late antic glazed ware is also present. This object was obviously disturbed in the late 3rd c. AD. The available archaeological documentation does not allow for a further resolution of the stratigraphy.

Material and methods

All available animal remains from the Mühläcker area were collected by hand. As far as can be judged from the composition of the bone samples, recovery and collection were certainly carried out very diligently. Even within large samples, which are dominated by big bones of cattle or equids, the dusty remnants present in the bottom of sample bags may contain tiny fragments and elements e. g., digits of domestic chicken. Archaeological data for each faunal sample were carefully recorded, in a fashion analogous to the artefacts, which is likewise remarkable for the standard of the time. However, at the present state of stratigraphic research on the sanctuary, these excavation data cannot be easily translated into an internal stratigraphic scheme for the pits. The records indicate squares and depths, but no information on specific layers. Therefore, the respective pits G7, G11 and M/37 had to be used as the smallest analytical units. This does not exclude the future possibility to discriminate between areas or layers of the fill, namely in G11. Here, discrete bone layers are visible in the drawings and photographs and are also recorded in the excavation diaries, but sampling was not carried out according to a stratigraphic scheme, or at least not in a straightforward fashion. To sum up, the samples from the Mühläcker sanctuary are comparable, by and large, to other faunal materials recovered in the Carnuntum area during more recent decades. Recovery bias, especially concerning the size of skeletal parts, may be low for medium-sized and larger mammals, but may be more important in birds. Obviously, the recovery was not done selectively, and no sorting out of 'unattractive' fragments or other specimens deemed as unimportant occurred. The state of preservation can be, generally, regarded as good, if not extraordinary, especially in the pits G7 and G11 *(figs 4 and 5)*. It allows for an easy recognition and assessment of surface conditions, notably cut marks and traces of burning.

Regarding the choice of animal bone samples from the sanctuary of Jupiter Heliopolitanus to be studied in the course of an interdisciplinary project (2011–2013), it

30 Eschbaumer et al. 2004, fig. 20.

was decided to focus completely on the remains from the pits. This made sense because both G7 and G11, together with a series of smaller pits, produced the largest zoological assemblages of the sanctuary, and because the pottery and other finds from these contexts had been studied before. This provided a sound basis for chronology and further interpretations. For the sake of comparison, the material from M/37 was also integrated, although the lack of stratigraphic and functional information represented important shortcomings. It was included for two reasons. Firstly, it produced a bone assemblage of dimensions comparable to G11. Secondly, it provided an ideal outgroup for the comparison with the contexts inside the encirclement. Obviously, M/37 contains elements, namely partial or disarticulated skeletons of dogs and equids, which are incompatible with the idea of feasting remains. Rather, the whole assemblage from M/37 may correspond to a mixture of remains to be expected in peripheral areas of settlements (dumping of carcasses of equids and dogs and other noxious rubbish), and of bone debris specific for the sanctuary. The remains of dogs and eqids could likewise represent intrusive late antique admixtures. The animal remains from the levelling layers and smaller pits inside the sanctuary have, mostly, not been studied or checked so far.

Data collection and recording, including bone measurements, were carried out according to standard procedure[31], and by using a comparative collection. For all specimens, bone weights were recorded to the nearest 0.1 g. The quantification methods used are specimen counts (NISP) and bone weights. In theory, a calculation of minimum numbers of individuals (MNI) makes sense, too, especially in a ritual or 'feasting' setting. For domestic chicken in G11, it was estimated to be 193. Due to the state of research, no further MNI-values can be given for the other species.

Apart from some of the bird remains, the material did not present major challenges for its identification. Regarding the main domestic mammals, a pragmatic stance was adopted. The samples, especially those from G7 and G11, did not provide many opportunities for the discrimination of sheep and goat. Because remains of red deer are rare, domestic cattle is practically the only artiodactyl species within its size group. Nevertheless, only fragments exhibiting sufficient diagnostic properties were classified to species level. This may be especially critical in the case of long bone splinters, axial elements and juvenile specimens. Because of the special focus on axial remains from cattle as far as butchery marks are concerned[32], the percentage of vertebrae and rib specimens actually attributed to species level may be higher here than elsewhere. We believe that such considerations should be explicitly addressed. The axial remains of mammals were not completely recorded throughout the whole material. In G7, they were studied in total, whereas they are yet unrecorded for M/37. In G11, they were recorded for about two thirds of the samples (see below). Consequently, overall abundances and skeletal part frequencies were only calculated for these samples. Otherwise, the percentages of taxonomic groups well represented by vertebrae, ribs and sternebrae, that is cattle and, to a lesser degree, caprines, would be strongly underestimated. In the given context, the exclusion of the mammalian axial skeleton would mainly raise percentages of domestic chicken and other birds. This problem is felt less for M/37. Here, the frequencies of axial elements are considerably lower, and the number of taxa affected by the exclusion is higher. Nevertheless, it must be kept in mind that the percentages of cattle, equids, caprines, pigs and dogs are probably underestimated in M/37. Skeletal part representation was assessed by using the relative weight of skeletal parts, relying on the values published by IPNA (Integrative Prähistorische und Naturwissenschaftliche Archäologie) in Basel (CH)[33]. In using this method, the weight percentages of skeletal areas for a taxon within the sample are compared to a standard, which is represented by one or more complete skeleton(s). Thus, it is possible to include elements which are otherwise difficult to count, and to circumvent the effects of differential fragmentation.

31 E. g. von den Driesch 1976.
32 Kunst 2013; Kunst 2015.
33 Website: https://duw.unibas.ch/de/ipna/forschung/archaeobiologie/archaeozoologie/methodik/ (consulted in February 2020).

Previous research on animal remains from the sanctuary

Previous studies of the zooarchaeological material from Carnuntum-Mühläcker were devoted to selected contexts, special categories of finds, certain taxonomic groups or other aspects of the assemblages.

A first report on the animal remains from pit G7, including basic quantitative data and taxonomic composition, was provided by Fegerl in her diploma thesis[34]. In an article devoted especially to pit G11, Gassner makes reference to a cursory assessment of the quantitative composition of the animal bone assemblage, carried out by the first author[35]. Also from G11, a very limited, but remarkable collection of worked bone specimens was described by Gál[36]. It comprises a flute carved out of a goose humerus and a metacarpus of a horse which might represent a little used bone skate. Apparently, bone artefacts are otherwise rare in layers from inside the sanctuary. The avian assemblage from pit G11 was extensively presented by Gál and Kunst[37]. Apart from pathologies and bone modifications, an emphasis was put on the osteometry of domestic chicken. On the basis of the measurements of sexed tarsometatarsi, two size groups of domestic chicken were identified. The dominance of male over female birds, together with the scarcity of pigs, was taken as an evidence for the Eastern origin of the local feasting habits. The dominance of cattle remains over caprines was recognised as a difference to published reports from Mithraea. According to the skeletal part representation, the birds were slaughtered inside the sanctuary. Pathological conditions of mammalian remains are treated in Gál and Kunst[38]. While bones from M37 displayed a variety of pathological lesions among cattle, sheep, equids, and dogs, healed fractures on cattle ribs are the dominant category observed in G11. This was deemed to be related to the young or prime slaughter age prevalent in this context. It can also be seen as independent evidence that these cattle remains derive from a close-knit, selected population. The mammal remains from G7 are practically devoid of pathological lesions. Two more studies were devoted to the butchery pattern of the axial skeleton of cattle from pit G11[39]. The distribution and categories of butchery marks indicate that cattle carcasses were butchered and, at least as far as the axial parts or rumps are concerned, consumed inside the sanctuary, and that these procedures followed a uniform pattern. Admittedly, the investigations on the animal remains from the sanctuary, along with the studies on the stratigraphy and artefacts, are far from being completed. In the following, some of the more important general aspects on the animal remains from G7, G11 and M/37 will be provided.

Overall species composition

Given the time of excavation and the large amount of material, the presentation of basic data needs some comments *(tab. 1)*. First of all, it must be kept in mind, that in the cases of G7 and G11, only a part of the pits were excavated. The objects were sectioned in the middle, or quartered, in order to draw the profiles, a typical procedure before the adoption of the stratigraphic excavation method. For safety and economic reasons, parts of the fill were left *in situ*. The amount of this material loss is difficult to estimate, but may be more than half of the bones in both cases. Still, the available samples are important and contain more remains than any single settlement features from the nearby civil town.

34 Fegerl 2008.
35 Gassner 2013.
36 Gál 2013.
37 Gál / Kunst 2014.
38 Gál / Kunst 2018.
39 Kunst 2013; Kunst 2015.

NISP											
	Bos	Ovis/ Capra	Sus	Gallus	Anas	Anser	other birds	Equus	Canis	other	total
G11	5810	344	19	429	24	344	5	143	37	48	7203
G7	1151	56	10	46		46	1	4	1	2	1317
M/37	1586	257	105	120	5	77	2	126	128	15	2421
Bone weight (g)											
G11	163 137.90	2871.80	279.70	1083.30	48.60	1552.70	7.10	7546.60	463.10	416.30	177 407.10
G7	35 917.38	415.20	63.70	97.00		173.90	0.60	337.30	27.63	13.30	37 046.01
M/37	63 746.10	3071.70	2348.90	236.90	12.90	350.60	1.20	11 392.10	2653.10	492.60	84 306.10

Tab. 1 Basic data for G7, G11 and M/37.

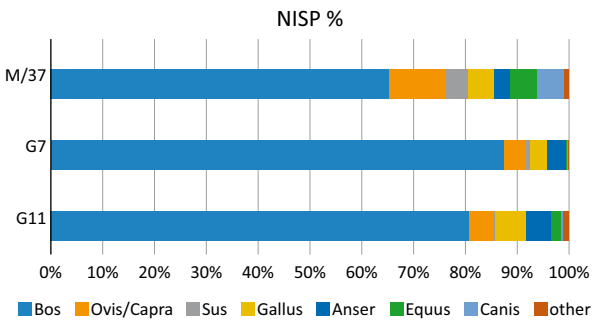
By comparison, the overall sizes of the two pits inide the sanctuary do not differ that much, although G11 exhibits more depth than G7. Regardless of how much bones were left unexcavated in the former, the total values (NISP, bone weight) are many times larger in G11. Apparently, this is due to an extraordinarily high density of bone finds within this feature, as evidenced from photographs and drawings. Because modern methods were lacking during the time of the excavation, it is however impossible to actually indicate a value for the amount of bone finds per volume. M/37, certainly, occupied a much larger area than both G7 and G11.

These large volumes are also caused by the excellent preservation conditions within the spacious pits, as indicated by pictures of random samples from G11 *(figs 4 and 5)*. Further, the state of recording is not comparable across the contexts. In G11, axial elements were only identified in parts of the material. The results presented in *figures 6–8* for G11 are therefore based on only those samples where the elements of the mammalian axial skeleton were identified. As can be illustrated by the random sample *(fig. 5)*, axial elements, especially cattle ribs, account for an important part of the material from G11. Because the bird remains and the mammal bones without the axial skeleton have been studied for the whole sample, the total NISP and total bone weight for the whole material recovered from G11 can be estimated. According to this, the samples with the axial skeleton studied make up between 54 % (domestic chicken) to 68 % (cattle) of the total material. The respective percentages for the bone weights are 57 % (domestic chicken) and 72 % (cattle). The total NISP of G11, therefore, can be estimated between 10 593 (based on the cattle remains) and 13 339 (domestic chicken). For the weight of the identified bones, the estimated values are between 246.4 kg and 311.2 kg, respectively, that is more than a quarter of a ton. The different results obtained from the chicken and cattle remains indicate that the faunal elements, notably chicken and cattle are not evenly distributed across the fill of the pit. This is compatible with the idea of a quick fill, which might preserve spatial signals of different dumping episodes. Hopefully, this can be worked out in detail once the internal stratigraphy of G11 is better understood.

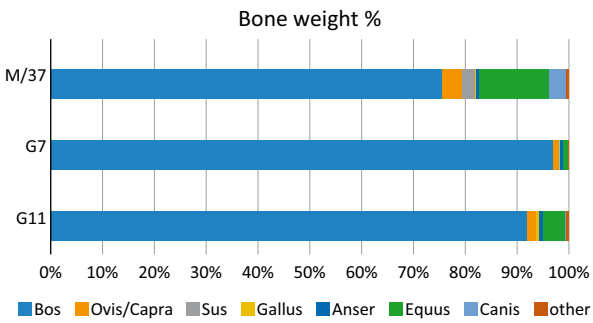
Also in M/37, axial elements of mammals have not been identified so far. The results for M/37, therefore, may not be strictly comparable to the other two pits. Based on a cursorial knowledge of the material, the exclusion of axial parts affects the dominant species groups cattle, equids and dogs to about the same degree. Therefore, the inclusion of the axial parts of mammals would significantly lower the percentages of domestic chicken and goose in M/37.

The results for percentages of NISP *(fig. 6)* exhibit the most complete dominance of cattle in G7 with 87 %, to be followed by 81 % in G11, whereas M/37 shows a more balanced distribution with cattle reaching 66 %. Pigs make up over 4 % of the total for M/37. For G11, the inclusion of axial elements certainly enhanced the percentages of cattle as compared to previous estimates. It is nevertheless remarkable that the overall percentage of all birds counted together amounts to about 11 %, which is not too far away from 16 % which were based on a test sample only superficially screened by the first author[40].

40 Gassner 2013, fig. 10.



6 Carnuntum-Mühläcker, relative species composition according to NISP, in pits G7, G11 and M/37.



7 Carnuntum-Mühläcker, relative species composition according to bone weight, in pits G7, G11 and M/37.

It is this dominance of cattle, together with the high percentages of domestic birds, which can be valued as the most significant aspect of all the Mühläcker samples. Otherwise in Carnuntum, high abundancies of domestic birds often coincide with high percentages of pigs and caprines, and are often antagonistic to cattle[41].

As previously observed, the scarcity, if not quasi absence, of pigs is another major aspect of G7 and G11. This sets them apart from most other samples throughout the Carnuntum area and beyond, and is most likely related to a specific ritual behaviour, such as food prescriptions in connection with the local cult. Unfortunately, no faunal data is available for Baalbek. The small presence of equids and canids in G11 should not be ignored. Their presence casts doubt on the strict homogeneity, or single origin, of these assemblages. Along with other 'rare' elements like hares, bear, and other wild mammals, it cannot be judged if they derive from feasting events or rather represent erratic finds. At least the few dog remains are represented by associated bones and may result from disarticulated carcasses. Judging from the find numbers, both dogs and equids are limited to certain areas within the fill.

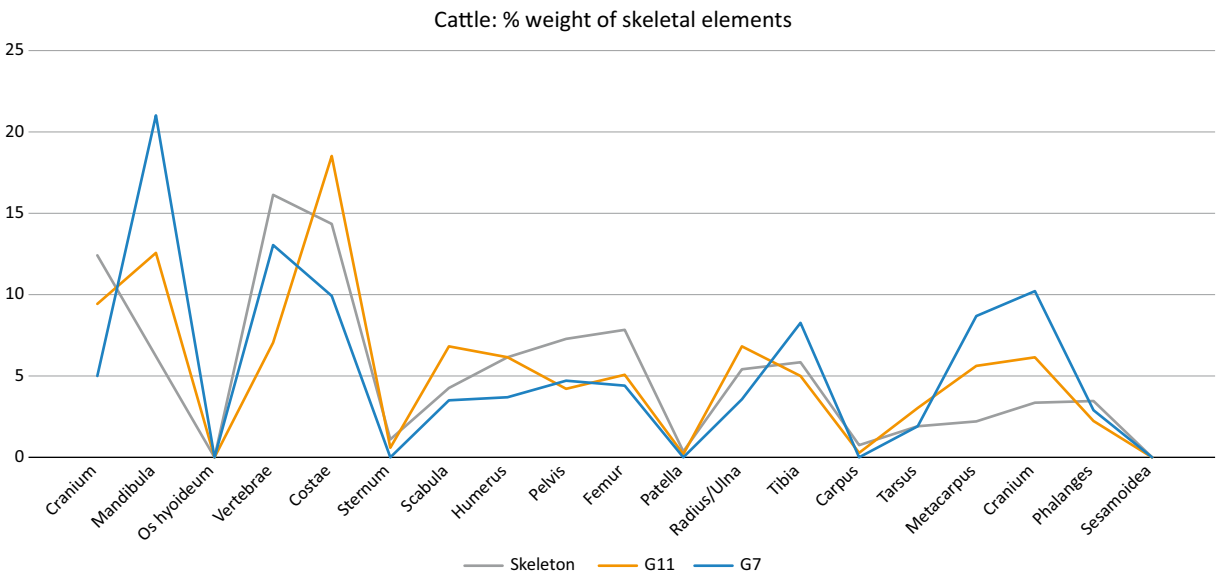
Quite likely, a certain amount of residual or intrusive elements can be assumed for G11, which is all the more plausible if we think of the large dimensions of this structure and the overall size of the sample. In this respect, G7 forms the most clear-cut feasting assemblage. Nevertheless, the principal similarity regarding species distribution between G7 and G11 appears to be the most noteworthy result, and it is also based on large assemblages in both cases. On the other hand, M/37 may really be a mixed assemblage made up of different sources: the high chicken and goose abundances may be due to the bone influx from the interior of the sanctuary, while equids and dogs could be related to the 'peripheral' taphonomic setting, where carcasses are dumped on the outer area of a clustered settlement.

As would be expected, the percentages of the larger species cattle and equids are higher in the weight diagram *(fig. 7)*. The dominance of cattle in G7 becomes even more accentuated, thanks to the quasi absence of equids.

Skeletal part representation of cattle

As outlined above, skeletal part representation was assessed by using weight percentages of skeletal areas. The comparative values were only calculated for G7 and G11 and show some remarkable trends *(fig. 8)*. Some element groups exhibit values surpassing two or three times the expected value. These observations are based on sufficiently large samples (35 and 160 kg, respectively). The favourable preservation conditions make it likely that most of the bias observed in skeletal part representation is due to human activity. Marks resulting from carnivore gnawing are almost absent.

41 Protective, fine-grained vs. "coarse" taphonomic settings; Kirchengast 2019; Abd El Karem et al. in print.



8 Carnuntum-Mühläcker, cattle, relative weight percentages of skeletal areas in pits G7 and G11, compared to a complete skeleton.

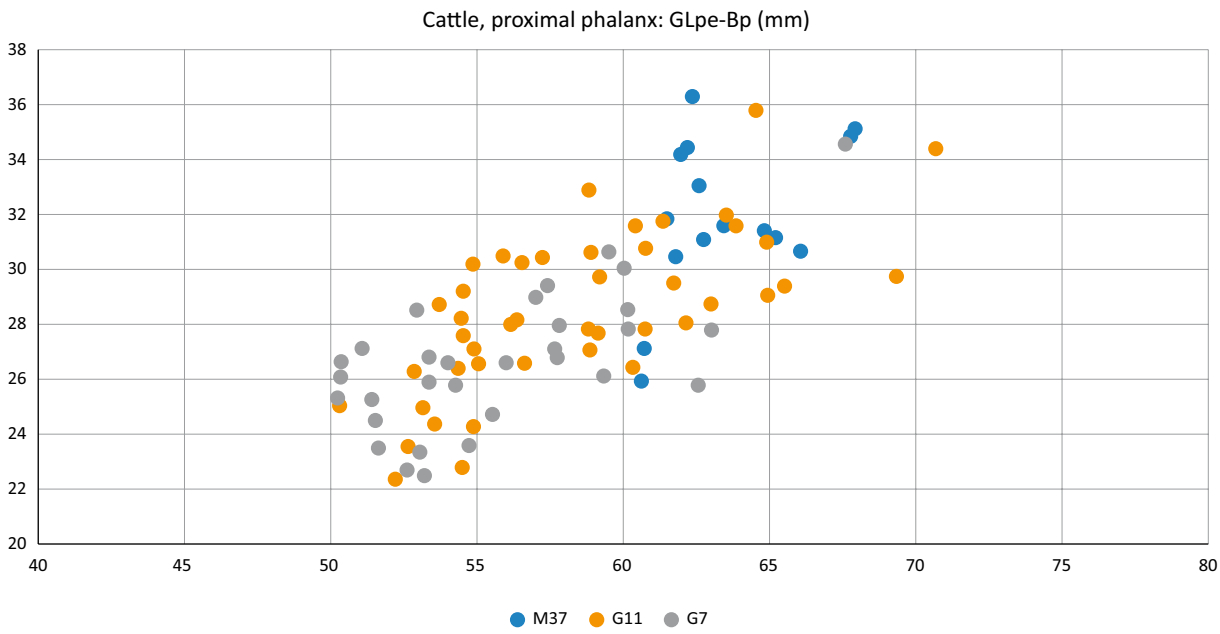
– G7: Very marked over-representations can be observed for the mandible and the metapodials, less so for the tibia; strong deficits occur in the upper skull; they are less accentuated in the long bones and the pelvis. The values for vertebrae and ribs, although being below their natural percentages, can even be described as good, given their frequent deficit in assemblages. Further, they appear in the natural proportion relative to each other. This pattern indicates a mixture of waste parts (mandibles, metapodials) and bones related to consumption (axial skeleton). For the long bones and the girdle elements, the pattern is not so clear. Possibly, slaughter occurred at the site, but certain parts were removed elsewhere, notably the upper skull. Horn cores are definitely absent, also practically missing from G11. Since no polled cattle are known from the Carnuntum area, but accumulations of horn cores are frequently met within the civil town[42], this indicates the active removal of these parts of the skeleton out of the sanctuary, or, at least, away from the pits. Horns and skins may have provided an additional income for the sanctuary.
– G11: The general picture appears to be more balanced here, the only strong over-representations can be observed for the mandible and the scapula, and also for the metapodials. The trend is less marked for these elements as compared to G7. A strong disequilibrium is extant for the ribs (slightly over-represented) and vertebrae (marked deficit). The radius/ulna and humerus occur close to their expected values, while pelvis and femur are in deficit. Their values correspond exactly to those met in G7.

This picture cannot be attributed to a single cause or function alone, because both waste parts and meat-bearing bones are over-represented. Like in G7, it can be assumed that the animals were slaughtered at the site, significant parts were removed, and both carcass parts resulting from primary butchery and bones related to consumption were dumped locally. Another similarity to G7 can be seen in the disparity between anatomically connected parts, although here vertebrae (deficit) and ribs (accumulation) are affected.

The skeletal element patterns extant in both contexts point at deliberate, systematic attitudes towards the carcasses. These results should be supplemented with observations on butchery traces. This has already been tried for the ribs and vertebrae from G11, which show a marked degree of consistency[43].

42 E. g. Radbauer / Kunst 2011.

43 Kunst 2015.



9 Carnuntum-Mühläcker, cattle, Bivariate scatterplot of proximal phalanx, Greatest peripheral length (GLpe), horizontally – proximal Breadth (pB), vertically.

Size trends in cattle

In many parts of the Roman Empire, and notably in Central Europe, the remains of cattle exhibit an important size variability, which is mostly explained by the synchronous presence of 'Roman' and 'native' cattle. This issue represents a long-term, recurrent *topos* in Roman zooarchaeology[44]. In the case of the Mühläcker sanctuary, the proximal phalanges provided an opportunity for the comparison of a sufficient number of measurable bones. Although, as a whole, including four different anatomical elements (anterior/posterior, medial/lateral), they can be used to assess overall size trends[45]. By and large, all three pits together cover the whole variability known from elsewhere in Carnuntum and other sites from nearby Pannonia and Noricum, maybe without extreme outliers[46]. However, the data points for each of the three contexts are not distributed equally across the whole field *(fig. 9)*. With a few exceptions, the values for G7 occupy the lower part of the distribution and may correspond to the local or 'native' breed, including female and male specimens[47]. The scatter for G11 covers the whole variation of the site, but the majority of data points occupy the lower part of the range. It therefore seems that local breeds, possibly imported from the Barbaricum, were preferred for slaughter and consumption in the sanctuary. The proximal phalanges from M/37 are concentrated in the upper part of the distribution. Possibly, mainly Roman types are represented here. This is also indicated by the presence of bones from elderly animals with pathological lesions from this context[48]. They may represent draught oxen, the meat of which was not consumed in the sanctuary. Clearly, no phalanges with pathological conditions on the proximal articulations were included into the diagram. There is indeed very little size overlap between the specimens from G7 and M/37. Such size differences among samples of cattle bones from the same site appear to be rare. Larger samples from the civil town of Carnuntum tend to include the whole Roman variation, whereas in rural producer sites, the Roman breed may be the only one represented[49]. Rather than linked to the chronological position, the occurrence of small and large cattle types appears to be more closely linked to site function. Pucher has previously reported all of the known local Roman size variation, including measurements for the proximal pha-

44 E. g. Peters 1998; Breuer et al. 1999; Pucher 2016.
45 E. g. Lepetz 1997, fig. 18.
46 Kunst 2014, fig. 41; Kirchengast 2019.
47 E. g. Pucher 2016.
48 Gál / Kunst 2018.
49 Riedel 2004; Kunst 2014.

lanx, for Bruckneudorf, which allegedly yielded material from the 1st century AD only[50]. This site is less than 20 km away from Carnuntum. The almost exclusive presence of the small breed or type within an uncontested Roman context, like G7, and its dominance in another (G11), therefore appears all the more noteworthy.

Conclusion

Overall, the results from species composition, skeletal part representation and body size distribution corroborate the idea that these three contexts, or at least G7 and G11 from inside the sanctuary, were each accumulated in the course of individual, short-termed events. Possibly, they are only representative for a special phase in the history of the site. Notably G7 may appear as a real time capsule, which preserved the remains of a single cattle population. This trend is less clearly expressed in the much larger sample from G11, while M/37 may already represent 'normal' (sub)urban features, although comparative samples from the adjacent *canabae* are lacking. Regarding osteometry, the observations on the cattle remains are somehow complementary to those made on the bones of domestic chicken. Here, the simultaneous presence of two different breeds within the same context was the main point[51]. Thus, independently of their cultural and historical relevance, faunal samples resulting from ritual activities may also provide important zooarchaeological datasets. This may be due to their organised, structured origin, which generates accumulations of animal bones processed and modified in a similar fashion.

Here, much attention has been paid to the archaeological context of the features, the stratigraphy of the sanctuary and the interpretations based on find groups other than animal remains. It may be asked if the bone assemblages from G7 and G11 would also be recognised as something 'special' or 'ritual' if this additional information was lacking. At least in G11, the large sample size would imply gastronomy, if not communal feasting. Otherwise, it is not so much a single feature, but a combination of traits which makes them stick out from those from other contexts, such as, samples from the nearby civil town. For example, samples with explicit cattle dominance may appear elsewhere, notably accumulations of long bone splinters or horn cores. But these rarely go together with a good representation of bird bones. Similar remarks could be made for the skeletal part representation and the butchery marks. For example, marks indicative for the consumption of preserved meat, otherwise dominant within urban Roman assemblages[52], are rare within the pits from the sanctuary. Therefore, a comprehensive assessment of the butchery marks present on the cattle remains may provide a strong tool in recognising special taphonomic and functional pathways.

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Fig. 1: Partly redrawn after Gugl / Kremer 2010, adapted from Gál / Kunst 2018. – Fig. 2: Source of map: Institute for Study of Ancient Culture, Austrian Academy of Sciences. – Fig. 3: Institute for Study of Ancient Culture, Austrian Academy of Sciences. – Fig. 4, 5: Photo G. K. Kunst. – All other figures: Authors.

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Abstract

Presented here are three large animal bone assemblages recovered from three pits from the area of the sanctuary of Jupiter Heliopolitanus at Carnuntum. Two of them (G7 and G11) are from inside the precinct and are possibly linked to a reconstruction phase of the sanctuary at around the end of the 2nd /beginning of the 3rd century AD. They are believed to represent leftovers from communal meals of large groups of people. A third large pit (M/37) was situated immediately outside of the sanctuary and may represent a normal garbage pit, although its taphonomic history is less clear. This object is included mainly for comparative purposes. Summary data (NISP, bone weight) of the faunal remains are presented for the first time. After special reports were dedicated to bone artefacts, the bird remains and the butchery record from G11, this paper is devoted to the cattle remains in general, which form the core part of all three assemblages. Skeletal part representation and osteometry are important tools in recognising special features and similarities of the three assemblages. The skeletal part representations of the cattle remains from pit G7 and G11 indicate both butchery and consumption. Bone measurements suggest the presence of a uniform cattle population during certain phases of the sanctuary.

Zusammenfassung

Ausgesuchtes Rindfleisch für die Gläubigen – Die Rinderreste aus dem Heiligtum von Jupiter Heliopolitanus in Carnuntum (Österreich)

In dieser Studie werden umfangreiche Tierknochen-Vergesellschaftungen vorgestellt, die aus drei Gruben aus dem Areal des Heiligtums des Jupiter Heliopolitanus in Carnuntum geborgen wurden. Zwei von ihnen (G7 und G11) stammen aus dem Inneren des Bezirks und stehen möglicherweise in Zusammenhang mit einer Wiederaufbauphase des Heiligtums gegen Ende des 2./Anfang des 3. Jahrhunderts n. Chr. Vermutlich enthalten sie die Überreste von gemeinsamen Mahlzeiten großer Personengruppen. Eine dritte große Grube (M/37) befand sich unmittelbar außerhalb des Heiligtums und könnte als Müllgrube anzusprechen sein, auch wenn ihre taphonomische Geschichte weniger klar ist. Dieser Befund wurde hier zu Vergleichszwecken einbezogen. Zusammenfassende Daten (NISP, Knochengewicht) der Faunenreste werden hier erstmals vorgelegt. Nachdem auf die Knochenartefakte, Vogelknochen und die Schlachtspuren an Knochen von G11 bereits in eigenen Artikeln eingegangen wurde, widmet sich diese Studie den Überresten der Rinder, die den Hauptteil innerhalb aller drei Assemblagen bilden. Die Repräsentanz der Skelettteile und die Osteometrie sind wichtige Instrumente, um Besonderheiten und Ähnlichkeiten der drei Assemblagen zu erkennen. Die Skelettverteilung der Rinderknochen aus den Gruben G7 und G11 zeigt sowohl Schlachtkörperzerlegung als auch Konsum an. Die Skelettmaße deuten auf das Vorhandensein einer einheitlichen Rinderpopulation während bestimmter Phasen des Heiligtums hin.

Résumé

Des Boeuf de choix pour les adorants – les traces de bovins du sanctuaire de Jupiter Heliopolitanus à Carnuntum (Autriche)

On présente ici trois grands ensembles animaux provenant de trois fosses de la zone sacrée du sanctuaire de Jupiter Heliopolitanus à Carnuntum. Deux d'entre eux (G7 et G11) proviennent de l'enceinte et sont peut-être liés à la phase de reconstruction du sanctuaire vers la fin du 2e/début du 3e siècle ap. J.-C. On pense qu'ils représentent les restes de repas pris en commun. Une troisième grande fosse (M/37) était située immédiatement à l'extérieur du sanctuaire et représente probablement une fosse normale de déchets, quoique son histoire taphonomique reste moins claire. Nous avons inclus cet ensemble à des fins comparatives. Les données synthétiques (NISP, poids des os) des restes de faune sont présentées pour la première fois. Des rapports spéciaux ayant été dédiés aux artefacts osseux, restes d'oiseaux et traces de boucherie de la fosse G11, cet article vise les restes de bovins en général qui forment l'élément central des trois ensembles. La représentation des parties du squelette et l'ostéométrie sont des outils importants pour reconnaître les traits particuliers et les similarités des trois ensembles. Les représentations des parties du squelette des bovins des fosses G7 et G11 indiquent des activités de boucherie et une combustion de consommation de viande. Les mesures des os suggèrent l'abbattage d'une population bovine homogène durant certaines phases du sanctuaire.

Animals in funeral practices in Belgic Gaul between the end of the 1st century BC and the beginning of the 5th century AD: From gallic practices to Gallo-Roman practices.

by *Sébastien Lepetz*

Keywords

Sacrifice, Rite, Burial, Offering, Zooarchaeology, Antiquity

Schlüsselwörter

Opfer, Ritual, Begräbnis, Opferung, Achäozoologie, Antike

Mots-clès

Sacrifice, ritual, funérailles, immolation, archéozoologie, antiquité

Introduction

For many years now, excavations in what is today the north of France have uncovered numerous cemeteries dating from the end of the 1st century BC to the 5th century AD. Their excavation has allowed archaeologists to compile a remarkable body of finds that allows us to describe a part of the activities conducted at the time of the funeral. Some tombs are very rich and have yielded significant quantities of ceramics and diverse other objects, which could then be studied, and which have revealed the complexity of the deposits. These sites were all excavated within the past years and subjected to methods of excavation that, compared with those used on earlier excavations, increased the amount of information that was recorded. We are able to understand the sequence and the logic of the deposits, the modes of cremation and of collecting the human remains on the pyre, the aspects relating to the presence of flexible containers made of perishable materials (bags, baskets), the presence of shelves in the grave, and other facilities that are present. These excavations have resulted in analyses that allow us to better understand the funerary rites themselves, their diversity in Belgic Gaul, and their specifics per province in comparison with Roman customs. Certain cemeteries have yielded burials covering multiple centuries, providing precious indications of the evolution of funerary practices in the region. Among these ritual practices are those involving animals.

Within this corpus of sites, 20 cemeteries (in 17 different municipalities) have yielded 464 burials with remains of animals. The vast majority of the data from these burials are unpublished, as are the other archaeological data from these sites.

There is not enough space in this paper to describe the sites themselves in detail, even though each necropolis, each tomb even, merits such a description, in the sense that each deposit is unique and presents unique characteristics, having its own history and bearing witness to unique actions – loaded with social, symbolic, or

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ritual meaning – conducted by a family. It is clear that the place of the animals within these events can only be entirely understood if their remains are incorporated into a global approach that integrates the totality of the archaeological objects, artefacts, and descriptions. A complete analysis of the tombs should therefore be conducted.

But while we await the detailed publication of these sites, it is nevertheless possible to reveal certain general aspects of practices conducted in the northern part of Gaul. Several analytical or synthesising studies are already available for the region under discussion here and for the adjacent regions[1]. They evaluate certain characteristics of the faunal deposits and certain aspects of the evolution of these deposits. They also touch on the significance of the gestures observed in relation to the corpse – sacrifices, offerings, shared meals – underlining the ever-present difficulty of recognising the way in which the animals are implicated in the different phases of the funeral (whether entire animals or animals cut in pieces, and whether cooked, eaten, or exposed).

I propose to complete our picture of the practices carried out around the tomb by relying on this large body of evidence. The objective is to contribute to a better understanding of the specifics of provincial practices and to better define their evolution under the Roman Empire in the northern part of Gaul. The crux of this approach is our capacity to link our archaeological information to practices in pre-Roman Gaul, in Roman Italy, and in the Roman provinces to local habits that may be particular to certain cities, and to habits that are particular to individual families.

With this in mind, I will first outline Gallic practices (this description will be short, because these practices have been described in detail elsewhere). Then I will also outline some elements of the Roman context as it is known from texts and from the *Porta Nocera* necropolis at Pompeii. Then I will describe and analyse the practices at the end of the 1st century BC and the first two centuries AD, on the one hand, and the practices of Late Antiquity, on the other.

Practices in independent northern Gaul

Zooarchaeological studies conducted on Gallic funerary sites have resulted in deep knowledge about practices in the Late Iron Age[2]. In the 5th and 4th centuries BC, the species concerned are essentially pig (*Sus domesticus*), cow (*Bos taurus*), and caprines (sheep, *Ovis aries*, and goat, *Capra hircus*). A change is seen from the 2nd century BC onwards, when pig becomes dominant and dog (*Canis familiaris*) and chicken (*Gallus domesticus*) appear. These deposits were either made on the pyre or beside the burnt remains of the deceased human, within the tomb. In the majority of cases, the pieces concern burnt parts of animals (including the head, shoulders, thighs, and ribs). But studies have shown that other categories of remains are also present, including defleshed bones of equids, whose meaning is not always easy to determine. Méniel has also revealed the existence of a special layout of anatomical parts[3]. Pieces of meat reconstitute animals that appear complete but that are not. Anatomical parts are missing, but their absence is hidden by the ceramic deposits. It's about giving the impression that the pig carcasses are more complete than they really are or that there is a greater abundance of victuals than there really is. One of the peculiarities of the tombs of the final part of the La Tène period is a significant and visible presence of deposits of meat, and not just in the high-ranking tombs. This seems to be a cultural trait, which is interesting to compare and contrast with Roman traditions in the funerary domain.

1 Méniel 1995; Méniel 2002; Méniel 2008a; Méniel 2008b; Metzler-Zens et al. 1999; Lepetz 1996; Lepetz 2017; Lepetz / Van Andringa 2004.

2 See for example Metzler-Zens 1999; Méniel 2002; Méniel 2008a; Méniel 2008b.

3 Méniel 2002; Méniel 2008a; Méniel 2008b.

Practices in Italy

For the Roman world, the different temporal stages of the funeral, to the extent that we can understand these based on tombs and texts, proceed in a sequence that is generally known. The funeral itself takes place near the tomb. In terms of rite, the choice of inhumation or cremation is not of great importance in Rome[4]: sometimes inhumation is dominant, sometimes cremation, and sometimes both forms of burial are practiced simultaneously. Inhumation is more frequently practiced from the 5th to 1st centuries BC, after which the dominant mode is once again cremation. During the 2nd century AD, things change again, and inhumation once more becomes dominant. This change also occurs in the eastern provinces, more or less at the same time. These changes were not the result of any particular belief, but, rather, of fashions, customs, and habits, and the Latin authors do not write about these changes[5]. The rites performed around inhumation are, in their structure, identical to those performed around cremation.

This clarification is important, because it means that we do not necessarily need to look for changes in how animals are involved whenever we see a change in how the human remains are treated. And, if we see changes in how animals are treated, these do not necessarily need to be explained by religious considerations.

The different stages of the funeral are as follows, each accompanied by its own gestures: in the case of cremation, the living place the corpse on a human-made pyre, they burn it, they collect the bones, they place them in a container, and they bury them. Then they close the tomb and, over a period of days, weeks, or months, take moments to commemorate the deceased.

Animals can play a role at different points in time during the funeral. Once the corpse of the deceased has been placed on the pyre, the living place various offerings, such as personal objects, perfume, and flowers. Cicero lists the sacrifice of a female pig, for the goddess Ceres, as the first rite[6]. The living place the remains of the sacrifice on the pyre. The family then shares a meal around the pyre. Scheid presumes that the animal is thus shared among Ceres, the deceased, and the family[7].

This sacrifice-banquet is part of a series of rites through which the tomb is legitimised, and through this meal, the community of the living says farewell to its deceased.

Funerary rituals are rites of passage *par excellence*, because they are used to confer on the deceased a new status and new properties[8]. They have as objective to permit the person to depart the world of the living and gradually enter that of the dead, to assure the best journey possible to the hereafter, and to install the deceased in their new status: the status of a dead person. After the extinction of the pyre, the bones are collected and deposited in a tomb. This is the start of a period of nine days that ends in a sacrifice. During this sacrifice, which is celebrated near the tomb, the living definitively distanced themselves from the dead person. In effect, they offer a sacrifice to the Manes, the collective divinity of the deceased ancestors, of which the deceased is now a part. The relatives of the deceased also make a sacrifice to the gods Penates or Lares (who are the household gods), and they also consume a sacrificial banquet to which the family – all except for the deceased – and the neighbours are invited[9].

This habit of eating a communal meal was sufficiently common that permanent structures, *triclinia*, were constructed specifically for this purpose close to the tombs. Examples are known from the necropolis of Pompeii *(fig. 1)*.

For inhumations, it is likely that the gestures were not much different and that they also involved the sacrifice of a female pig to Ceres. For inhumations, however, one wonders how the banquet was 'shared' with the deceased. J. Scheid envisages that the inhumation represented a more sober funerary rite than a cremation and that, for example, the sacrifice of a pig was replaced with the imbibing of drink and the deposition of fruit[10].

Subsequently, at intervals determined by the religious calendar, during the *parentalia*, for example, the family made sacrifices to the Manes and Penates of the deceased, and in these cases, the living also shared a meal.

This information acquaints us with the succession of gestures, including those involving animals (during sacrifices or during meals), and with their meaning. It is clear that the presence of remains of animals is not necessarily the result of a sacrifice. They may relate to the family meal. It is also clear that the food is not intended to feed the deceased[11], but is instead related to defining the tomb and to the need to indicate the separation from

4 Scheid 1998; Scheid 2008.
5 Scheid 1998.
6 Cicero, On the Laws, 2, 22.
7 Scheid 2005; Scheid 2008.
8 Van Gennep 1981.
9 Scheid 2008.
10 Scheid 2008.
11 Lepetz / Van Andringa 2004.

1 Porta Nocera Necropolis, Pompeii. *Triclinium* next to the tomb in enclosure 7ES (Photo: S. Lepetz).

the world of the living. The texts thus provide information on the meaning of the gestures, which is something that archaeology is not able to do. Our archaeological data contribute to the description of gestures, but they tell us nothing about their meaning. At the same time, we are aware that the information provided by the texts is not particularly detailed, because they are private gestures, which, among the Romans, are not celebrated by a priest but by the father or son of the family. The gestures to be performed are thus left to individuals to carry out, who, depending on the family, the context, and the region, may differ in how they carry them out. This also explains why the rites are not described in detail: first, from the point of view of the religious and political authorities, they did not need to be, and second, they had to take multiple forms.

It is then interesting to compare and contrast the information from the texts with that obtained through archaeology in order to measure the variety and to analyse elements that either support or contradict the general framework or, indeed, to obtain more detail about certain aspects of practices and rites. This is possible with the excavations carried out in Pompeii.

The excavations undertaken at Pompeii from 2003 to 2007 concerned several funerary enclosures in a funerary quarter of the necropolis of *Porta Nocera*, located by the south-east exit of the town[12]. The excavations allowed for the study of 58 tombs dating from the last quarter of the 1st century BC to the third quarter of the 1st century AD. Among these were five primary tombs with individual single inhumations, one secondary double tomb with cremations, and one secondary triple tomb with cremations. The remainder are individual cremation tombs, bringing the total number of individuals studied to 64. In general, the tombs were not very rich in material remains. Apart from the funerary urns, no deposits of ceramics were present in the tombs. Only glass balsamaria relating to libations were well represented. Numerous faunal remains were found mixed with burnt human bone, coins, fragments of worked bone, and botanical remains. Some are from the stage of cremation of the corpse, having been part of pieces of meat placed on the pyre. We have collected them from urns; from the remnants of pyres deposited around the urn in the pits; from the levels of the pyres themselves (some of them were excavated); from pits in which had been placed the remains from the cleaning of the cremation areas; and from the circulation levels (since these layers have accumulated remains resulting from successive re-excavation and reorganisation of the tombs).

Two thirds of the tombs (or 36) yielded burnt animal bone. The taxa represented in these cremated remains are pig, sheep, goat, chicken, and fish.

The remains of other taxa, namely, horse/donkey (*Equus* sp.) and dog, were found as well, burnt and sometimes mixed with the human bone. But analysis tends to indicate that these items do not relate to funerary rites.

With respect to pig, although pieces of meat were placed on certain pyres, this practice was far from universal, as only 30 % of the tombs yielded pig. In the majority of cases, these are single skeletal elements relating to small pieces of meat, perhaps culinary preparations. The 93 burnt bones and teeth derive from all parts of the animal (head, limbs, distal limb), and no selection is evident. Caprines are also present in the tombs, but in lower frequencies, with a combined total of just 26 burnt bones, deriving from six tombs.

Chicken (105 items) was also found in both the tombs and the cremation areas. Remains of chicken were placed on at least eleven pyres. At most only about a dozen different skeletal elements are represented, which seems insufficient to envisage the presence of whole birds.

Fish are represented by 82 bones. The list of taxa is relatively diverse and does not seem to indicate any clear selection, in that it concerns taxa that would be habitually encountered along the coasts of the region. These fish may have been consumed fresh or may have been transformed into brine or sauce, and because of this it is difficult to know in what form they were deposited on the pyre. It is even possible to envision, given the small size of the fish bones, that some of these skeletal elements may have come from the stomach of the deceased and been burnt at the same time as the corpse (even if there's no evidence of digestion on the bones).

Study of the faunal assemblages from the tombs has revealed that they are quite different from each other.

12 Van Andringa et al. 2013; Lepetz 2017.

Some tombs are rich in pig, others in fowl, and yet others in fish. And yet others have no faunal remains at all. The image emerging from the analysis of the animal remains from *Porta Nocera* and of their link with the funerary rituals is that of a sort of freedom, reflected in the relative diversity of the gestures.

The other category of faunal remains at *Porta Nocera* are the approximately 2000 non-burnt bones that were found dispersed at ground level, as part of secondary deposits within the tomb fill, on the walkways, or on the road network. The degradation of the bone surfaces and the anatomical distribution reveal that these items have been subject to attack by atmospheric agents, to trampling, and to detritivores. The non-burnt bones have all the characteristics of food remains, with 60 % pig versus 30 % caprines. Chicken bones are rare. The fragmentation and butchering marks indicate that a large proportion of these bones could be food waste. The material that is present on the circulation levels (fragments of fine ceramics, lamps, balsamaria) seems to be evidence of gestures performed in the enclosure, and the admixture of bones could be part of this evidence, as traces of a meal taken around the pyre or around the tombs.

The animals are involved in funerary gestures relating to the placing of the pyre, and they were part of banquets. But they did not form part of the deposits (in the form of unburnt pieces of meat) at the moment when the remains of the deceased were placed into the ground. This is a notable difference with the practices in northern Gaul.

Gallo-Roman practices in northern Gaul: Between traditions and new customs

Rescue archaeology conducted in northern France over the past two decades, as well as excavations carried out somewhat longer ago, have brought to light many cemeteries, of which the animal bones have been studied. The total of 20 sites, 14 of which are unpublished and six of which are published, contained 464 tombs with animal remains. These date from the 1st century BC to the 5th century AD and come from the *civitates* of the *Atrebates*, the *Nervii*, the *Morini*, the *Ambiani*, the *Veliocasses*, the *Viromandui*, and the *Parisii (fig. 2; tab. 1)*.

Among these excavations, those conducted prior to the digging of the Seine–Nord Europe Canal and the creation of the "Actiparc" at Saint-Laurent-Blangy have yielded remarkable assemblages and have been the subject of particular attention. For the most part, the excavations have been conducted with great precision, and the quantity of information that they have yielded is very significant.

For the High Empire (referring to the reign of Augustus/Claudius through to Trajanus), we can use Marquion (Site 1 and Sector 22–23) to anchor our reflection, because the tombs, which are rich, have been dated relatively precisely, and because they extend over multiple phases. For the period of the Low Empire, the site of Louvres can perform the same function, because it has yielded many tombs in which the animal remains are well preserved. We can clarify certain phenomena with the help of other examples and thus add several other sites to the synthetic overview.

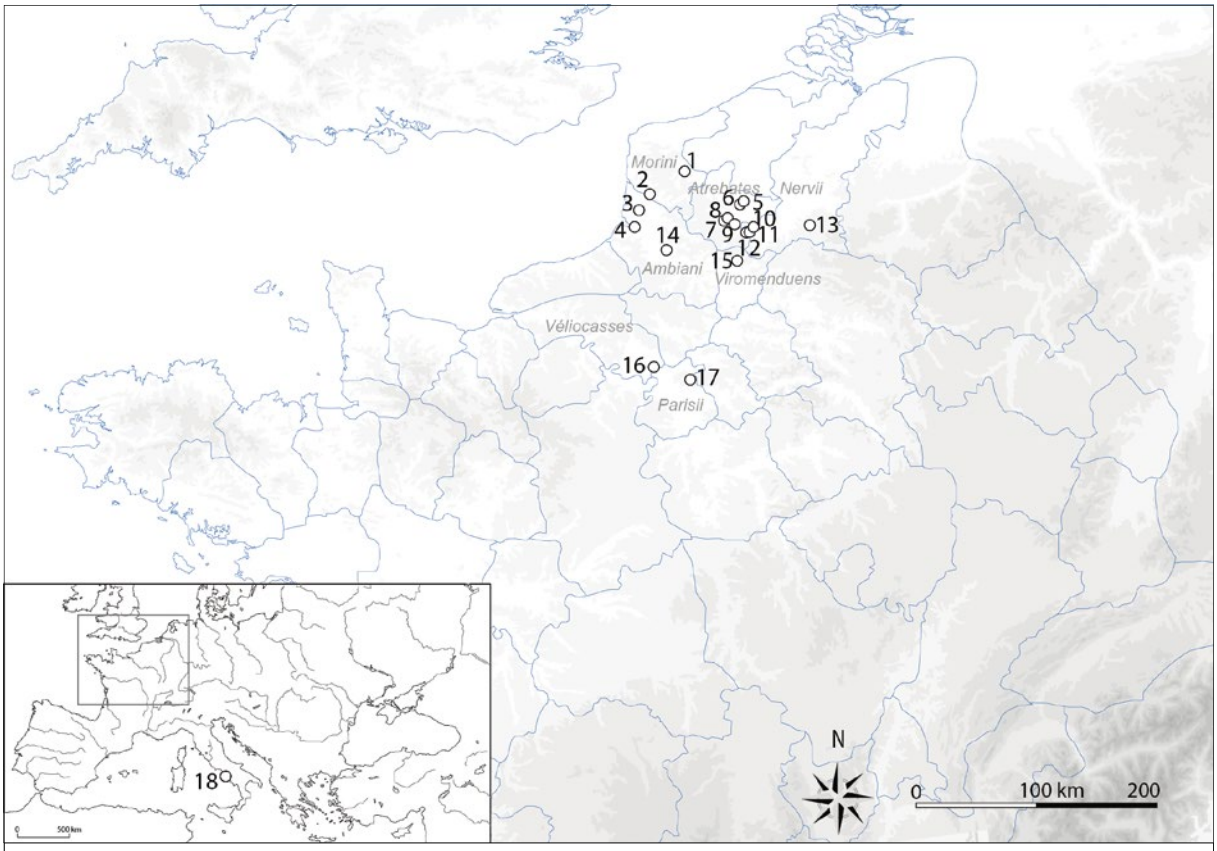
It must be noted that the link between unburnt remains and burnt remains cannot be fully made, because it was not feasible to systematically study the assemblages of burnt bones and to separate out the animal bones from all the sites. The circumstances of the excavation, analysis, and storage, as well as time restrictions relating to analysis, do not always favour a complete analysis.

The end of the 1st century BC and the 1st century AD

At Marquion Site 1 *(fig. 3)*, 49 of the tombs yielded remains of animals. Of these, 37 contained unburnt animal bones; 22 contained burnt animal bones, found in funerary urns or among the human remains; and ten contained both burnt and unburnt animal bones. The gesture of depositing an animal on the pyre or in the tomb was thus not systematic. Some yielded several hundred animal bones, while others contained fewer than a dozen.

The non-burnt remains are mainly of pig, followed by domestic cockerel and, in much lower proportions, sheep, cow, dog, goose (*Anser anser*), hare (*Lepus europaeus*), equids, and fish.

Pig is present as cut pieces of meat. Ten tombs yielded one or two halves of crania cut longitudinally



1 : Thérouanne	6 : Hénin-Beaumon	11 : Marquion	16 : Epiais-Rhus
2 : Marenla	7 : Arras	12 : Baralle	17 : Louvres
3 : Vron	8 : Saint-Laurent-Blangy	13 : Bavay	
4 : Noyelles-sur-Mer	9 : Monchy-le-Preux	14 : Bettencourt-Saint-Ouen	18 : Pompeii
5 : Dourges	10 : Oisy-le-Verger	15 : Moislain	

2 Location of the sites discussed in the text.

(i. e. midline, on the sagital plane). These halved crania were deposited with the cut side down, to ensure that the piece of meat was still recognisable as a head.

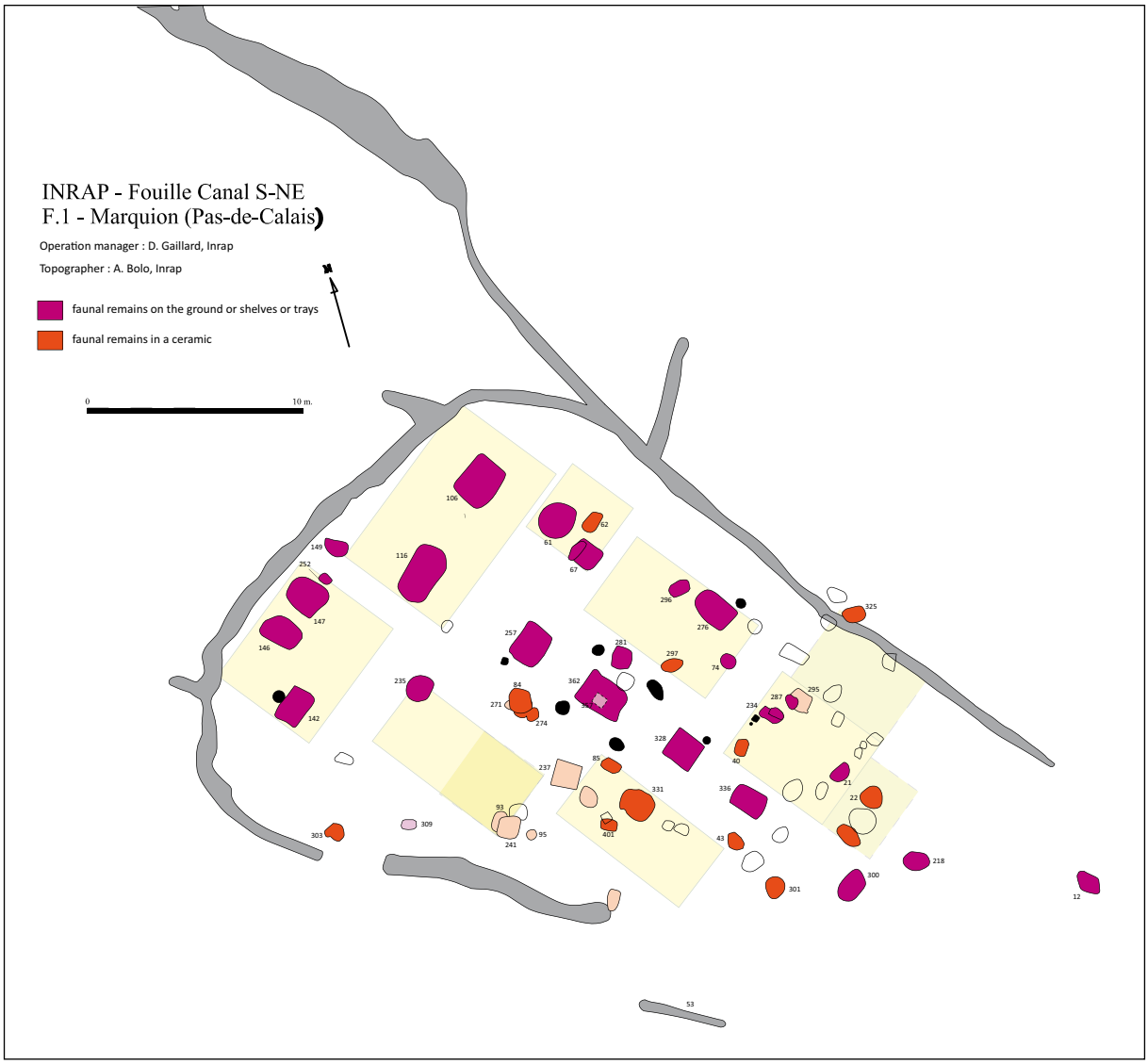
Deposits involving the hindlimbs are quite common (eight tombs, for a total of ten hams). The butchering produced a portion that goes from the hip bone to the foot. In four cases, the feet were separated from the leg. Forelimbs are less common. No complete examples have been found, and only three tombs yielded pieces of the forelimb. In contrast, the forefeet are well represented. Skeletal elements from the neck (cervical vertebrae), upper back (thoracic vertebrae), and lower back (lumbar vertebrae) are relatively plentiful and were often found in anatomical articulation. They result from the cutting up of the carcass. Some tombs also contain the tail, and some contain the ribs, often as more or less complete series. Other contemporary sites present a similar picture, with little variation in the kinds of meat portions present. There do not appear to have been any rules about which half of the body was to be used: for both the halved heads and the limbs, there are an equal number of rights and lefts *(fig. 4)*.

Both male and female pigs are present *(fig. 5)*. At Marquion, males are more numerous, but in the combined sample, the sex ratio (11 males vs. 8 females) does not show any preference and appears to indicate that the animal's sex was not an important criterion.

The presence of the halved crania allows us to analyse dental eruption and wear in order to estimate biological age. The pigs are mostly under 1.5 years old *(fig. 6)*, and this age at death is similar to that observed on settlements in the region, although it is slightly younger in the tombs. In addition to adult, sub-adult, and juvenile pigs – represented by parts of the torso, the limbs, and the feet, as well as halved crania – the site also yielded very young piglets. These were deposited intact and not butchered. At Marquion, in three out the five tombs with piglets, piglets were deposited in pairs. In some of these piglets, the dp4 has barely erupted; in others, it has erupted but is not yet in wear. These individuals were thus at most a few weeks old.

	Site	*Civitas*	Sector	Excavator	Cremation graves (n)	Inhumation graves (n)	Graves with animal remains (n)	Period	References for site	References for faunal analysis
1	Thérouanne	Morini	Les Oblets et Le Caveau	C. Barbet (Inrap), F. Thuillier (Inrap)	20		7	2nd–3rd century AD	Barbé et al. 1996; Thuillier 1996; Thuillier 1997	Lepetz unpublished data
2	Marenla	border Nervii/Morini	Le But de Marles	D. Piton		26	12	4th century AD	Piton et al. 2006	Lepetz / Piton et al. 2006
3	Vron	Ambiani		C. Sellier	presence	presence	1 (cremation) + 34 (inhumation)	end 4th–beginning 5th century AD	Seillier 1978	Méniel 1995
4	Noyelles-sur-Mer	Ambiani		D. Piton		31	7	4th century AD	Piton et al. 1978	Piton et al. 1979
5	Dourges	Atrebates		P. Demolon (Service archéologique de Douai)	presence	presence	7 (cremation) +33 (inhumation)	4th century AD	Méniel 1995	Méniel 1995
6	Hénin Beaumont	Atrebates	ZAC du Bord des eaux	J.-F. Geoffroy (Afan)	10	19	5 (cremation) + 6 (inhumation)	1st & 4th centuries AD	Geoffroy 1997; Geoffroy 1998	Lepetz, unpublished data
	Hénin Beaumont	Atrebates	RD40	R. Clotuche (Inrap)	10		2	1st century AD (AD 30–40 for faunal remains)	Clotuche / Millerat 2004	Lepetz, unpublished data
7	*Nemetacum*-Arras	Atrebates	Conseil Général Rue de la Paix	A. Jacques & D. Gaillard (Service archéologique d'Arras)		presence	4	4th century AD	Jacques / Gaillard 2006	Lepetz, unpublished data
8	Saint-Laurent-Blangy	Atrebates	Actiparc	A. Jacques & G. Prilaux (Service archéologique d'Arras and Inrap)	51		14 (cremation) + 4 (inhumation)	Roman period	Jacques / Prilaux 2003	Lepetz, unpublished data
9	Monchy-le-Preux	Atrebates	La Chapelle de Feuchy	A. Jacquet & P. Rossignol (Service archéologique d'Arras)	presence		5	2nd century AD	Jacques / Rossignol 2001	Lepetz, unpublished data
10	Oisy-le-Verger	border Atrebates/Nervii	Fouille 13	T. Marcy (Inrap)	17		7	La Tène D–Claudian period	Marcy 2011	Lepetz, unpublished data
11	Marquion	border Atrebates/Nervii	Site 1	Denis Gaillard (Inrap)	152	3	52	end of La Tène–3rd century AD	Gaillard 2017	Lepetz, unpublished data
	Marquion	border Atrebates/Nervii	Zone 22–23	C. Barbet (Inrap)	7	presence	5 (cremation) + 6 (inhumation)	last third of 1st century AD and first decades of 2nd century AD	Barbet 2017	Jouanin / Lepetz, unpublished data
12	Baralle	border Atrebates/Nervii		C. Hosdez & A. Jacques (Service archéologique d'Arras and Inrap)	100		23	end 1st–beginning 2nd century AD	Hosdez / Jacques 1989	Méniel 1989
13	Bavay	Nervii	Fache des près Aulnoys	F. Loridant (Service archéologique départemental du Nord)	169		66	1st–3rd century AD	Loridant / Deru 2009	Forest 2009
14	Bettencourt Saint Ouen	Ambiani		P. Lemaire (Inrap)	8		7	High Empire	Lemaire 2000	Lepetz, unpublished data
15	Moislain	Viromandui	Fouille 15 Au petit chemin de Nurlu	S. Sarrazin (Inrap)	14		9	High Empire	Sarrazin 2011	Lepetz, unpublished data
	Moislain	Viromandui	Fouille 27 Au petit chemin de Nurlu	J. Lamant (Inrap)	16		8	first half of 1st century AD	Lamant 2014	Lepetz, unpublished data
16	Epiais-Rhus	Veliocasses		J.-M. Lardy		presence	37	Late Empire	Lardy 1983	Méniel 1995
17	Louvres	Parisii	ZAC du Parc	A.-S. Vigot (Éveha)		250	103	3rd–4th or 5th century AD	Vigot et al. 2014	Lepetz, unpublished data

Tab. 1 Sites discussed in the text. The numbers match those on the map.



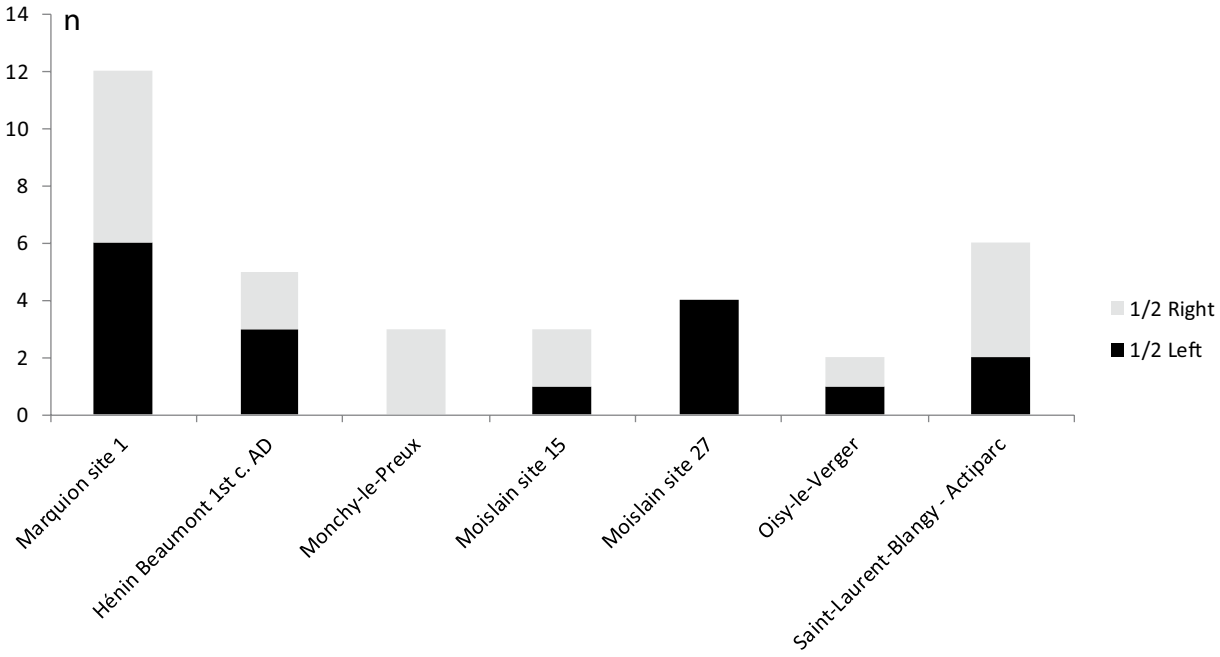
3 Marquion Site 1. Site plan. (CAD: A. Bolo, D. Gaillard, Inrap).

In the case of chicken, the preservation conditions were not always favourable to precise observations, but it seems that most of the time the birds were deposited whole in the tomb. There was no sex selection (both hens and cockerels are present) nor age selection (both juveniles and adults are present). The anatomical distribution is normal except for the head, which could have been removed during food preparation.

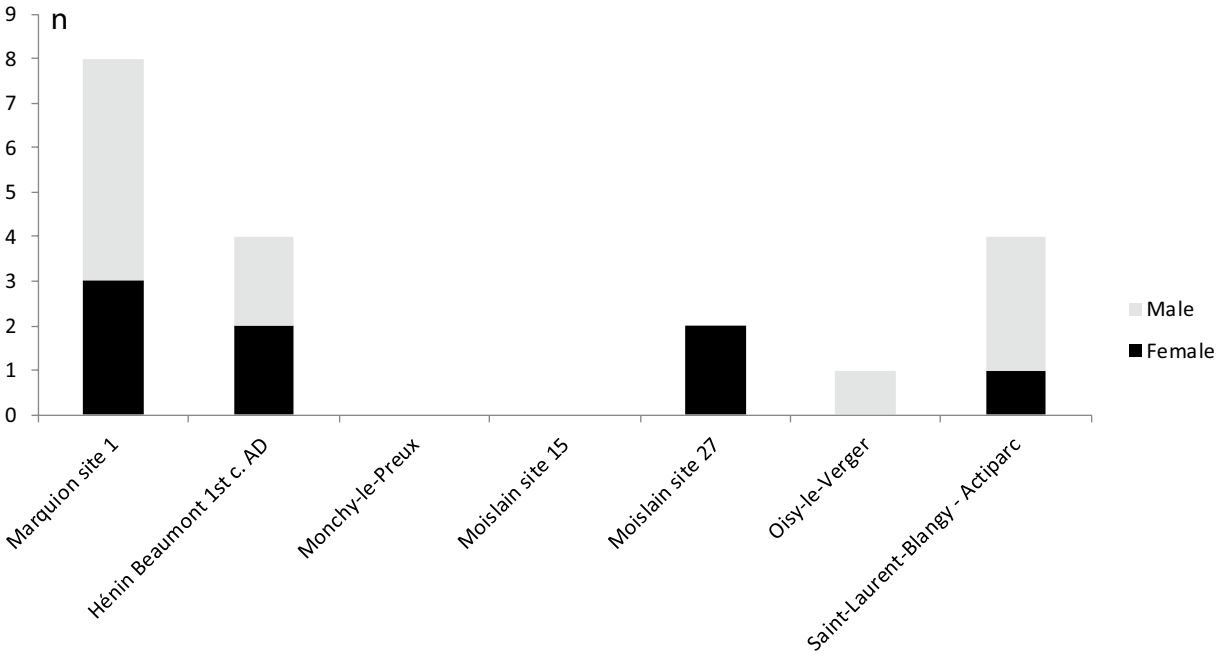
Caprines are rarer than pig. At Marquion, eleven tombs yielded remains of caprines. Their proportion matches that of chicken, but there are differences in representation among the time periods. At Baralle, they are present in just three of the 24 tombs, whereas pig is present in 19. Limb bones predominate. At Marquion, no caprine crania, vertebrae, or feet were deposited in the tombs. Moislain yielded multiple ribs, Baralle yielded a series of four lumbar vertebrae, and Thérouane yielded one vertebra, but these skeletal elements are in the minority. The other difference with pig is the presence of forelimbs, and not just hindlimbs. For the most part, these are of young animals. ST147 at Marquion contained one right and one left forelimb of a lamb. At Baralle, the legs of lamb are from juveniles.

Remains of cattle were identified from three sites. At Moislain Site 15, a piece of meat from the top of the thigh was represented archaeologically by a fragment of the innominate and the sacrum. At Marquion, the remains indicate larger pieces of meat: one tomb yielded a series of five ribs (the flank), and another tomb *(fig. 12)* contained a series of four complete right ribs. At Baralle, cattle is also represented by series of ribs, in three tombs, and by a butchered heel of an adult individual.

Goose is only present at Marquion. Goose occurs at Site 1, in the tombs from the end of the 1st century BC, as



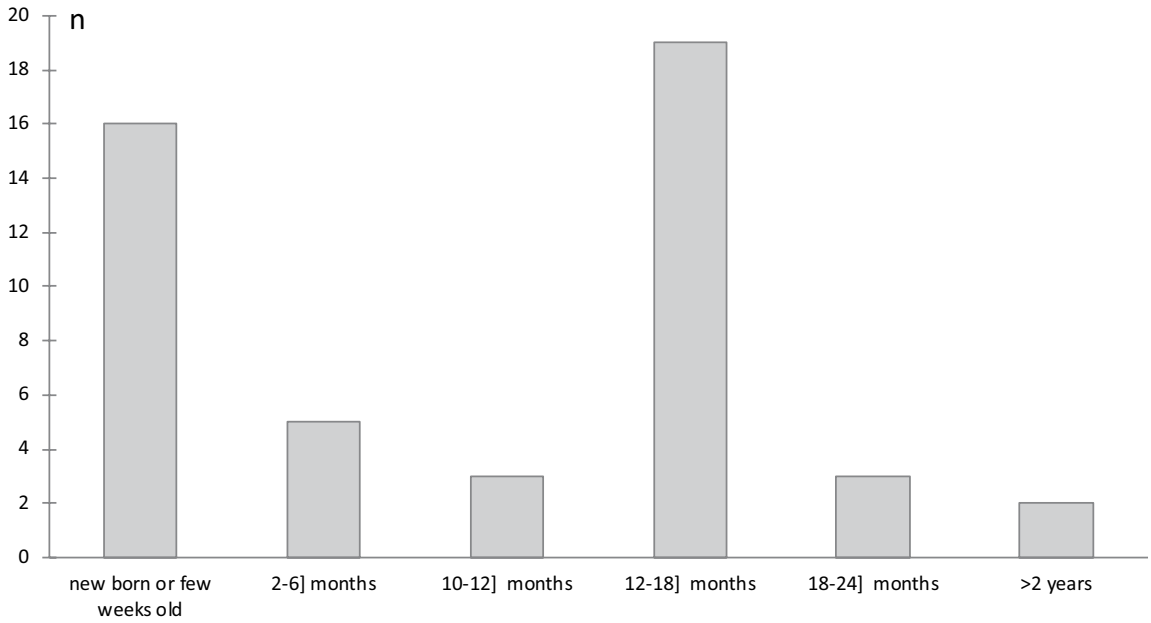
4 Body half distribution of the halved pig's crania by site.



5 Sex distribution of the halved pig's crania by site.

pieces of meat: thighs or various parts. Goose also occurs somewhat later, in tombs of Sector 22–23 (end of 1st century–beginning of 2nd century AD), as complete or almost complete animals. Here, burnt goose bones were also often found mixed with burnt human bones.

Dog is rare. Only one cervical vertebra and one tibia at Marquion Site 1 may represent food remains. Horse (*Equus caballus*) is present in just two tombs, at Marquion. A tibia may represent a piece of meat, but a right metacarpal III and a vestigial metacarpal placed on a piece of ceramic *(fig. 7)* do not. The other skeletal elements that should have been present if this had been an entire foot (that is the carpals and the phalanges) are absent. A knife cut on the diaphysis indicates human action, but not of disarticulation. We therefore have to conclude that certain portions of the carcass have a



6 Age distribution of the pigs, combined sample from sites dating from the end of the 1st century BC to the 1st century AD.

non-dietary significance. We will see another example of this further down, among the defleshed assemblages.

Remains of wild mammals are never frequent in the tombs. When they are present, probably relating to prepared food, they show up as smaller pieces. At Marquion Site 1, one ceramic vessel yielded 42 bones of what was likely a single individual of young hare, deriving mostly from the anterior part of the body (cranium, ribs, forelimbs, lumbar vertebrae). Tomb 428 at Marquion Sector 22–23 yielded a thigh of a hare.

Fish, crustaceans, and shells are also rare in the tombs. One item of pike (*Esox lucius*) at Marquion and one of chub mackerel (*Scomber japonicus*) at Moislain indicate that deposits of fish were sometimes placed in tombs dating to the beginning of the 1st century AD. The presence of chub mackerel (*Scomber japonicus*), which frequents the Mediterranean and the Atlantic coast of southern Europe, is evidence of items acquired by means of trade with areas farther south. These are several vertebra of a large individual, probably originally part of a piece of salted fish. The situation for shellfish is less clear. The oyster (*Ostrea edulis*) and abalone (*Haliotis tuberculata*) found at Thérouanne and the shells (not identified) from tomb 429 at Marquion Sector 22–23 may be imported foods in their own right, but they may also be imported containers for other products or items used in the preparation of medicines. The same holds for the cuttlefish (*Sepia* cf. *officinalis*) cuttlebone (which was burnt) found at the same site. This was probably an ingredient for a preparation for eye infections, as were other products and utensils found there[13].

The faunal remains found among the groupings of burnt human bones tell us about another stage of the funeral ceremonies: the deposition of pieces of meat on the pyre. The tombs from Phase I at Marquion have not yet been studied. Some of the pyres from Phases II and III yielded isolated remains of pig, indicating the practice of placing pork on the pyre. The frequent remains of domestic chicken indicate that chicken was preferred to pork for this phase of the ceremony. This is especially evident for the phase corresponding to the middle of the 1st century to the middle of the 2nd century AD, where almost half of these assemblages of bone contain the burnt remains of chicken, whereas only about 10 % contain those of pig *(fig. 8)*. This predominance of chicken over pig is seen at the site of Bavay[14], where, of the 68 cremations yielding burnt faunal remains, pig is present in just four cremations, cow in six, and bird in 28. It is probable, although not proven, that these animals were deposited intact. We can see that the different species were not used indiscriminately, but that their presence had different meanings at different times in the funeral proceedings.

At Marquion, we can see changes in the taxonomic composition. Certain taxa are mostly present during the early phases of the site. Thus dog, hare, goose, cattle, and fish show up mostly from the end of the 1st century BC to the very start of the 1st century AD. In the phases that

13 Barbet 2017.

14 Forest 2009.

7 Marquion Site 1, tomb ST 287. A horse metacarpal (D) is clearly visible on top of the ceramics. (Photo: N. Vandamme, H. Trawka, D. Gaillard, Inrap).

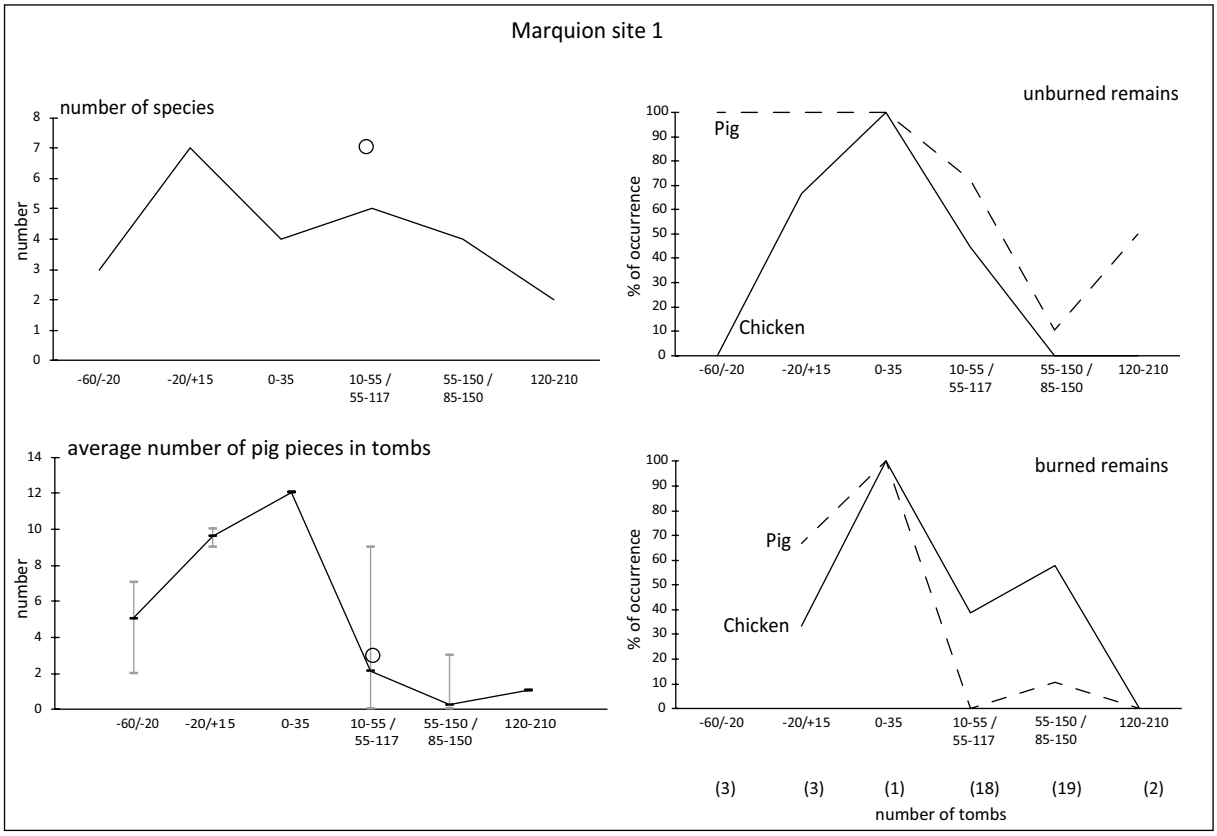
follow, there seems to be a simplification, with essentially only three taxa present: pig, chicken, and caprines. At the same time, we see a reduction in the number of pieces of meat in the tombs. Until the middle of the 1st century AD, the number of pieces ranges between six and twelve. After that, it drops to just two, indicating that offers in the tombs become rarer starting in the middle of the 1st century AD.

With a few minor variations, this trend is seen in all of the sites under study here *(fig. 9)*. A comparison of the unburnt deposits for the combined sample of all the tombs in the regions shows that all of the domestic mammals are present in the 1st century AD, accompanied, for this period, by chicken, goose, and hare, but that their proportions are very variable. Their percentage in tombs yielding faunal remains ranges from 50 to 90 % for pig, to around 50 % for chicken, to 10 to 15 % for caprines and cow, to at most 5 % for each of the other taxa.

By the middle of the 2nd century AD, five species are no longer found in the tombs: cattle, dog, horse, goose, and hare. A few isolated examples are found in Late Antiquity. The percentage frequency of caprines gradually decreases, but they don't disappear. Pig and chicken also become less frequent, but while pig continues to decrease, chicken starts to increase again starting at the end of the 2nd century AD, becoming largely predominant. We thus see three developments: first, we see a reduction in the number of offerings during the 1st century AD and the beginning of the 2nd century; second, we see an abrupt change in taxonomic representation, with the disappearance of the lesser taxa around AD 150; third, at this same time, we see a major preference for chicken, at the expense of pig, which now becomes a more minor taxon. Below I describe these changes in detail for the Late Empire and show that they are accompanied by changes in the pig deposits.

The staging of certain anatomical elements, their placement in containers made of perishable materials, and their placement on elevated shelving, as is sometimes observable in certain tombs, reveals the complexity of the funerary practices. Variation over time in the customs and in the taxa used marks changes related to modifications of local customs or family traditions.

At Marquion Site 1, the way in which the animal deposits are placed changes over time. At the end of the terminal La Tène, the offers are placed in the bottom of the pit in 50 % of cases. They are found placed close to the ceramics or may have been deposited in a container that has since disappeared *(fig. 10)*.



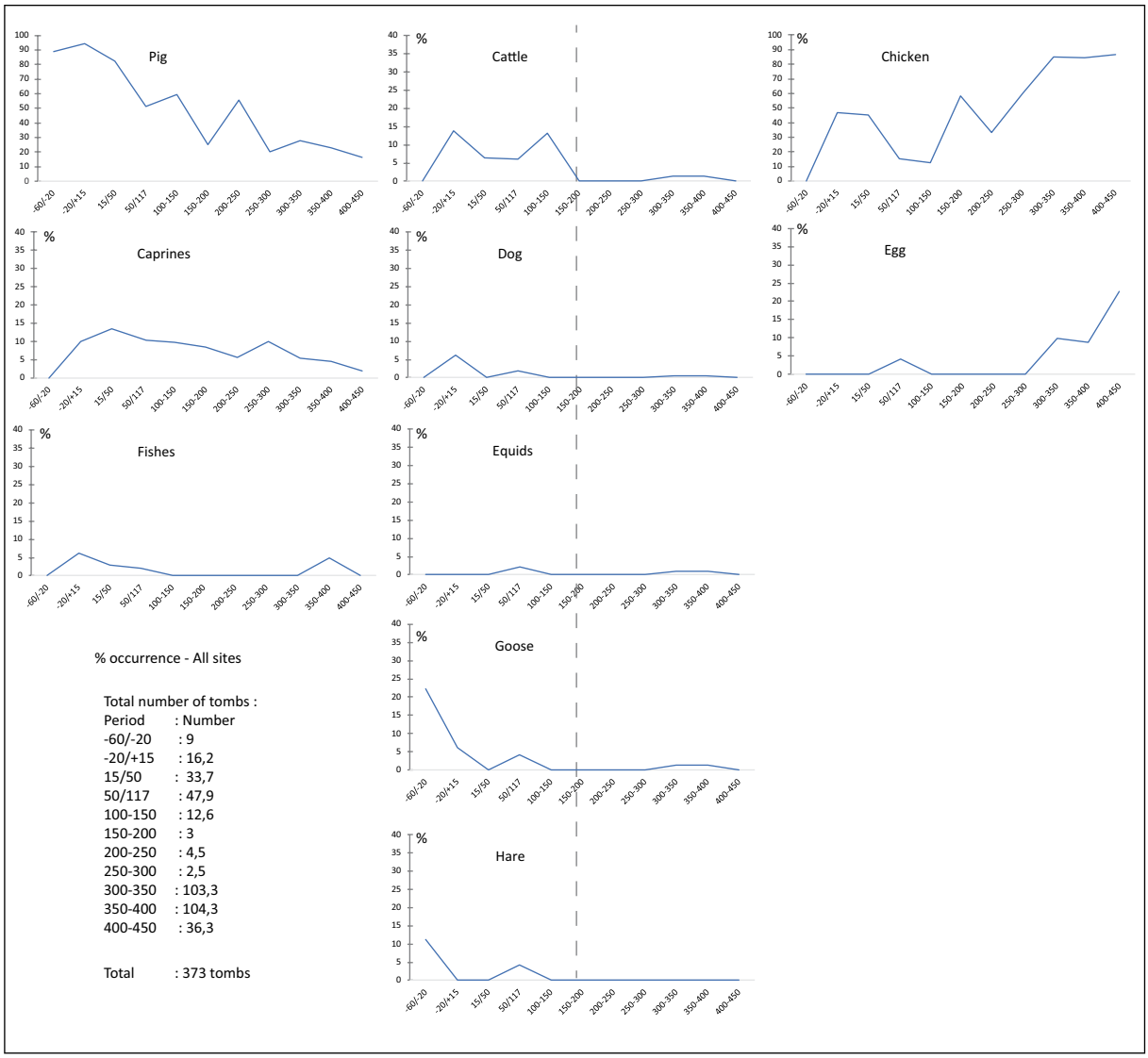
8 Marquion Site 1. Chronological distribution of number of taxa, average number of pig remains, %-frequency of unburnt pig and chicken, and %-frequency of burnt pig and chicken. The open circle marks the remains from Sector 22–23 (in years BC [indicated by minus sign] or AD).

The second category comprises animal offerings placed on a shelf or a platter *(figs 11 and 12)*. At the beginning of the 1st century AD, offerings become more numerous and are placed in the tombs in a different arrangement. Thus, tomb 362 yielded animal offerings placed in horizontal position above three items of pottery *(fig. 12)*. These items, which were all the same height and placed at regular intervals, appear to have supported a plank. Tomb 328 contained, in the middle and against its west wall, remains of animals that were bordered on the east and west by funerary urns. The presence of nails and woodworking staples nearby also suggests use of a plank. Tomb 257 also has indications for the use of a rectangular plank. The presence of six woodworking staples and of ironwork and an iron rod found around and under the bones seems to support this hypothesis. These items had been placed in the north corner of the tomb. In the case of tomb 142 *(fig. 11)*, the placement of the offering, resting on ceramics in the north corner and along one side of the tomb, suggests the use of a shelf.

Just before the end of the 1st century AD, in some tombs we begin to see food offerings being placed in the tomb on a plate or platter, and the percentages of tombs with deposits placed directly on the ground and with deposits placed in containers become approximately equal. Deposits in containers first make an appearance in the reign of Claudius, and they continue until the start of the 2nd century AD *(fig. 13)*.

Work undertaken on the Lamadelaine necropolis has extensively described the way pieces of meat were staged in the terminal La Tène[15]. These deposits are characterised by the presence of disarticulated and reassembled pieces. The sites presented here show similarities. The deposits at the end of the 1st century BC consist of halved pig's crania associated with cervical vertebra and series of ribs *(fig. 14)*. The head has been split longitudinally, the neck has been severed, and the ribs are not articulated with the thoracic vertebrae (which are missing). These are therefore pieces of meat that were taken from a carcass, cut up, and subsequently reassembled. The deposit gives the impression of an animal that is

15 Metzler-Zens et al. 1999.



9 Chronological distribution of %-frequency of taxa, combined sample (373 tombs). The data (number of tombs and %) are weighted according to the chronological division.

more complete than it actually is. This type of deposit continues fairly late at Marquion, until the Claudian period. Other anatomical elements were subjected to similar treatment. In tomb 26 at Moislains, dating to the Augustan period *(fig. 15)*, a forelimb of a pig appears to be in anatomical position and in articulation, but analysis of the bones revealed the presence of cut marks, indicating that the bones were disarticulated before being deposited in the tomb. Tomb 106 revealed a similar scenario involving the bones of the hindlimb *(fig. 16)*. Often, the natural anatomical position of the bones is not respected during this reassembling. In the case of tomb 106, the orientation of the tibia was reversed during the reassembly, resulting in the distal end of the tibia almost touching the distal end of the femur. It seems that the objective was to place the bones in the outline of a triangle. This type of gesture has also been documented at Lamadelaine and at numerous other contemporary sites, including Moislains (for the Augustan period)[16]. From the end of the first third of the 1st century AD, this custom seems to disappear.

Traces on the bones, notably on the scapula of a pig in tomb 26 at Moislains and on the humerus and scapula of a pig, presented on a plate, in tomb 1066 at Oisy-le-Verger, raise the question of whether or not any flesh remained on the bones. In both cases, it is thought that

16 Metzler-Zens et al. 1999.

10 Marquion Site 1, tomb ST 116. Pieces of meat (L) were placed in a rectangular container made from perishable material (the image has been manipulated, so the animal bones are more clearly visible). (Photo: N. Vandamme, H. Trawka, D. Gaillard, Inrap. CAD: S. Lepetz).

11 Marquion Site 1, tomb ST 142. Chunks of meat (1, 2, 3) were placed on a plank (a shelf?) above the ceramics. (Photo: N. Vandamme, H. Trawka, D. Gaillard, Inrap. CAD: S. Lepetz).

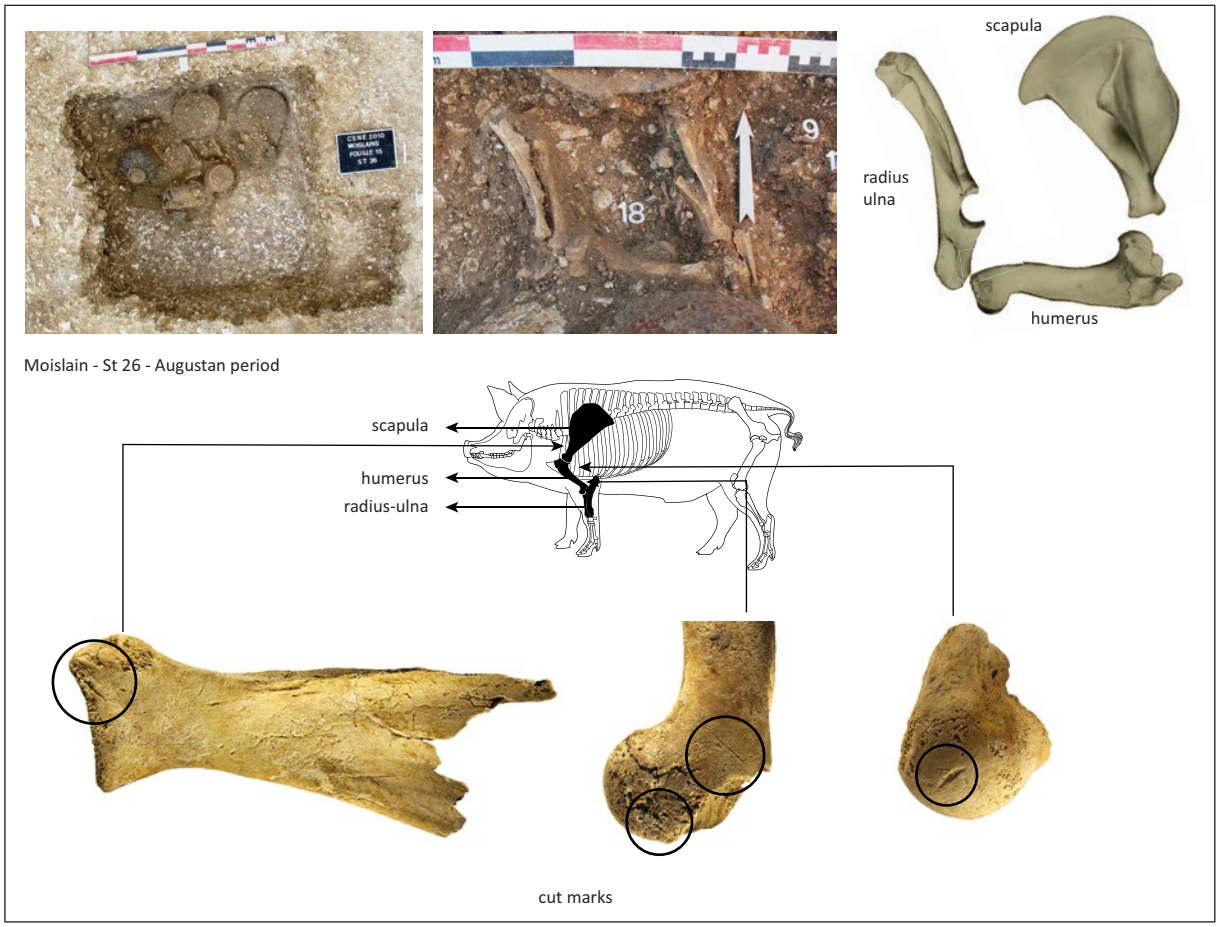
12 Marquion Site 1, tomb ST 362. Chunks of meat were placed on a plank (a shelf?) above the ceramics. (Photo: N. Vandamme, H. Trawka, D. Gaillard, Inrap. CAD: S. Lepetz).

13 Marquion Site 1, tomb ST 331. Right half of a cranium (G) and elements from the shoulder and ribs (E) of a pig were placed in a plate. (Photo: N. Vandamme, H. Trawka, D. Gaillard, Inrap).

Saint-Laurent Blangy - Actiparc ST E557 - 0/+50 AD

Marquion - site 1 - ST 276 - Claudian period

14 Marquion Site 1, tombs 331 and 276, and Saint-Laurent-Blangy Actiparc, tomb ST E557. Examples of skeletal elements in articulation within tombs, consisting of body parts (halved cranium, neck, vertebrae) previously butchered and then reassembled in anatomical position in the tomb. (Photo: N. Vandamme, H. Trawka, D. Gaillard, Inrap. CAD: S. Lepetz).



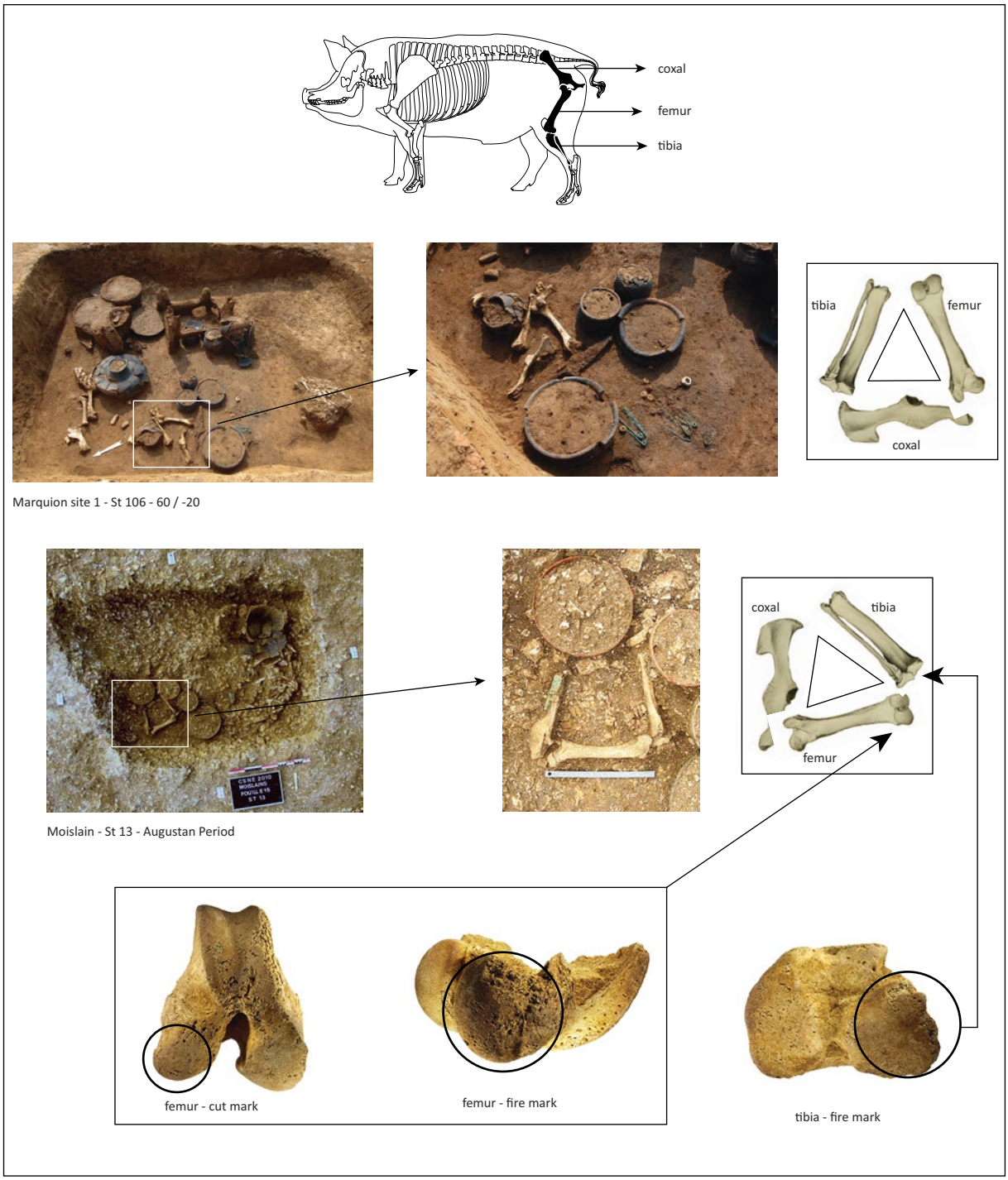
15 Moislain, Fouille 15, tomb ST 26. Elements of pig forelimb, butchered and then reassembled in anatomical sequence in the tomb. The disarticulation cut marks are clearly visible. (Photos: J. Lynch, Inrap. CAD: S. Lepetz).

the flesh had been removed and that only the (defleshed) bones were deposited in the tomb. This question has also been posed for certain series of vertebrae, including the lumbar vertebrae in tomb ST 26 at Moislains *(fig. 17)* and elsewhere (including at Baralle[17]), where the bones are cut on either side of the vertebral body. Finally, certain pieces of evidence indicate that the pieces of meat were cooked. For example, in tomb 13 at Moislains, the bones from the thigh of a pig show cut marks indicating that it was cut into smaller pieces, but also burn marks from being in contact with an open flame, indicating cooking *(fig. 16)*. In tomb 61 at Marquion, traces of burning on the canine of a young sow of 18 months indicate that the fire reached the head, either during singeing of the hide after slaughter or during roasting of the piece of meat.

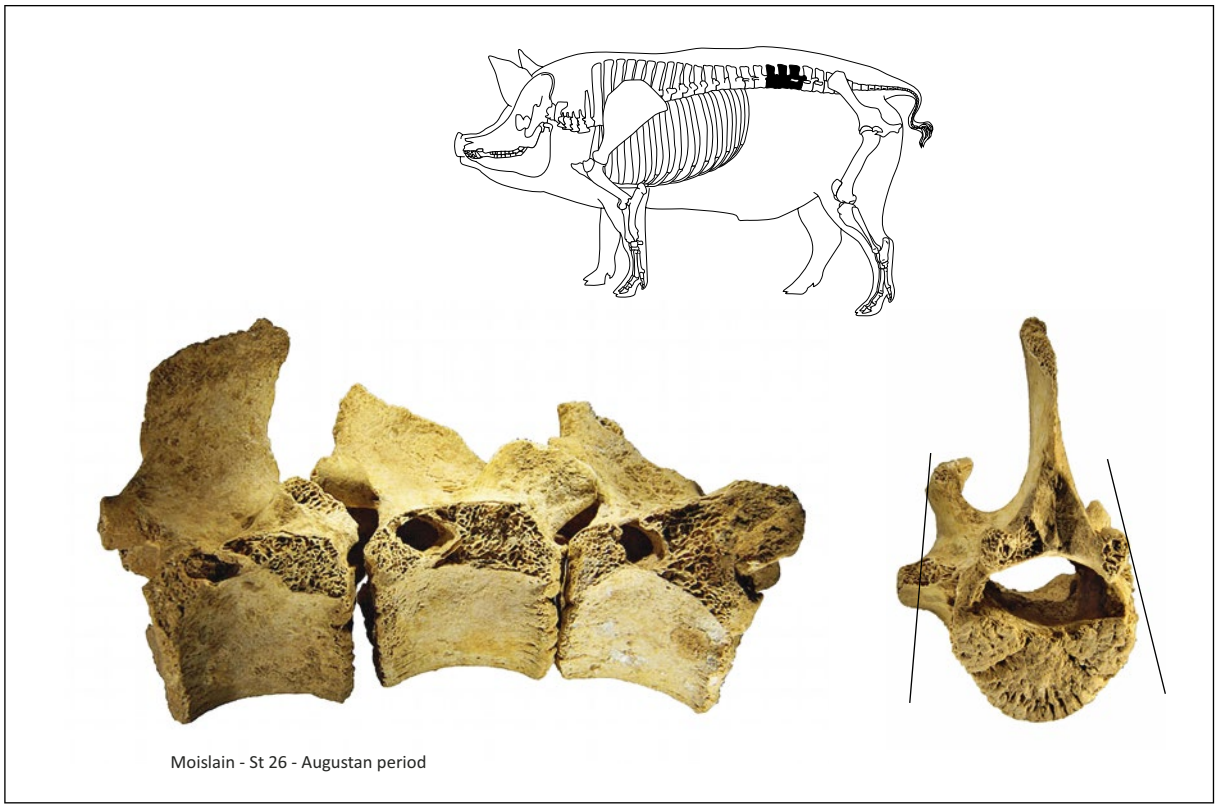
Practices from the 3rd century AD

The Louvres site is an archetype of sites of the Lower Empire in terms of animal deposits, and it presents a wealth of information for this period. The necropolis yielded 255 tombs dating to Late Antiquity, primary individual inhumations in which the deceased, generally clothed or enveloped in a shroud, was placed in a perishable container, which was then covered with a lid, which was nailed shut *(fig. 18)*. About a hundred of the tombs yielded faunal deposits, always associated with serving pieces made from ceramic or glass. The meat was placed either next to the dishes or, in some cases, on top of the dishes, suggesting a staging by means of non-permanent supports.

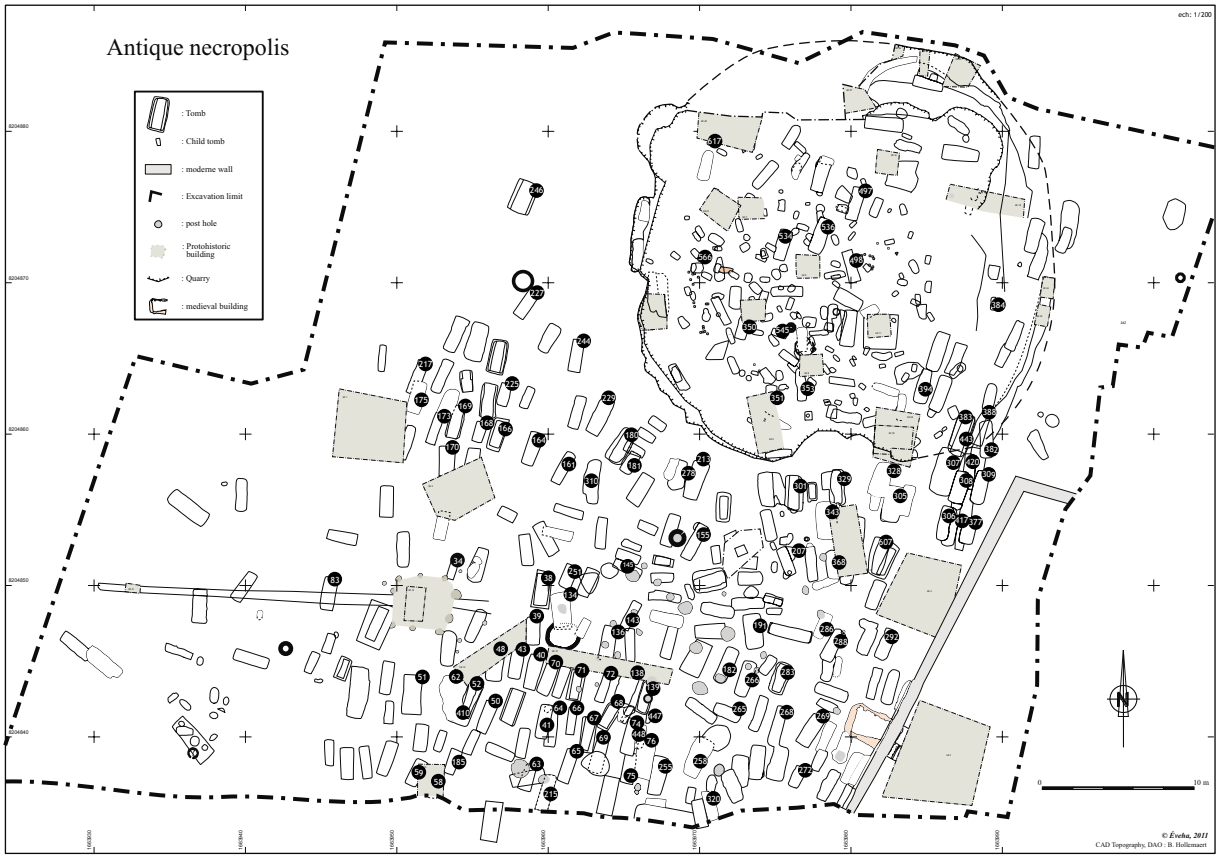
17 Méniel 1989.



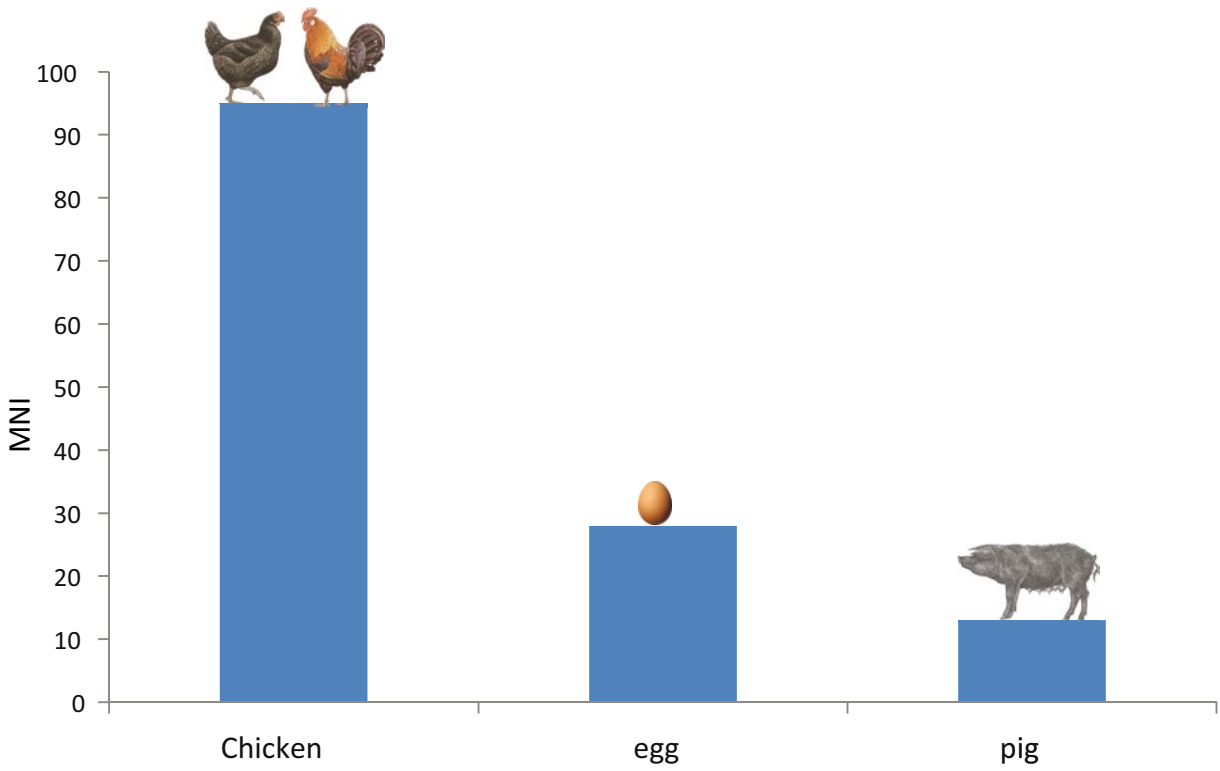
16 Marquion Site 1, tomb ST 106, and Moislains, tomb ST 13. Elements of pig hind limb, butchered and then reassembled in anatomical sequence and placed in the shape of a triangle in the tomb. Traces of cooking are visible on the ends of those from Moislains providing confirmation that the disarticulation happened after cooking. (Photo Marquion: N. Vandamme, H. Trawka, D. Gaillard, Inrap. Photo Moislain: C. Durin, Inrap. CAD: S. Lepetz).



17 Moislain, tomb ST 26. An anatomical series of butchered lumbar vertebrae of pig.



18 Louvres. Location of the structures that yielded primary deposits of faunal remains. (CAD topography, DAO: B. Hollemaert, Éveha).



19 Louvres. Distribution (minimum number of individuals) of male and female chicken bones, chicken eggs, and pig, combined sample.

Animal remains in the tombs

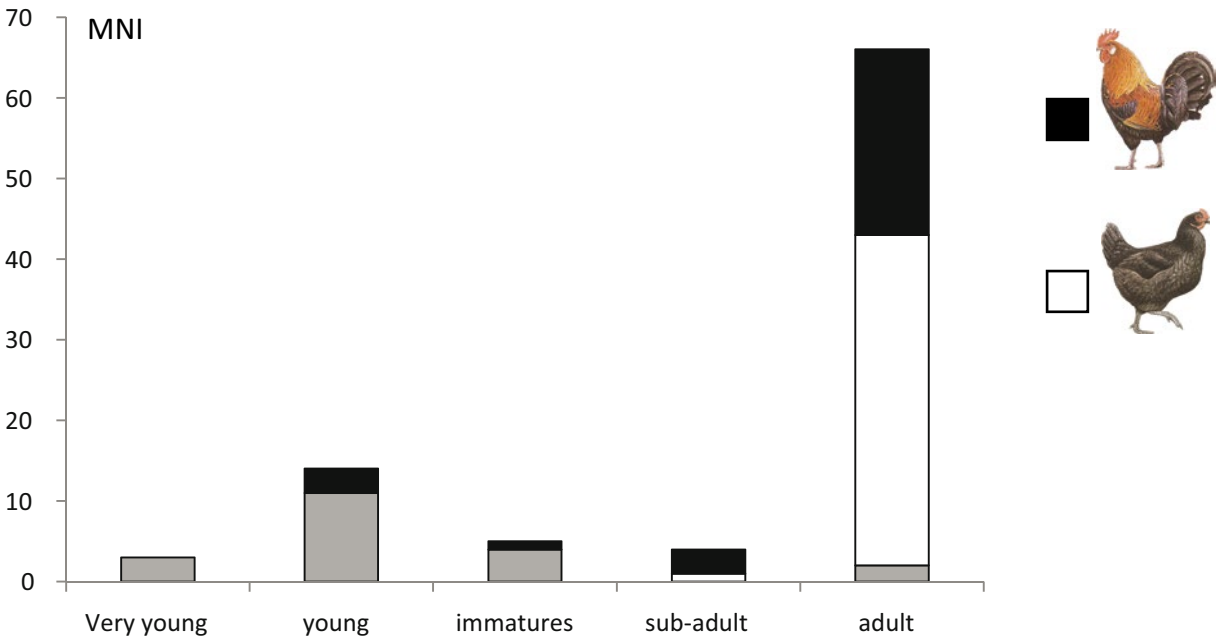
A total of 103 tombs yielded at least one animal deposit – 28 of which yielded two, two of which yielded three, and one of which yielded four. In the majority of cases, these deposits were found in just one or two locations in the tomb. In most cases, they were placed by the head of the deceased or near the upper part of the body (at shoulder level). In three cases, they were placed at the level of the hips or the thorax. In 24 cases, these remains were found at the level of the feet or the lower body. In one structure, bones were found at both the feet and the head.

The best represented taxon is undoubtedly chicken, totalling 99 individuals excluding the 28 cases of eggshell. Chicken remains far outnumber pig, with just 13 specimens *(fig. 19)*. Dog, sheep, goat, and goose are certainly present nearby, in the ditches surrounding the tombs (i. e. in structures that are not tombs), but never directly associated with the human cadavers.

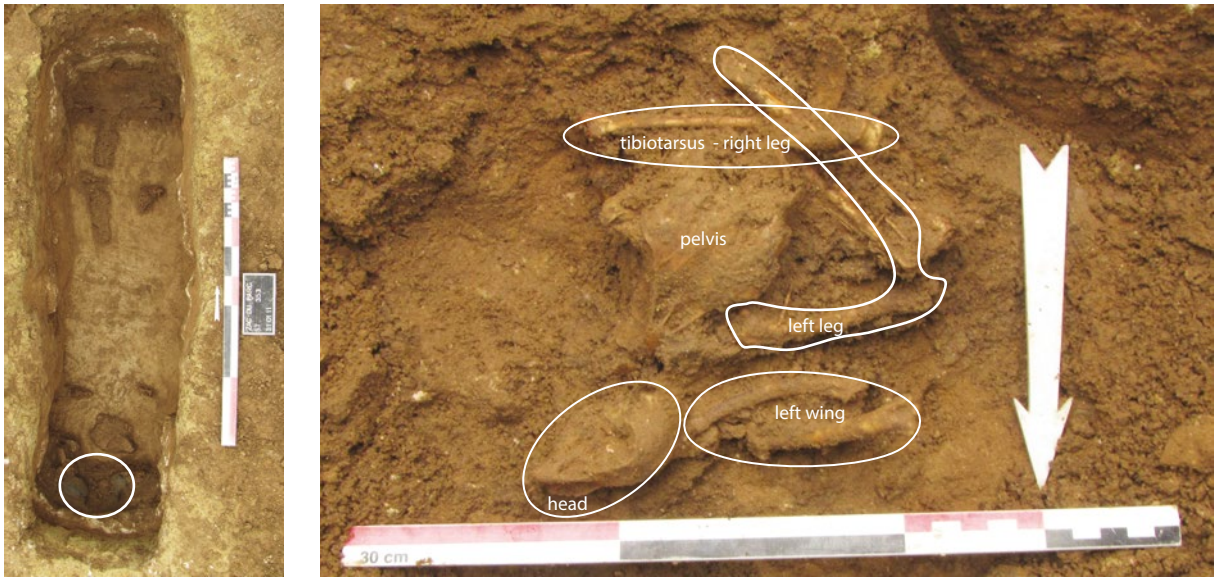
The chicken are not all the same age *(fig. 20)*. Most (66 individuals) are adult, nine are subadult or immature, 14 are juvenile, and three are very young chicks. It is impossible to determine the sex of young birds based on their bones. However, for subadults and adults, the presence of spurs on the tarsometatarsus and the dimensions of this and other bones allow us to distinguish males from females[18]. More females than males were identified (42 female vs. 30 male individuals). We can envisage that males were more numerous among the younger birds, following the logic that males would have been killed young in order to consume their meat, whereas females would have been kept beyond that age, for egg production. If we entertain the hypothesis that all the juvenile chicken found were males, the ratio balances out (42 female vs. 48 male individuals). It is thus possible that there was no sex selection, even though the image provided by the adults shows a preference for females.

One of the consequences of the delicacy of the excavations in certain deposits is that it is possible, in eleven cases, to describe the way in which the birds were positioned *(fig. 21)*, which then allows us to spot cases that do not follow the general rule. Five birds were placed on their stomach, three on their back, one on the left side, and two on the right side.

18 For the osteometric sources used see Lepetz 1996; Clavel 1997.



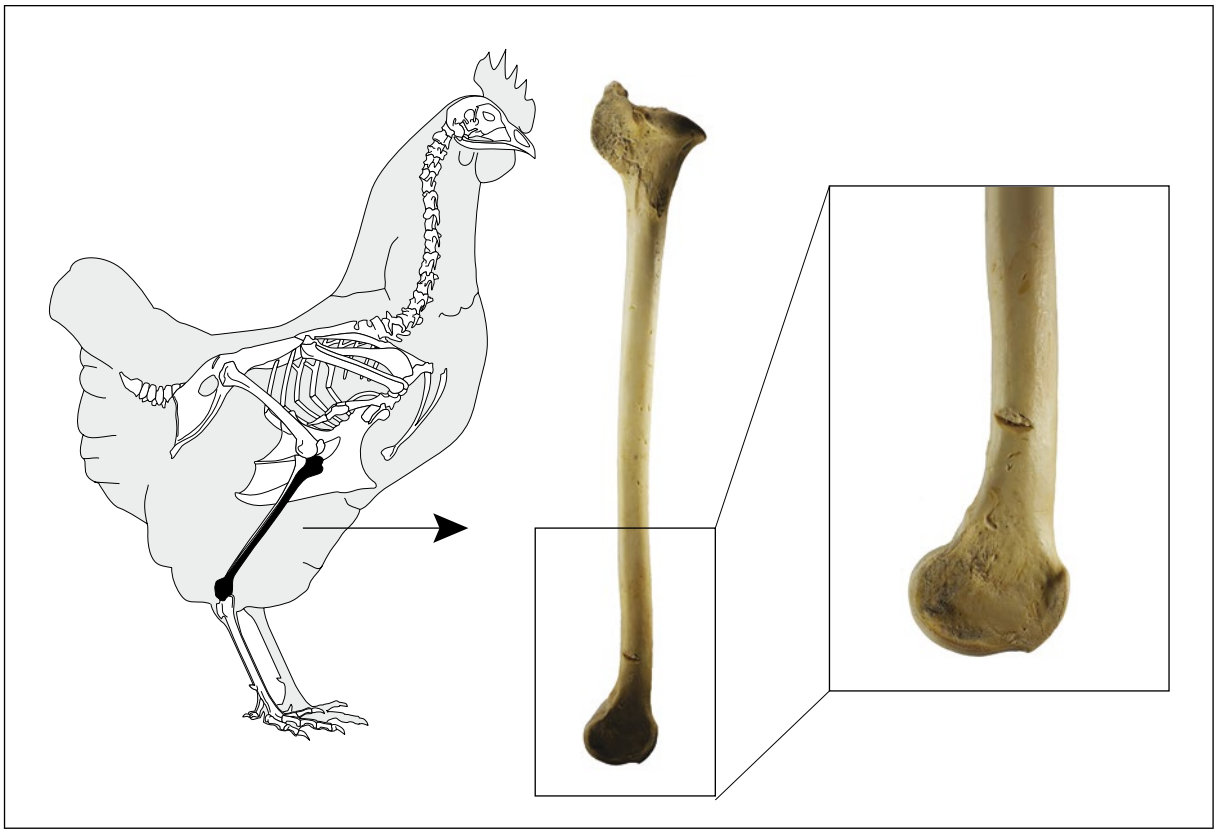
20 Louvres. Distribution (minimum number of individuals) of male and female chicken remains by age, combined sample.



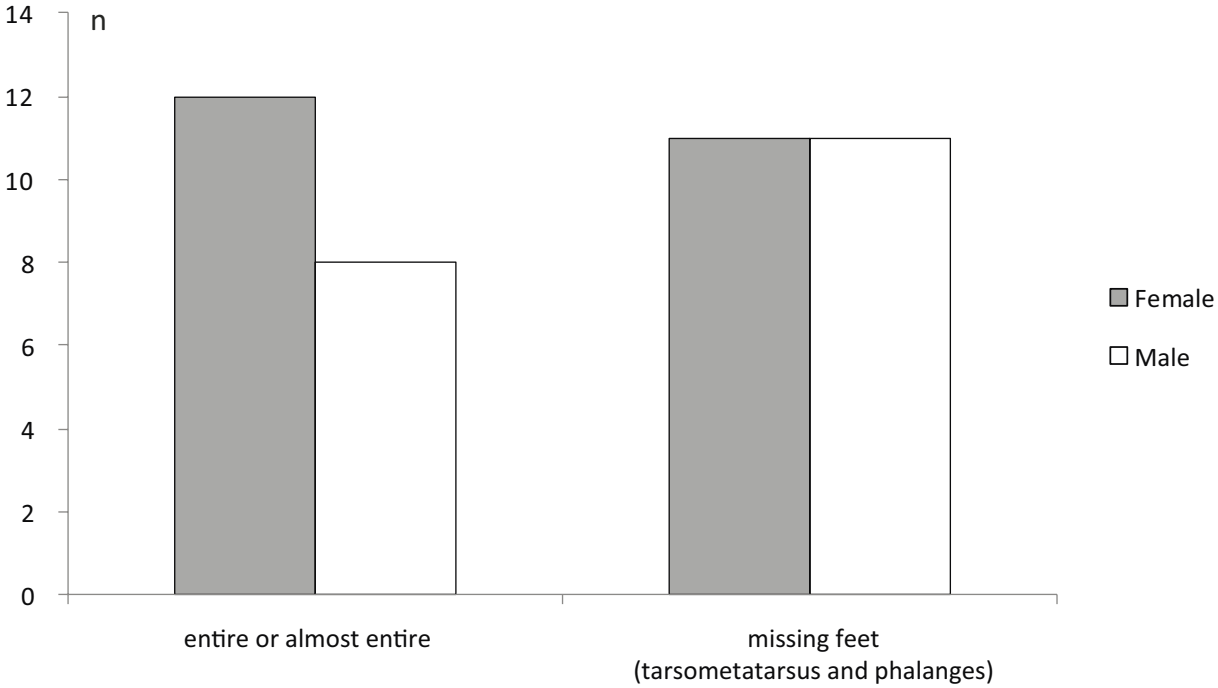
21 Louvres, tomb ST 353. Adult chicken deposited on its stomach, in anatomical sequence. A large portion of the neck is missing, and there is a cut mark on the cranium. (Photo: A.-S. Vigot, Éveha).

The first impression of the excavation and the site photos is that the birds were placed in the tombs intact, but in reality this was not the case. Missing anatomical parts, cut marks, and deliberate fracturing reveal that the individuals underwent some kind of preparation ahead of time *(figs 22 and 23)*.

The hand-collection methods have undoubtedly prevented the recovery of certain bones of certain individuals. About one quarter of the assemblage (25 individuals) is considered incomplete. In certain cases, this raises the question whether this absence is significant. For example, structure 66 contained nothing but two chicken bones and structure 40 nothing but two chicken humeri. In other cases, a much more frequent occurrence, physiochemical agents in the soil have caused some or most of the skeletal elements to disappear, resulting in assemblages with gaps whose origin is difficult to establish. On the other hand, six individuals are fully complete. It is hypothesised that a further 18 must have been deposited intact, considering that only a few



22 Louvres, tomb ST 63. Cut mark on a chicken distal tibiotarsus. The feet have been removed.



23 Louvres. Sex distribution (minimum number of individuals) of birds by presence/absence of feet.

24 Louvres, tomb ST 81. Deposit of a piglet cut into pieces. The positioning of the pieces of meat does not match that in an intact individual. (Photo: A.-S. Vigot, Éveha).

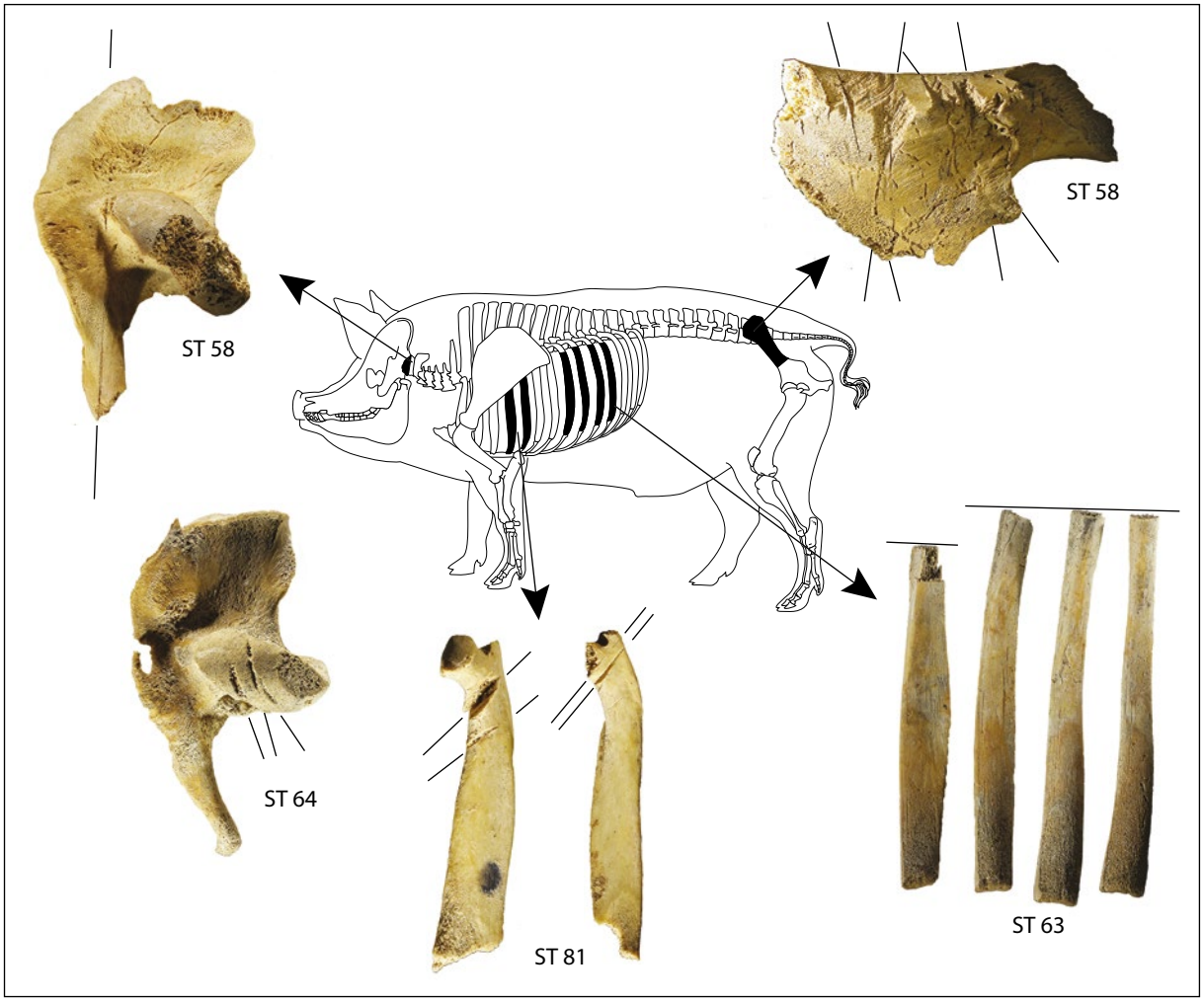
bones are missing, resulting in minor gaps. Following this hypothesis, 24 chicken were deposited intact. In addition to these complete animals, there are 24 others that are intact except for the tarsometatarsus and the foot and wing digits. Of these, 17 show cut marks or fractures at the distal end of the tibiotarsus, indicating that a knife was passed through the articulation with the ankle for the removal of the feet. A further four individuals, in addition to having their feet (tarsometatarsi and foot digits) removed, also had their head and neck butchered (two males and two females), and a further eight were intact except for the head (i. e. they still had their feet). In the case of these latter eight, it is possible that only the head was removed during preparation.

In addition to (almost) complete chickens, subdivided carcasses were also uncovered. In the case of chicken, just one had been subdivided. One hen (structure 182) shows cut marks on the distal ends of the tibiotarsi, indicating that the feet were detached from the rest of the carcass. But the feet are also present in the deposit.

A different scenario pertained to the piglets in 13 other structures. In some cases, the animal was complete or almost complete, and in those cases the missing bones were probably originally present but were missed as a result of excavation and recovery techniques. In other cases, the animal is incomplete. In St 134, for example, the head and the mandibles are present, as are the vertebral column and the ribs. The shoulder of the right forelimb (that is the scapula and the humerus) and parts of both hindlimbs are present. The feet are represented by fragments of the metapodia. The left femur and the right tarsals are missing, as are all of the unfused epiphyses, which is probably the result of problems with recovery. It is difficult to estimate which of the long bones, if any, were missed during excavation, but it seems certain that only part of the animal was deposited. It is noteworthy that no cut marks were observed. The deposit in St 83 is unusual in that it consists solely of the right front trotter; the other parts of the body are not present.

The cutting up into pieces is also attested to by the positioning of the bones and the presence of cut marks. The positioning of the pieces (see, for example, the situation in St 81, *fig. 24*) indicates that there was not necessarily a wish to reassemble the animal by placing the different anatomical parts in their correct position. It is clear that subsequent slumping of the matrix surrounding the meat hampers interpretation, but it is nevertheless possible to see that we are dealing here with the placement of pieces of meat, unlike was the case for the complete piglet in the tombs. Cut marks are comparatively frequent on the occipital condyles, indicating the severing of the head (three cases), as are marks on the ribs (two tombs) and vertebrae (one tomb), indicating the severing of series of ribs from the vertebrae *(fig. 25)*. The piglet from St 454 exhibits numerous marks, including those resulting from the splitting of the head into two parts.

In general, only a single offering was placed in each tomb, but some tombs have yielded multiple animals deposited simultaneously. In all other aspects, these multiple deposits resemble the single deposits, in that neither the species, nor the parts deposited, nor the treatment of



25 Louvres, tombs 58, 63, 64, and 81. Anatomical position and location of cut marks on piglet bones.

the carcass differed *(fig. 26)*. Four of the tombs yielded multiple chicken and six yielded a combination of chicken and pig. It is noteworthy that, while isolated chicken are common, all of the piglets were associated with either a bird or an egg.

The tombs yielded 28 eggs, from a number of different structures, either in ceramic vessels *(fig. 27)* or loose. In some cases, the state of preservation of the egg only allowed the collection of small, isolated fragments of eggshell. In other cases, the eggs could be lifted in one piece or excavated *in situ*, and this revealed that they were whole, not broken. It is of course impossible to know whether all the eggs were whole, but it seems likely. The thickness of the eggshell falls within the reference range established for modern chicken eggshells by Keepax and Jonuks et al.[19]. We also hoped to find out whether there was a link between the presence of these eggs and the sex of the deposited birds. It is noteworthy that in two cases, the eggs were not associated with any other animal and that in two other cases, the egg accompanied the remains of a piglet. In 12 cases, the egg was associated with a cockerel, and in nine cases it was associated with a hen. Therefore, no preferential association is apparent. For two birds, the sex could not be determined, because they were juveniles.

Cut marks observed on the bones relate to preparation of the animal. The purpose of the deposits therefore was to present prepared dishes at the bottom of the tomb. But it is difficult to establish whether these pieces of meat were cooked. In cases where bones were found in anatomical articulation with all or most skeletal elements present, it seems plausible to suggest that these

19 Keepax 1981; Jonuks et al. 2018.

26 Louvres, tomb ST 398. Combined deposit of a cockerell and a piglet, in pieces. (Photo: A.-S. Vigot, Éveha).

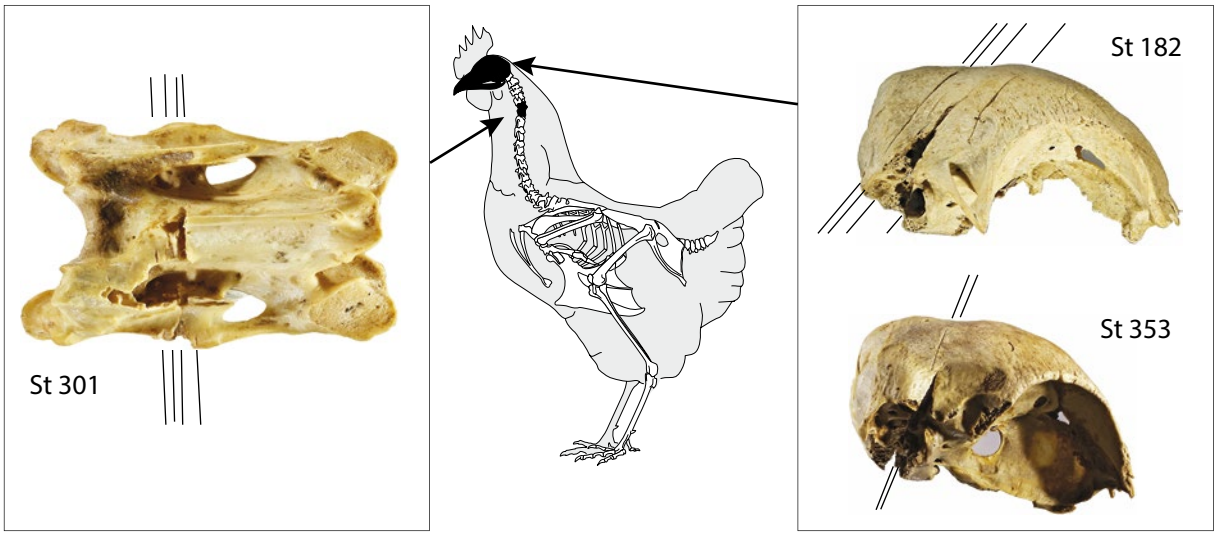
animals were raw, just killed. Conversely, the isolated elements may have come from prepared foods and thus may have been cooked.

We know that the funerary rituals included sacrifices, and we are inclined to think that the chicken found beside the deceased were the victims of sacrificial practices. This thinking is reinforced by the fact that some of these birds *(fig. 28)* showed cut marks on the neck or head that cannot be explained as food preparation, since all the skeletal elements are present and in articulation. For one hen, it is easy to spot the perpendicular cleaver marks to the cervical vertebra, indicating a gesture corresponding to the slashing of the animal's throat. These are thus slaughtering marks. But this still leaves multiple possibilities for how the birds got there. The chicken could have been transported to the tomb already dead, and they may even have been killed separate from any sacrificial context (purchased at the butcher's?). Or the chicken could have been killed with the express aim of placing them in the tomb, but as an item of food, without the element of sacrifice. Or they could have been the *victimae* of activities related to the interment of the deceased human. What does seem clear is that in some cases these actions were followed by the removal of the feet, which was apparently necessary for the *mise en scène* of the deposits at the bottom of the tomb.

The birds from Louvres match the archetypical funeral assemblages of Late Antiquity. The deposits from this period primarily consist of chicken, followed by very young piglets and chicken eggs, the last of which are taking on a growing importance at this time. We see this same type of deposit at Epiais-Rhius and at Dourges, where pig is also mostly present as animals that would

27 Louvres, tomb ST 213. Remains of an intact egg. (Photo: A.-S. Vigot, Éveha).

still have been lactating, and in the Low Empire levels at Hénin-Beaumont, Marquion, Arras, and Saint-Laurent-Blangy "Actiparc". Most of the time, the birds were deposited intact or with the feet removed, whereas the piglets were often deposited in pieces. The change that began in the middle of the 2nd century AD leads to an overwhelming omnipresence of chicken by the 4th century *(fig. 9)*, although the other species, such as caprines and goose, do not disappear completely. The list of deposited species is rounded out at Marquion (4th century AD) by a goose and at Dourges by three geese and a rock



28 Louvres, tomb ST 301 (left). Knife cut mark on the palmar face of a cervical vertebra of a large chicken. The presence of the vertebrae and head in articulation reveals that the cutmark relates to the sacrifice of the animal. Louvres, tombs ST 182 and ST 353 (right). Knife cut marks on the heads of chickens. The number of cuts per cranium is surprising. It may relate to decapitation, but the fact that this part was not removed favours the hypothesis that these marks relate, instead, to the killing of the animal.

dove (*Columba livia*). It is not necessary to seek any particular significance in these isolated cases; rather, we should view them as the expression of a degree of freedom afforded to the family. Similarly, another local custom is depositing fish and molluscs in ceramics. This mainly concerns the cemeteries of the 4th and 5th centuries of the coastal strip. At Marenla, one burial yielded the remains of a flounder (*Platichthys flesus*) and another yielded a tin dish containing shells of common cockle (*Cardium edule*). At Noyelles-sur-Mer, the fish identified from five graves is also flounder.

The animals outside the tombs

One of the particularities of the site of Louvres is that the necropolis delivers animal deposits from outside the tombs, specifically of dog and caprines. There are two types of dog burial. The first type of dog deposit is the complete skeleton of a dog in structure 384 *(fig. 29)*. Here we are confronted with gestures that have been recognised elsewhere – see, for example, in Tunisia, the necropolis of Pupput[20], and in France, the necropolis des Dunes, in Poitiers[21]; the site at 78 avenue Jean Jaurès in Nîmes; the site of La Butte, in Lyon[22]; or the site of La villa de la Gare at Quiou, on the Côte d'Armor, Brittany[23] – but never reviewed in depth[24]. Often, as at Louvres, Poitiers, and Lyon (tomb 5 in the quartier Saint Pierre[25]), a ceramic is placed beside the animal, often between its legs. These burials reflect a desire to provide the companion of the deceased and the deceased's family with a dignified burial – an act that is intended to be far removed from the act of getting rid of the animal in a common charnel-pit, or in a ditch at the edge of a road or field. It is also known that this use may in some cases have extended to the point of placing the animal inside a sarcophagus especially made for it. For Late Antiquity, a case is known from Turkey involving the sarcophagus of the dog Stephanos of Termessos (Lycia), on which is written a text that leaves no doubt: "I am the dog Stephanos, Rodopé erected for me this tomb"[26]. Another example is envisaged by Eveillard[27], this time for Roman *Armorica*, at Plouarzel in Finistère (France). At Louvres, there was no sarcophagus, but the analysis of bone movement and anatomical connections suggests that decomposition took place in an unrestricted space, suggesting the existence of a wooden chest or wooden roofing at the top of the pit.

The second type of deposit involving dogs is the one that raises the most questions, because this form is not known from the existing archaeological literature. Structures 566 and 617 each contained a ceramic vessel containing the complete skeleton of a new-born puppy *(fig. 30)*. It is really interesting to note that structure 566

20 Lepetz 2008.
21 Vigot et al. 2008.
22 Blaizot 2009, 86.
23 Unpublished.
24 See Lepetz 1993; Blaizot 2009.
25 Chastel et al. 1995.
26 Antalya Museum, Inv.-No. 016.
27 Eveillard 2012.

29 Louvres, tomb of a dog. (Photo: A.-S. Vigot, Éveha).

is in the immediate vicinity of a tomb containing a very young infant (just several months old) and that structure 617 is close to three tombs of new-borns.

The association of tombs of dogs with tombs of infants has sometimes been envisaged[28], but the examples presented thus far are tenuous because the topographic proximity alone is insufficient to prove a link. At Louvres, the situation is somewhat different. The fact that at this site there are two similar but independent deposits and that the puppies had been placed in ceramic vessels shows the purposeful, meticulous nature of the gesture. The young age of the puppies argues against the idea that a family would have felt a strong bond with these animals, yet their interment was carefully performed. But it is hard to imagine that the topographic relationship was without meaning. The link with the new-born graves seems obvious, even though we have trouble establishing the reason for it. Rather than a religious gesture, we might think of this as a wish on the part of the family (the parents?) to pay homage to the young deceased.

For caprines, the area between the tombs revealed four pits each containing a single sheep, one pit containing a goat, and one pit containing a pig. The caprines were all juveniles, and the pig was less than a year old. Radiocarbon dating places the pig in the medieval period. This is probably an animal that died of natural causes and was buried by its owner, in the Middle Ages. The relative chronology indicates that the sheep and goats date to Antiquity.

The issue of animals deposited as part of commemoration or separation rituals was addressed during the excavation of a ram discovered at a mausoleum dating to Antiquity at Vâton, in the Calvados, France[29]. The deposit of this sheep occurred between 50 and 250 years after the tomb had been closed off. This time gap means that it is not possible to establish whether there was a link between these two gestures, of burying a dead person and burying a dead animal. At Louvres, a similar situation presents itself: it is difficult to know whether the sheep and goat mentioned above were sacrificed as

28 Blaizot 2009, 87.

29 Hincker et al. 2012.

30 Louvres, tomb ST 565. Very young puppy that had been placed in a ceramic vessel (left), curled up in anatomical position (shown schematically right). (Photo: A.-S. Vigot, Éveha. CAD: S. Lepetz).

part of a ceremony or, instead, died naturally. Given that these deposits are situated in the same area as the human tombs, one might think that the persons tasked with burying these animals must have known about the funerary nature of the site. The young age of the caprines argues for them having died of natural causes. However, we have to remember that the animals buried around the tombs in Antiquity are all sheep or goat – species that are rarely part of the tomb burials themselves – and that no pigs or chicken have been found in these pits. We therefore have a negative *a priori* for linking the deposits in the pits to those in the tombs, because the pit deposits are unusual and do not appear to correspond to the funerary habits involving those species.

Structure 448 is different, though. At the bottom of the ditch was a skeletally complete adult goose, placed on its back, wings spread, covered by a young sheep of about 1 or 1.5 years old placed on its right side. At least three eggs (undoubtedly more) had been placed in a straight line on the right wing of the bird. This deposit has no equivalent elsewhere, and it remains difficult to interpret. One could envisage an offering made to the deceased or to the deceased's Manes as part of rites of commemoration, even though, in general, commemorative practices favour libations. One could also think of gestures of divination or necromancy, as has already been proposed for the ram at Vâton, even though there are no formal indications for this. Nevertheless, if we consider this association to be religious instead of fortuitous, we should then reconsider the other isolated deposits of sheep and goats, and allow for the possibility that these, too, formed part of practices related to human deaths.

Conclusion

At the end of this paper, it is necessary to re-emphasise the two main limitations of the approach. Only parts of the archaeozoological data could be presented, and the deposits could not be described in detail, and thus the descriptions above can only partially express the richness, complexity, and variety of the tombs. Further, our image of the practices is also only partial. For a complete image, it would be necessary to describe and analyse all the constituent elements of the tombs, the form of the structures and their arrangement in the *necropoleis*, the anthropological data, the ceramics, the other objects, and all the characteristics of the sites. The task of full publication has yet to be undertaken. But despite these reservations, several elements are apparent, and these allow us to better understand the place of animals in the funeral practices of the inhabitants of Belgic Gaul.

- The data collected from our sites concerning the La Tène practices of the last decades of the 1st century BC show a certain homogeneity in the deposits and gestures, which probably indicates a homogeneity in beliefs.
- The deposition of halved heads of pigs, staged together with separated necks and ribs, is observed on many sites of this period and has been described from Luxemburg to northern France.
- The gesture of disarticulating the limb bones and reconstituting them as a triangle in the tombs seems widespread throughout this region, as does interring sections of vertebrae or other anatomical parts that are partly defleshed.
- On the other hand, we can see that these schemas extend beyond the chronology of the Gallic period, since we find them in the 1st century AD as well, in some cases into the reign of Claudius. It is unclear whether people's thinking persisted, but certainly the associated customs were retained.
- The custom of arranging large quantities of cut-up meat, mainly pork, in the tombs, is also a feature common to these Gallic and Gallo-Roman societies, undoubtedly underlining the important role that meat products would have played in these cultures. In contrast, the differences with Roman Italy are significant because such non-burnt and (nearly) complete skeletons are not found in graves of Pompeii.
- There is no significant break between the Gallic and the Roman periods. Rather, we observe a shift through to the middle of the 2nd century AD that, little by little, reduces the prominence of these pieces of meat in the tombs. Pork and chicken are decreasing in frequency, somewhat as if there was a tendency to greater (relative) frugality. There are not only fewer pieces, but also fewer species, with the virtual disappearance from the 150s AD onward of cow and dog, some pieces of which had still been associated directly or indirectly with funeral deposits up until that time. Pork and mutton continue to decrease in importance. There is a change in the middle of the 2nd century;

from this date, we see a continuous increase in chicken, in the form of cockerels and eggs, which culminates in the 4th century with a form of quasi-exclusivity of this species. Pig is still present in low proportions, but in another form, namely, as cut-up, very young piglets, rather than the reconstituted, halved pigs of earlier times. The form of these deposits has fundamentally changed. The vision that the family has for the grave-side portion of the burial ceremony has also changed: after the omnipresence and abundance of meat in the 1st century, in the 4th century we generally see only a chicken and an egg in the pit. The form of the homage rendered by the living to the deceased changes and becomes simpler.

To this general guide, which is necessarily simplified, we must add those elements that emphasise everything that we are not yet able to comprehend. Do the defleshed bones in the tombs constitute remains of meals taken by the living? Are the complete animals that are occasionally found around the graves (sheep, geese) signs of commemoration of the funeral, or do they correspond to other types of beliefs? How should we interpret the deposits of new-born puppies next to graves of small children? Finally, we have to ask ourselves about the origins of the growing prominence of chicken in the religious context of a Roman Empire that, at the end of the 4th century, had officially become Christian. Work on sacrifices and food offerings in Merovingian Gaul has revealed the survival of dietary practices around the tomb beyond the 5th century (including the deposition of prepared meals)[30]. These customs were tolerated, even accepted, without reluctance by the religious authorities because they harked back to tradition and operated in the private sphere. Here too, there was no rupture, but, rather, a gradual change in customs.

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Abstract

Excavations over the past 10 years in what is today the north of France have uncovered numerous cemeteries dating from the end of the 1st century BC to the 5th century AD, allowing archaeologists to compile a remarkable body of finds that permits us to describe a part of the activities conducted at the time of the funeral. A corpus of 20 cemeteries with a combined total of 464 tombs with animal remains is available. Data from these cemeteries make it possible to better understand the place of animals in funeral rituals, and they allow us to observe changes that took place over the course of the terminal La Tène and the Roman period in the positioning of animal remains in tombs and in the presence of animal species and anatomical parts. They also allow us to compare practices in northern France with contemporaneous practices in Italy.

Zusammenfassung

Tiere in Bestattungspraktiken in Gallia Belgica zwischen dem Ende des 1. Jahrhunderts v. Chr. und dem Beginn des 5. Jahrhunderts n. Chr.: Von gallischen zu gallo-römischen Praktiken

Ausgrabungen der letzten zehn Jahre im heutigen Nordfrankreich haben zahlreiche Nekropolen vom Ende des 1. Jahrhunderts v. Chr. bis zum 5. Jahrhundert n. Chr. freigelegt, die es ermöglichen, einige der während des Begräbnisses ausgeführten Aktivitäten zu beschreiben. Ein insgesamt 464 Gräber mit Tierresten von 20 Nekropolen beinhaltendes Corpus ist verfügbar. Die Daten aus diesen Nekropolen ermöglichen ein besseres Verständnis der Stellung der Tiere bei Begräbnisritualen und der Veränderungen, die zwischen der späten La Tène Zeit und der römischen Periode hinsichtlich der Arten und anatomischen Teile sowie der Anordnung der Überreste in den Gräbern stattfanden. Sie ermöglichen es uns auch, die Praktiken in Nordfrankreich mit den zeitgenössischen Praktiken in Italien zu vergleichen.

Résumé

Les animaux dans les pratiques funéraires au Gallia Belgica entre la fin du 1er siècle avant J.-C. et le début du 5e siècle après J.-C. : Des pratiques gauloises aux pratiques gallo-romaines

Les fouilles menées au cours des dix dernières années dans ce qui est aujourd'hui le nord de la France ont mis au jour de nombreuses nécropoles datant de la fin du 1er siècle avant J.-C. au 5e siècle après J.-C., permettant de décrire une partie des activités menées au moment des funérailles. Un corpus de 20 nécropoles avec un total de 464 tombes livrant des restes d'animaux est disponible. Les données de ces nécropoles permettent de mieux comprendre la place des animaux dans les rituels funéraires et les changements intervenues entre La Tène finale et la période romaine concernant les espèces et les parties anatomiques impliquées et la disposition des vestiges dans les tombes. Ils nous permettent aussi de comparer les pratiques du nord de la France avec les pratiques contemporaines d'Italie.

Animals in funerary practices during the early and late Roman periods in southern Belgium

by *Fabienne Pigière*

Keywords

Northern Gaul; Food offerings; Domestic animals; Meat; Social status

Schlüsselwörter

Nordgallien; Speisebeigaben; Haustiere; Fleisch; sozialer Status

Mots-clés

Gaule septentrionale; offrandes alimentaires; animaux domestiques; viande; statut social

Introduction

Archaeozoological finds in funerary contexts attest to the role of animals in the Gallo-Roman funerary rituals. The combination of written sources and archaeozoological data has in particular shown their use for food rituals[1]. According to the different types of faunal deposits recorded, diverse food rituals using animals were practised. While overviews already exist for a few areas of the *Gallia Belgica* and *Germania inferior*[2], the picture for northern Gaul is still incomplete. More regional reviews are necessary to provide insights in the use of animals in the funerary rituals and to assess the regional diversity.

The present paper aims to provide an overview of the archaeozoological data available for the cemeteries excavated in southern Belgium, namely the Wallonia region, based on my own research and literature. This overview compiles all data published for Wallonia. The results are then discussed to determine the contexts in which they appear, which species are selected, the age and sex of animals and which parts of their body are selected. Diachronic evolution and variation according to the status of the population will also be discussed. The studied area is located in four different Roman *civitates*: *Treviri*, *Nervii*, *Menapii* in *Gallia Belgica* and *Tungri* in *Germania inferior (fig. 1).* The chronological frame of the research extends from the 1st century until the 1st half of 5th century AD.

1 Lepetz / Van Andringa 2004.

2 E. g. Lepetz 1996, 2001; Lauwerier 2002.

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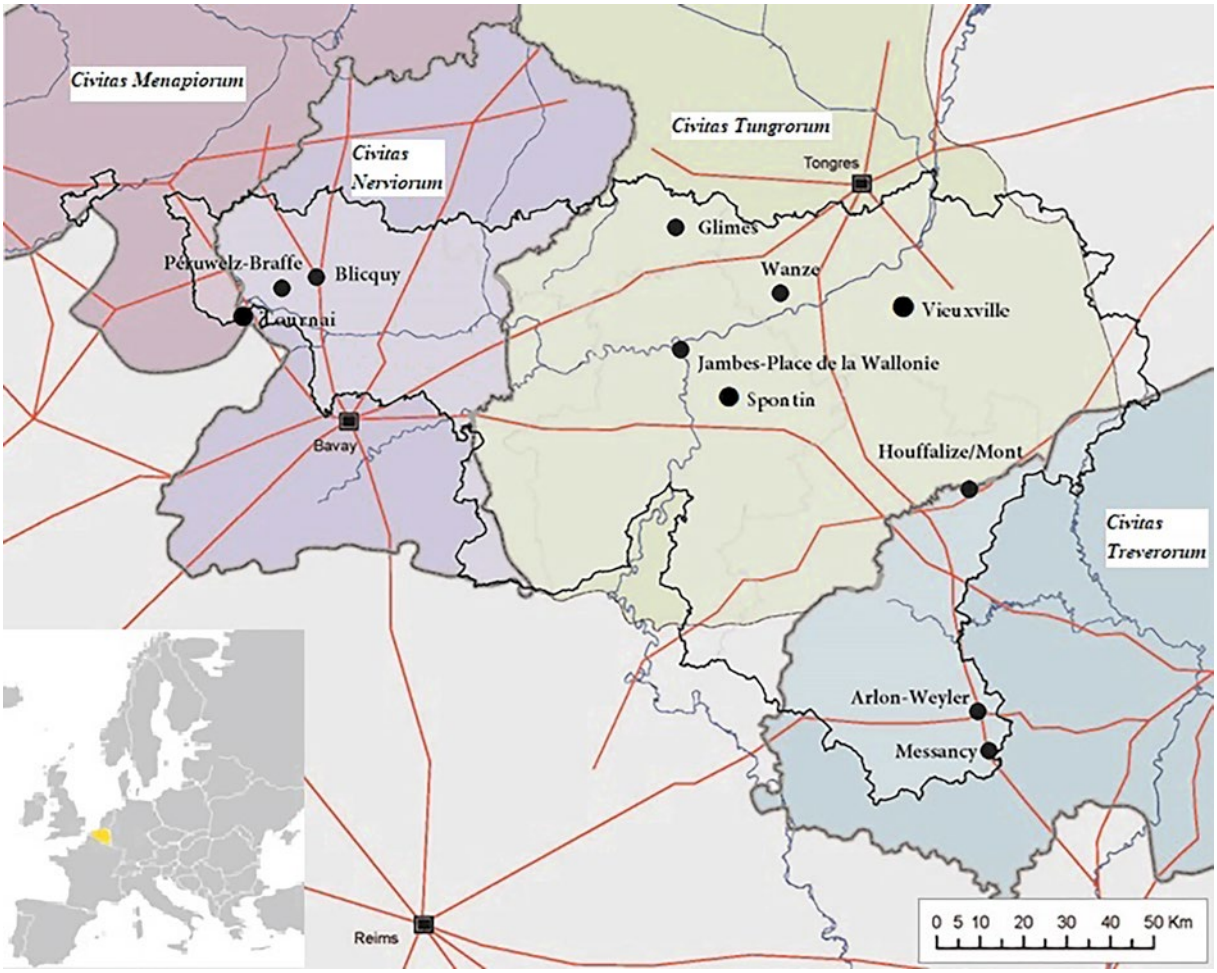


1 Map of southern Belgium with the Roman *civitates* and the sites mentioned in this paper (map: J.-N. Anslijn & F. Hanut, © SPW/DGO4, Patrimoine).

Results

Long tradition of Roman funerary archaeology in Belgium has provided an extended documentation on funerary practices. An overview has compiled a list of one hundred and seven main cemeteries excavated in Wallonia, which are dated between the 1st and the 4th centuries AD[3]. While artefacts discovered in funerary contexts have been extensively studied, only recently more attention has been provided to faunal remains. Valid archaeozoological data are only available for eleven sites from the Walloon region: eight early Roman cemeteries with cremation graves and three late Roman graveyards with inhumations *(tab. 1)*. Greatly diverse cemeteries have been submitted to an archaeozoological study, since one is related to a town, three to small towns, five to rural sites (cemeteries and *tumuli*) and two to military settlements. Most data have been provided by five sites, which were extensively excavated: Messancy, Jambes-Place de la Wallonie, Blicquy, Tournai, and Vieuxville. Regarding the type of context with faunal remains, it appears that the majority of finds were discovered in tombs. Occasionally, faunal remains were collected in contexts linked to pyre, dumps, and burned offerings on the ground of a *tumulus*. However, less attention was paid to archaeological contexts that were not graves during excavation of cemeteries, such as dumps which could contain remains of funerary or commemorative meals. In addition, without sieving of sediment, remains of small animals but also highly fragmented bones resulting of

3 Hanut 2014.

the cremation are not collected. Sieving was practised at the site of Glimes, Péruwelz/Braffe, and Wanze. The proportion of graves with animal remains in extensively excavated cemeteries is between 8 % and 38 %[4].

Sites	Civitas	Datation	Type of occupation	Funerary contexts	Context with faunal remains	References
Jambes-Place de la Wallonie	Tungri	c. 50–250 AD	Small town	87 graves, 5dumps, 1 ustrinum	17 graves, 5 dumps, 1 ustrinum	Pigière 2014
Houffalize/Mont	Tungri	2nd century	Rural	22 graves	–	Cerezo-Román 2017
Wanze	Tungri	c. 50–80 AD	Rural	1 grave	1 grave	Goffioul et al. 2014
Glimes	Tungri	2nd century	Tumulus	1 calcinated ground	1 calcinated ground	Pigière 2009
Blicquy	Nervii	Mid 1st c.–3rd century	Small town	407 graves, 1 fosse à cendres	31 graves	Gautier 1972a
Messancy	Treveri	c. 20/60–180–230 AD	Rural	194 graves, 1 dump	59 graves, 1 dump	Deblon et al. 2005, Hanut et al. 2017
Arlon-Weyler	Treveri	1st half of 1st century	Small town	+/- 30 graves	5 graves	Cerezo-Román 2017
Péruwelz/Braffe	Nervii	Mid 1st c.–3rd century	Rural	15 graves, 1 dump	2 graves, 1 dump	Pigière submitted
Tournai-Rue Perdue	Menapii	End 3rd c.–1st half of 4th century	Town	87 graves	25 graves	Pigière et al. 2016
Vieuxville-Roupée	Tungri	1st half of 5th century	Military	48 graves	8 graves	Pigière in print
Spontin-rue Bouchat	Tungri	c. 380–420 AD	Military	–	1 grave	Pigière 2015

Tab. 1 Funerary sites used in this research.

Most bones can be interpreted as refuse of food rituals as they are remains of typical food animals and represent isolated meat bearing parts. In addition, from time to time, it was possible to record butchery marks on bones. These pieces of meat were placed close to a set of tableware within the tombs, which are other evidence of the food rituals. Sometimes, joints of meat were set on a plate or within a vessel. The main animal species identified are pig (*Sus scrofa* f. domestica), chicken (*Gallus gallus* f. domestica), cattle (*Bos primigenius* f. taurus), sheep/goat (*Ovis ammon* f. aries/*Capra aegagrus* f. hircus), and goose (*Anser anser*/*Anser anser* f. domestica). When considering written sources on animals in Roman funerary rituals, the practices best documented are also food rituals[5]. Bones from edible animals but without food value are occasionally recovered in graves. These remains are from non-meat bearing parts, such as foot bone or teeth. The meaning of these isolated bone deposits is not clear. Some authors have proposed that they had a symbolic value[6], while the remaining parts of the animal could have been used for other aspects of the rituals (funerary meal, offering on the pyre, etc.).

Early Roman animal offerings

Two different kinds of faunal deposits have been brought out in cremation graves. 'Primary' deposit, which is animal offerings put on the pyre and burnt with the death person. While 'secondary' deposit is unburnt animal offerings put in the grave with the remains of the cremation. The terminology 'primary' and 'secondary' deposits is used in accordance with the distinction made for artefact offerings which received the same two distinct treatments as fauna[7]. Different meanings should be considered for each kind of deposit[8]. Those set on the pyre could be part of the offerings for the deceased person which should disappear with them[9]. Offerings directly placed in the grave, together with the tableware, could

4 Concerning cremations, all bones from the graveyards have been viewed and checked by a zooarchaeologist to verify the presence of animal remains. It was also the case for 14 funerary contexts from Jambes, while an anthropologist has extracted the animal remains from the other contexts. No information was provided on the way the cremated bones of Blicquy were sorted to identify and separate human and animal remains. This site mainly provided non-cremated animal bones. Concerning inhumations, human and animal remains were sorted during the anthropological analysis.

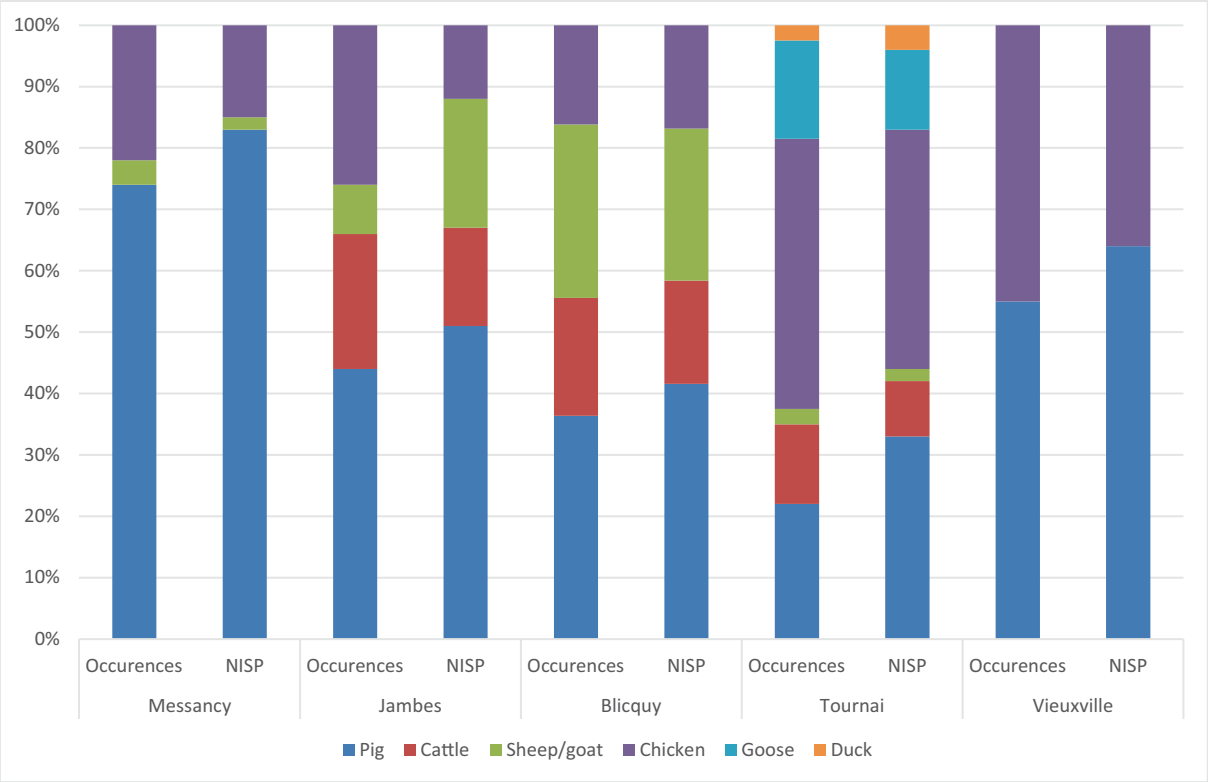
5 Lepetz / Van Andringa 2004.

6 Lepetz / Van Andringa 2004.

7 Hanut 2014.

8 Lepetz / Van Andringa 2004.

9 Lepetz / Van Andringa 2004.



2 Relative proportions of the most important animals used in funerary rituals.

be the symbol of the banquet during the funerary and of the future meals that will be taken to honour the deceased person. These two kinds of faunal deposits, which both represent meaty parts of edible animals, are not equally represented in cemeteries. At Messancy and Weyler only 'primary' deposits have been recorded. Similar patterns appear for artefacts offerings, which are systematically burnt at these sites. Conversely, at Blicquy, animal offerings are mainly represented by 'secondary' deposits. We find both types of deposits at Jambes and sometimes they are together in a same grave. Most of the time, 'secondary' offerings are inside the urn or put within the piles of burnt human remains on the ground, which confirm the offering status of these remains. Rarely, they are offered on a plate.

Pig is by far the most important species in early Roman funerary rituals *(fig. 2)*. Between 36 % and 74 % of graves with animal offerings have pig remains and the species makes up between 59 % and 82 % of the faunal remains. Regarding the choice of individuals, young pigs of 1 year old or piglets were offered at Jambes and Blicquy. At Messancy, animals were selected at the end of their growth process. No complete animals but pieces of meat were deposited on pyres or within graves. Preference was given to ham and head in some cemeteries, but in others no specific selection of pieces was made.

Chickens are also frequently found. Between 16 % and 26 % of graves have chicken remains and the NISP is between 12 % and 17 %. Their role should be even more important considering that their bones are more fragile than those of mammals. Moreover, they may not have been fully collected in the absence of sieving when dealing with highly fragmented burnt remains. Most of the time only a few bones were discovered in each tomb. Some complete individuals set in a plate have been excavated. As for pigs, 'primary' and 'secondary' deposits contain chicken remains. One bone has been identified within an *ustrinum* at Jambes.

The role of sheep/goat is variable. When identification at species level was possible, sheep appears as the most common species compared to goat. Sheep is the second most important species offered at Blicquy, but uncommon at Messancy. Individuals younger than 2 years old, which were bred for their meat, were selected at Blicquy. The lack of data makes it impossible to verify whether the importance of sheep in the offerings at Blicquy reflects the predominant role of the species in regional breeding.

Regarding cattle, they have not been identified at Messancy. However, their role may be underestimated as meat was often removed from bones during the butchering process, which is not the case of the smallest mammal species. Cattle are quite frequent at Jambes and Blicquy, but they only appear as 'secondary' offerings, put directly

3 Cut marks on the radii and ulna of a goose (*Anser anser*/*Anser anser* f. domestica).

in the graves. The breeding seemed to have been more focused on sheep in the western *Treviri* area, while cattle were more important in the *Tungri* and *Nervii* loessic areas. The different patterns in the offerings at Messancy, on the one hand, and at Jambes and Blicquy, on the other one, could reflect these different regional husbandry practices[10]. Individuals younger than 3 years old, which were bred for their meat, were selected for the offerings.

Wild species are very uncommon in funerary contexts. One hare bone (*Lepus europaeus*) and one red deer (*Cervus elaphus*) antler have been recorded at Weyler. One bone of a fresh water fish from the cyprinid family has been discovered at Jambes. At the same site, we have identified juvenile S*pisula* and C*ardium edule*, two marine shells from the North Sea coast. Finally, one bone discovered in a grave at Weyler has been attributed to the greylag goose/ domestic goose (*Anser anser*/*Anser anser* f. domestica).

A unique meat offering by tomb is frequent in the graveyards, but two pieces of meat from one or different species are not uncommon, and the maximum number recorded is four.

Few other archaeological contexts have provided animal remains. The offerings on the ground of the *tumulus* of Glimes contained burnt and broken tableware, pig and bird bones. It has been suggested that they are remains of food offerings and/or meal remains taken during the funeral by the family and relatives[11]. A funerary meal waste is also the interpretation suggested for the non-burnt meat bearing bones of cattle, pig and caprines discovered in five dumps at Jambes[12].

Similar food offerings have been brought out in Roman graveyards from northern France[13]. Indeed, the overview that compiled data from 31 sites indicates that pig is the main species used in the rituals. Moreover, high quality meat was offered, since complete piglets or pieces of meat from individuals of less than 2 years old were preferentially selected.

Late Roman animal offerings

Two cemeteries have provided the majority of data for the Late Roman period: Rue Perdue cemetery linked to the *Caput civitatis* of Tournai and Vieuxville probably related to an auxiliary army settlement[14]. Animal remains are very well preserved in the inhumation graves at Tournai, which has allowed us to document food offerings in much greater detail than in cremation graves. Chicken is the most frequently species given as offering. Complete or sub-complete adult individuals were mainly used. Cut marks resulting from the removal of non-meat bearing parts and of cutting in pieces of the carcass have been recorded. Pig is the second most important species. Complete piglets are frequently identified. Pieces of meat, such as hams, from young and adult pigs were also offered.

Another bird is also important in the ritual: the domestic goose or, less probably, the wild greylag goose. Osteomorphological distinction between wild and domestic goose is a challenging matter, although some results have been obtained when dealing with large assemblage[15]. The abundance of goose remains in northern European domestic contexts during the historical periods has been considered as an evidence for domestication of goose[16]. Yet, it is now well documented that the vast majority of animals used in funerary practices are

10 Pigière 2017
11 Massart et al. 2009.
12 Pigière 2014.
13 Lepetz 2001; Lepetz / Van Andringa 2004.
14 Vrielynck 2015.
15 Duval / Clavel 2018.
16 Audoin-Rouzeau 1995; Lepetz 1996.

domesticated[17], which suggests that the geese used in funerary rituals were domesticated.

Along with the important role of geese in the funerary rituals at Tournai, I have shown that the proportion of geese also increases in the domestic contexts of Tournai in the late Roman period compared to the early Roman time[18]. Adult geese represented by complete or partial carcasses have been identified in the funerary contexts. A lot of cut marks attest to the removal of non-meaty parts, meat cutting, but also an intensive cut into pieces of the carcasses. The purpose of this intensive cutting of meaty body parts (legs, chest) or not (wings, feet) is not clear *(fig. 3)*. Large mammals are also represented by cattle and sheep/goat. Isolated cattle bones with cut marks could attest offerings of pieces of meat. A third bird is included in the ritual, namely the common mallard (*Anas platyrhynchos*) or the domestic duck (*Anas platyrhynchos* f. domestica). The domestic or wild status of the duck is even more ambiguous than for the goose and literature suggests that it was not fully domesticated until medieval times, but maybe already kept in captivity since Roman times[19].

The list of species of Vieuxville is shorter than the one from Tournai. Only pigs and chicken have been recorded. However, we should mention that soil conditions were not good for bone preservation at this site. All offerings which have been discovered were set inside vessels. Pig is represented by nine pieces of meat in six graves. We register a great diversity in the selection of the parts of the body and of the age of the individuals. Chicken has been identified in five graves. Complete or sub-complete adult chicken were selected.

The number of offerings by tomb is variable between cemeteries, but also within graveyards. At Vieuxville, the number is between one and three. At Tournai, the graves have on average numerous offerings. More than half of graves have more than one piece of meat and the number can increase up to nine. It is notable that offerings at Vieuxville seem of lower quality than in Tournai. However, the difference may not be related to the fact that one is a military population and the other is an urban civilian one, as the same high diversity and quality of meat offerings has been recorded at the military cemetery of Oudenburg fortification along the Saxon shore, which is related to the regular Roman army[20].

Conclusion

Animals in funerary practices are mainly used for food rituals during the early and the late Roman periods. Both archaeological evidence and written sources highlight this use of animals in funerary rituals. Domestic animals are preferentially selected, and pig and chicken appear as the most important species throughout the Roman period. However, the role of poultry seems to be increasing during the late Roman period. This trend has been recorded in both burnt and non-burnt early Roman offerings, which indicates that it is not the consequence of poorer preservation conditions of birds in cremation graves. The patterns recorded in the funerary practices emphasise the specific status of animals chosen for the rituals and provide additional evidence on the domestic status of goose in the Roman period. A specific treatment of the bird carcasses, submitted to an intensive splitting, has also been recorded in the late Roman offerings. As only birds had been submitted to this specific handling, it could emphasise their symbolic meaning in the funerary rituals. The data from Wallonia are comparable to the results already available for other areas in northern Gaul, which confirms preferential selection of high-quality meat from pig and chicken in Gallo-roman food rituals. At the same time, variations are recorded among the animals playing a secondary role. We should stress that cattle only appear in secondary offerings in early Roman cremations. Further studies should try to elucidate this likely specific role of cattle. In addition, the number of pieces of meat placed in the grave seems to be a good indicator of difference of status between human groups.

This paper provides the first overview of the use of animals in the funerary practices for the whole Roman period in southern Belgium. More data need to be collected in order to study furthermore the evolution over time, differences between regions and inside a same cemetery (according to gender, social status, etc.). Moreover, other aspects of the food rituals need to be investigated further on the basis of new datasets, such as funerary and celebration meals. We also need to clarify if animals with certain physical traits were preferentially selected for the ritual as it has been highlighted in some sanctuaries (Pigière, in print).

17 See Lepetz 2001; Lepetz / Van Andringa 2004; and this paper.
18 Pigière 2012.
19 Benecke 1994.
20 Gautier 1972b.

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Fig. 1: Map: J.-N. Anslijn / F. Hanut, © SPW/DGO4, Patrimoine. – All other tables and figures: Author.

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Abstract

The aim of the present paper is to give an overview of the use of animals in the funerary practices that occurred in the early and late Roman periods in southern Belgium. The study area is located in the Roman *civitates* of the *Treviri*, *Nervii* and *Menapii*, which are part of the province of *Gallia Belgica*, and in the *civitas Tungrorum* in *Germania inferior*. Cemeteries associated with rural, urban and military populations are considered in this research. The review shows that most of the faunal remains discovered in a funerary context can be linked to food rituals. Through the different kinds of faunal deposits, it is possible to document several aspects of the rituals. Patterns can be highlighted regarding the choice of animal species, age of animals sacrificed and pieces of meat for the offerings. Although the study identifies common trends in food rituals of the different cemeteries, variations are recorded among animals playing a secondary role. Evolution over time and diversity of funerary practices in relation to the type of occupation and social status of individuals are also discussed.

Zusammenfassung

Tiere in Begräbnispraktiken während der frühen und späten römischen Periode in Südbelgien

Ziel des vorliegenden Beitrages ist es, einen Überblick über die Verwendung von Tieren in Bestattungspraktiken zu geben, die in der früh- und spätrömischen Zeit in Südbelgien nachzuweisen sind. Das Untersuchungsgebiet liegt in den römischen *civitates* der *Treviri*, *Nervii* und *Menapii*, die zur Provinz *Gallia Belgica* gehörten, sowie in der *civitas Tungrorum* in der *Germania inferior*. In dieser Untersuchung werden Gräberfelder der ländlichen, städtischen und militärischen Bevölkerung berücksichtigt. Die Untersuchung zeigt, dass die meisten der in einem Bestattungskontext entdeckten Faunenreste mit Speiseritualen in Verbindung gebracht werden können. Durch die verschiedenen Arten von Faunenablagerungen ist es möglich, verschiedene Aspekte der Rituale zu dokumentieren. Muster können hinsichtlich der Wahl der Tierart, des Alters der geopferten Tiere und

der Fleischstücke für die Opfergaben hervorgehoben werden. Obwohl die Studie Gemeinsamkeiten in den Speiseritualen der verschiedenen Friedhöfe erkennen lassen, werden Variationen bei den Tieren deutlich, die eine untergeordnete Rolle spielen. Die Entwicklung der Bestattungspraktiken im Verlauf der Zeit und ihre Vielfalt in Bezug auf die Art des Berufs und den sozialen Status der Verstorbenen werden ebenfalls diskutiert.

Résumé

Les animaux dans les pratiques funéraires au Haut-Empire et dans l'Antiquité tardive dans le sud de la Belgique

Le but de cet article est de donner un aperçu du rôle joué par les animaux dans les pratiques funéraires au Haut et Bas-Empire dans le sud de la Belgique. Notre zone d'étude comprend les *civitates* romaines des *Treviri*, *Nervii* et *Menapii*, qui font partie de la province de *Gallia Belgica*, ainsi que la *civitas Tungrorum* en *Germania inferior*. Les recherches présentées ici abordent les nécropoles associées aux populations rurales, urbaines et militaires. L'analyse montre que la plupart des restes de faune trouvés en contexte funéraire peuvent être associés à des rituels alimentaires. Les différentes sortes de dépôts permettent de documenter divers aspects des rituels. On peut relever des constances dans le choix de l'espèce animale, de l'âge des animaux sacrifiés et des morceaux de viande pour les offrandes. Si l'on relève bien des tendances communes entre les différentes nécropoles, on observe des variations parmi les animaux jouant un rôle secondaire dans les rituels alimentaires. L'article aborde également l'évolution et la diversité des pratiques funéraires en fonction du type d'occupation et du statut social des individus.

Cremated animal bone from two ritual/ ceremonial sites in Britannia

by *Clare Rainsford / Anthony C. King / Susan Jones / Rose Hooker / Gilbert Burleigh*

Keywords

Roman Britain; cremated animal bone; Roman ritual and religion.

Schlüsselwörter

Römisches Britannien; verbrannte Tierknochen; römische Riten und Religion

Mots-clés

Angleterre romaine; os d'animaux incinérés; culte et religion romains

Introduction

Most temple and ritual sites in Roman Britain have assemblages of animal bones[1], and display characteristics that mark them out from other types of assemblage, to a greater or lesser extent. On a minority of temple sites, the phenomenon of burning of animal bone can be observed, sometimes at high temperatures equivalent to those achieved during the cremation process for human remains. This raises questions about the role of this phenomenon in the activity at these sites. Was it an integral part of the ritual of offering and sacrifice, e. g. some sort of *holocaustum*, or a secondary, but important activity to cleanse a ritual area after a ceremony or feast had taken place? The act of cremating animals or portions of an animal victim is not depicted on altars or other imagery[2], and where *holocausta* are depicted, they show apparently liquid libations being poured into the flames on the *focus* of an altar[3] or a tripod brazier. This negative indication would imply that a secondary procedure or ritual is to be preferred as a working hypothesis.

In the wider geographical and historical context, burnt offerings are a significant feature across the Roman Empire and in ancient Greek religion. Stephen J. Davis gives several examples of Greek sites where selected portions of sheep or pigs have been heavily burnt, all associated with temple sites[4]. In the Roman Near East, burnt offerings, such as the large deposit of mainly post-cranial sheep remains from Omrit, Israel[5] suggest foundation or sacrificial practice which may be linked to Roman practice, or to Jewish and other eastern religions. On the domestic scale, discrete clusters of burnt bone from local animals (chicken, sheep/goat, etc.) have been found in gardens at Pompeii and interpreted as domestic ritual practice[6]. Links to human cremation procedures are also widely evident, with animal burnt offerings present at many cemetery sites across the Roman world[7].

With this in mind, this paper will explore the evidence from two recent excavations on ritual/ceremonial

1 King 2005; Allen 2018a.
2 Cf. for example Huet 2008.
3 Huet 2008, cat. no. 33; 34; 51; 52; 80.
4 Davis 2008.
5 Hesse forthcoming.
6 Hesse 2019.
7 Cf. Olive 2008; Worley 2008.

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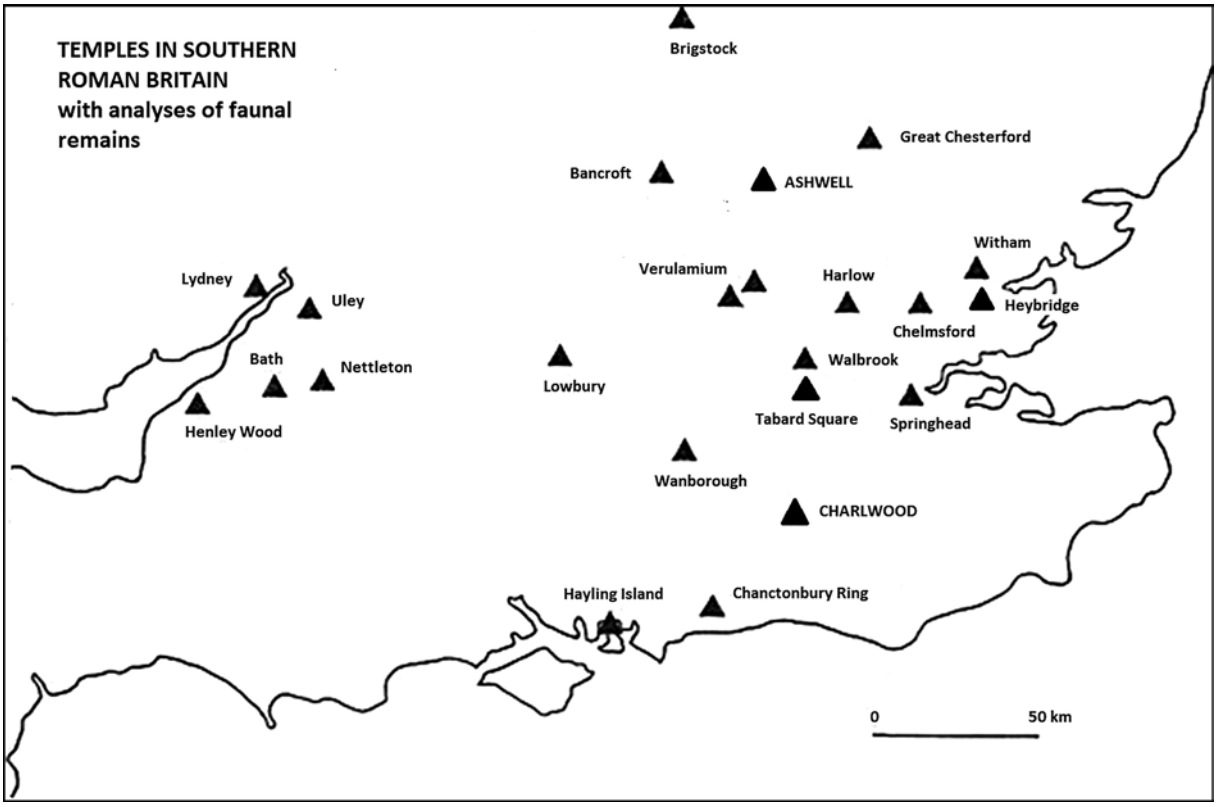


1 Southern Britain, showing temple sites with animal bones, and the two sites considered in this paper. (From King 2005, fig. 1 with modifications).

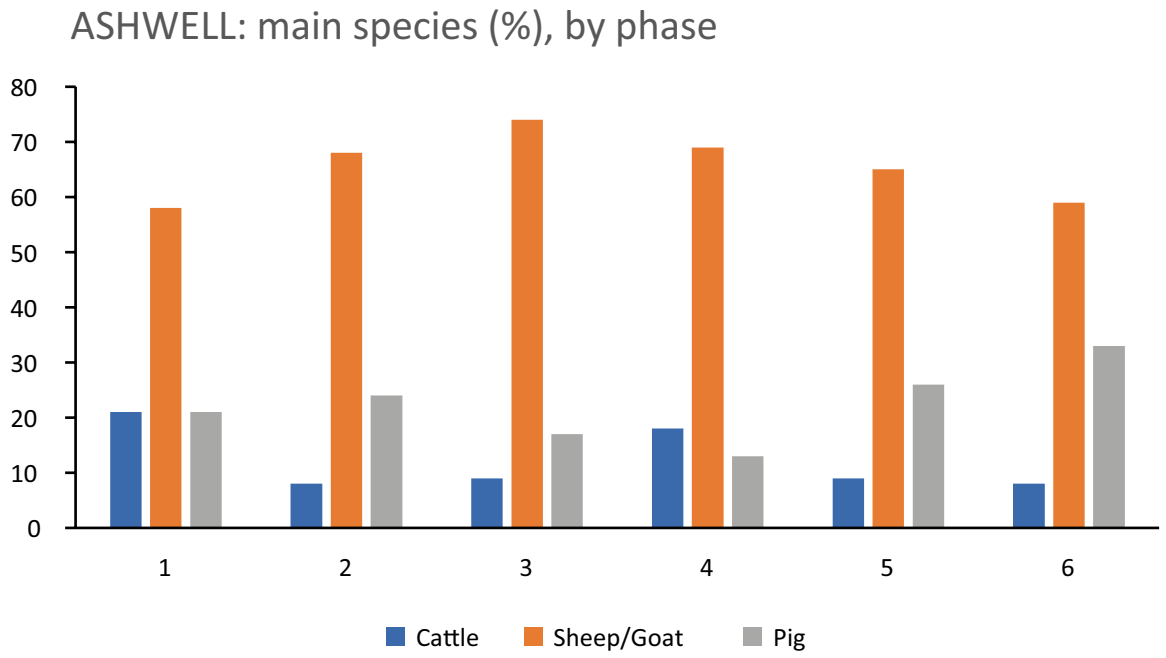
sites of Late Iron Age and early Roman date from southern Britain *(fig. 1)*; Ashwell in Hertfordshire, to the north of the Thames in a region of wealthy Late Iron Age occupation and relatively dense settlement[8], and Charlwood in Surrey, by contrast a region of fairly sparse Late Iron Age and early Roman settlement[9]. Both sites have characteristics of open-air ceremonial spaces, where ritual activity took place in defined locations, but not focussed on buildings such as a temple, or on obvious altars or offering positions.

Ashwell, Hertfordshire

The site is located 6 km north of the Roman town at Baldock, below the chalk scarp of the Chilterns, and near the west bank of the river Rhee[10]. The main discovery that led to the excavation of the site was a hoard of temple treasure found by metal detector in 2002[11]. The hoard sheds new light on religion in the province, comprising some 27 gold and silver objects, notably a hollow-cast silver-gilt figurine resembling Fortuna, and a pedestal inscribed to *Dea Senuna*, a hitherto unknown Romano-Celtic deity[12].

Subsequent excavation revealed a circular open area c. 14 m in diameter, with evidence for rituals involving feasting, the deposition of votives, and possibly the commemoration of the dead[13]. Initially, a possibly natural hollow in the ground, surviving to c. 1 m in depth, had been used from the Late Iron Age by removing the

8 Burleigh 2015.
9 Bird 2004, chap. 6.
10 Burleigh 2015, 94–9.
11 Jackson / Burleigh 2018, 1–3.
12 Jackson 2018, 18–20.
13 Burleigh 2018a.



2 Ashwell. Species percentages for Cattle, Sheep/Goat and Pig, by phase.

topsoil and laying gravel and making a hearth positioned on the natural clay. This hearth was associated with abundant artefactual and ecofactual material, including a great quantity of very fragmentary calcined animal bone. On its east side a small pit held a structured deposit of animal bone and pottery, including sherds of an imported fine ware beaker. The hearth was the first in a series of hearths arranged in an ellipse around a central clay surface. On this surface lay debris from feasting, including abundant broken pottery, animal bone and oyster shell, and artefacts that may have been deliberately deposited as part of the rituals. These included halves of two querstones, fragments of pipeclay figurines, stone and pottery spindle whorls and metalwork such as Iron Age coins, iron objects and items of personal dress. The last hearth in the sequence dated to the 3rd century AD. Cut through the central clay surface were also several small pits, each containing calcined bone and ash.

Apparently as a result of ritual feasting, an organic soil formed across the original hollow and above the hearths and gravel surface. This context was rich in material, including pottery, animal bones, calcined bones, oyster shells and many apparent votives, including Venus and Mercury figurine fragments. Periodically, the soil deposits were sealed by a chalk pebble surface, after which, ritual activities recommenced. Within these deposits, towards the end of the sequence, partly dismembered skeletons of pigs were found, apparently a development of the earlier ritual procedures evident on the site[14]. Altogether, three such surfaces were laid, forming a sequence from the 1st to 3rd centuries AD. The temple hoard was a subsequent deposition, in the 4th century.

Cremated bone from Ashwell

The excavations produced a total of 43 909 bone specimens. 41 527 of those came from deposits of fragmented, disarticulated, and commingled material whilst 2382 specimens were associated bone groups (ABGs) deposited in an articulated or partially articulated state. In total 192 contexts produced bone specimens that were associated with 9 phases of activity across the site *(tab. 1; fig. 2)*[15].

14 Burleigh 2018a, 191–197.

15 See Jones / King 2018 for thorough report on this assemblage.

	1	2	3	4	5	6	7	8	9	Total
Human *Homo sapiens*		1				1				2
Cattle *Bos taurus*	45	74	85	76	102	200	19	24	5	660
Sheep/Goat	121	612	700	277	676	1660	55	104	12	4217
Sheep *Ovis aries*	4	30	19	9	30	61		2		155
Goat *Capra hircus*	1	4	9	1	9	7		1		32
Pig* *Sus domesticus*	45	221	164	56	290	1222	18	50	2	2068
Dog *Canis familiaris*	3	4	9	3	22	37		5		83
Horse *Equus caballus*	2	7	3	2	11	16		3		44
Wild Boar *Sus scrofa*						1+				1
Roe Deer *Capreolus capreolus*		2	1		1	1				5
Hare *Lepus* sp.		5	4		18	25	1	1		54
Large Mamm.	69	224	219	291	378	815	51	92	4	2143
Med. Mamm.	171	2942	2267	1240	3227	8646	252	331	59	19 135
Unid. Mamm.	18	2112	646	626	2894	5121	246	159	8	11 830
Rodent		2								2
House Mouse *Mus musculus*					1	1				2
Field Vole *Microtus agrestis*					1					1
Small Mamm.	4	20	6	10	21	30		1		87
Dom. Fowl *Gallus gallus dom.*		6	8	4	11	37	2			68
Partridge *Perdix perdix*		1	2		1	3				7
Dom. Goose *Anser anser dom.*		4			3	5				12
Brent Goose *Branta bernicla*			1		2	3				6
Crow *Corvus* sp.						2				2
Woodcock *Scolopax rusticola*					1		1			2
Wood Pigeon *Columba palumbus*			1			1				2
Teal *Anas crecca*		1								1
Mallard *Anas platyrhynchos*					1					1
Small Bird						1				1
Med. Bird		35	9	13	23	59	3	6		148
Large Bird		1	3		2	3				9
Bass *Dicentrarchus labrax*					1	1				2
Other Fish		1	1			3	1			6
Frog *Rana* sp.		120	4	1		13				131
Toad *Bufo* sp.		66	11		3	3				78
Amphib.		543			1					544
Total	483	7037	4172	2609	7730	17 978	649	779	90	41 527

Tab. 1 Ashwell. Species represented (NISP) by phase. * Additionally, there were 2382 Pig bones in associated bone groups (ABGs) from Phase 6.

Finds derived from the Late Iron Age/Early Roman Transition period (late 1st century BC to 70 AD [Phase 1]), the Roman period from 1st century AD to 4th century AD (Phases 2–7), the Post Roman to the Post Medieval (Phase 8) period and to modern activity (Phase 9). Phases 2–6 have date boundaries with considerable overlap, from the Roman transition period through to the 3rd century AD; 96 % of the bone derived from contexts of these phases. All ABGs derived from Phase 6, which may represent a culmination of activity on the site, towards the end of the Phases 2–7 date range. Activity in the subsequent periods seems to have been drastically reduced with combined deposits forming only 3 % of the assemblage. It is possible that much of the bone associated with the later phases may contain a high level of residual material from earlier phases where contexts were disturbed by ploughing.

Despite the good state of preservation, bone deposits were highly fragmented. On average each bone fragment identified to element in the disarticulated assemblage was only 8 % complete. This extremely high level of fragmentation reflects a high proportion of burnt bone in the assemblage. Indeed 41 % of the total assemblage had been exposed to heat. As would be expected, fragmentation levels were highest in phases with more burnt deposits.

Burnt bone deposits: Overall burnt bone was observed in 74 % of the contexts across the site and contributed to 41 % of the total assemblage *(tab. 2)*. Results from different phases varied. In Phase 1, only 6 % of the total deposit contained burnt bone whilst Phases 2, 4, 5, 6 and 7 contained between 43 % and 64 % of fragments exposed to heat in some way. Phases 3, 8 and 9 contained between 10 and 25 % burnt fragments.

Phase	Number	% of phase total
1	31	6
2	3049	43
3	397	10
4	1515	58
5	4438	57
6	8557	48
7	64	10
8	132	17
9	23	25

Tab. 2 Ashwell. Incidence of burnt bone.

Burnt bone was well distributed across contexts in all phases. In Phases 7 to 9 the total number of contexts were too low to make viable contributions to overall patterning. In Phases 1 to 6, however, between 60 % and 91 % of contexts contained burnt bone suggesting that broad dispersion patterns across features were present across all phases. Some phases however contained large volumes of burnt bone in specific contexts. Contexts 315 and 324 contained over 2000 burnt fragments, Context 506 between 1000 and 2000 fragments and Contexts 311, 349, 505, 529, 535 and 538 contained between 500 and 1000 fragments.

Across all phases except for 7, the majority of bone was fully calcined being white in colour *(tab. 3)*. In Phases 1–6 between 70 and 85 % of the burnt remains were fully calcined. Phase 7 was the only phase to show a greater proportion of incompletely burned bones, the majority of which (75 %) were grey and may infer that deposits here were created with different variables to the earlier deposits. In all the burnt bone deposits from Phases 1–6 there were less than 10 % of fragments that showed mixed colouration patterns and low levels of black, tan or grey fragments. The incompletely burnt fragments that had mixed colours or were black and tan fragments tended to be mainly distributed in contexts with only a few burnt bones in. Deposits and contexts with large volumes of burnt bone were very evenly coloured with almost all bone fully calcined and displayed characteristics similar to human cremation deposits.

Phase	1	2	3	4	5	6	7	8
White	79	75	73	83	84	77	21	63
Grey	0	11	7	5	9	10	75	0
Black	0	3	12	6	4	3	2	10
Tan	21	1	6	2	0	1	2	0
Buff, black, grey, pink, white, etc., indicative of partial burning	0	2	1	0	<1	1	0	11
Complete colouration of fragment but showing a range of combined colours	0	8	1	4	3	8	0	16

Tab. 3 Ashwell. Colour characteristics of the burnt bone assemblage, given as a percentage of the burnt total per phase.

Variability in colouration relates to a number of variables within the burning process like temperature, time exposed to heat, the presence of minerals or metals in the fire and the processes involved in the method of heating. General domestic fires where food remains or general butchery waste may have been disposed of would be expected to create a wide variety of colour patterns with many fragments likely to show incomplete combustion due to the variability of temperatures and condi-

tions across a fire. Cooking or roasting may blacken areas of bone exposed to low level heat (c. 300 °C)[16] and leave clear bands of colour where meat around the bone may still be adhering to the bone protecting it from direct heat. J. E. Buikstra and M. Swegle suggest that only defleshed bone can become uniformly black during the heating process[17]. Whilst it is likely that some fragments of bone may have been created in these conditions it is clear that for the majority of bone deposits at Ashwell other processes were being applied.

The large deposits of evenly calcined bone in many contexts suggest that effort was made to create a highly efficient burning process. Holden et al. and Shipman et al. suggest that fully oxidised bone (calcined bone) occurs when it is exposed to temperatures of greater than 600 °C for periods of time long enough to fully oxidise the bone[18]. The presence of warping, cracking or fissuring on long bones, articular surfaces and cranial vault fragments were also observed on many fragments of bone within the calcined assemblages. These conditions occur as a result of dehydration during the heating process and can vary according to whether bone was fleshed or defleshed at the time of heating[19]. It has been observed that curved fracture patterns on long bones, concentric and mosaic cracking on articular surfaces, and warping and delamination of trabecular bone can be taken as signs of thermal alteration of fleshed bone, whilst bone that has longitudinal or transverse cracks can be indicators of bone burnt in a dry or defleshed state[20]. All deposits from Phases 1 to 7 contained variable quantities of fragments with curved cracking and articular mosaic cracking patterns whilst only a small handful of longitudinal splits were observed, only in Phases 5, 6 and 8. This would suggest that dry bone had a minimal contribution to the deposits.

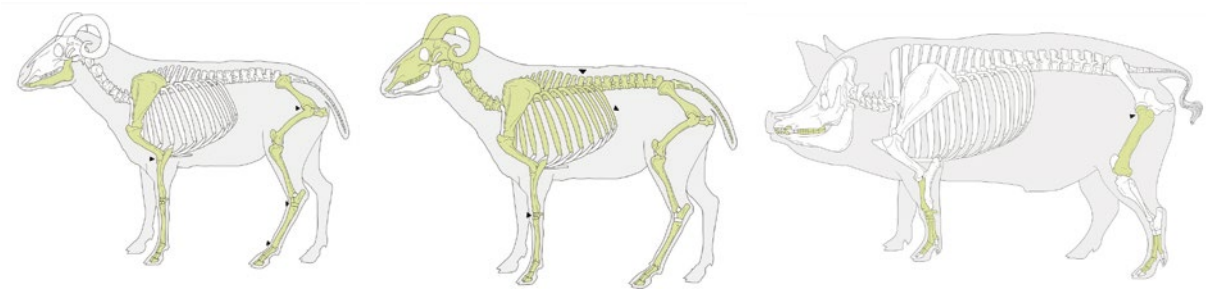
Fragmentation patterns across the burnt deposits suggested that most specimens were fewer than 2 cm in size. Phases 4 and 6 had a slightly greater proportion of fragments that lay in the 2 to 5 cm range. Such high fragmentation levels combined with the highly calcined nature of deposits may suggest that bone may have been raked or agitated during the heating process to break up bones and help complete the combustion process. It should be noted that it is possible that some smaller fragments were also missed during the collection process, as this was very largely by hand collection, with a selection of contexts sieved to recover small-sized fragments. Even colouration across fractures and fracture patterns did not suggest that a high level of post-depositional breakage was present in the assemblage. The presence of significant proportions of bone under 1 cm ranging between 20 % and 48 % in Phases 2, 4, 5, 6 and 7 may mean that the place of combustion was close to the place of deposition (a factor dependant also on the care originally in the recovery and removal of the bone debris), and that ashes were covered over fairly soon after deposition. Fluvial action and wind can disperse smaller fragments quickly if remains are left out in the open. It is often thought that for many cremation burials a selection of the material on the pyre is chosen for deposition[21] and when this occurs the deposits can be biased towards larger fragments. In these deposits smaller fragments are present and may reflect a true selection of pyre or burnt material. Phase 3 was the only period that favoured slightly larger fragments. Deposits in this phase may well have reflected greater selectivity in burial practice.

The range of species represented in the burnt deposits was quite diverse. These included cattle, sheep/goat, sheep, goat, pig, horse, dog, hare, roe deer, domestic fowl, domestic goose, medium and large bird, fish and human remains. The species range for Phases 1, 7, 8 and 9 were all limited to the main domesticated species with a small amount of horse and dog in Phase 8 which may have originated in earlier deposits. The deposits in Phases 2–6 clearly reflected a more diverse species range with bird and fish amongst the vertebrates included in the cremated material. Two human bones were noted in the calcined deposits from Contexts 506 and 535. The presence of these human bones in the assemblage suggests that it is possible that some of the other small unidentifiable fragments may also be human, but no other obvious characteristics were observed.

The range of elements included in the burnt deposits included all areas of the body for the main domesticates. Dog remains were limited to limb and axial bones. No foot bones or cranial fragments were identified. Identifiable horse remains included cranial fragments, teeth and carpals. Bird bones that were identifiable were mainly wing bones, except for the femur and synsacrum of a bantam-sized fowl. Fish vertebrae and ribs were observed.

It was noted that the vast majority of bones for pig, cattle and sheep/goat that showed evidence of fusion were unfused suggesting that mainly young juvenile animals were included in the burnt deposits. In the burnt sheep/goat remains some neonatal remains were observed, suggesting that some burnt deposits were made around the time of lambing, possibly in spring. No neonatal pigs or cattle were identified in the burnt assem-

16 Holden et al. 1995a; 1995b.
17 Buikstra / Swegle 1989, 252.
18 Holden et al. 1995a; Holden et al. 1995b and Shipman et al. 1984.
19 Lange et al. 1987; McKinley 1994; Pope / Smith 2004.
20 Baker 2003, 22; Buikstra / Swegle 1989; Worley 2008.
21 McKinley 1994.



a b c

3 **a** Charlwood. Element representation in sheep/goat. Elements shaded yellow are present. Black arrows indicate location of butchery marks. (After Barone 1976, 23 pl. 8. Template from ArchaeoZoo.org [c. ArchaeoZoo.org/Michel Coutureau, Inrap/Vianney Forest, Inrap]). **b** Charlwood. Element representation in medium mammal category. Elements shaded yellow are present. Black arrows indicate location of butchery marks. (After Barone 1976, 23 pl. 8. Template from ArchaeoZoo.org [c. ArchaeoZoo.org/Michel Coutureau, Inrap/Vianney Forest, Inrap]). **c** Charlwood. Element representation in pig. Elements shaded yellow are present. Black arrows indicate location of butchery marks. (After Barone 1976, 24 pl. 9. Template from ArchaeoZoo.org [c. ArchaeoZoo.org/Michel Coutureau, Inrap/Vianney Forest, Inrap]).

blage. One juvenile hare (556) as well as a mature one was also observed in the assemblage.

A question arises from this consideration of the burnt bone deposits: was the offering of burnt animal remains, largely sheep and pigs, a core ritual at the temple? Alternatively, are the burnt deposits part of a ritual of cleansing or purifying the sanctuary? If the latter, which would account for the wide species range overall, this activity may represent a secondary ritual that took place periodically after sacrificial and feasting activity.

Charlwood, Surrey

Compared to Ashwell, the site at Charlwood has been subjected to relatively limited excavation. The site first became known due to the discovery of a number of gold Iron Age and silver Roman coins by metal detectorists in late 2009. It lies on Wealden Clay on rising ground with a stream in the valley below. After fieldwalking and magnetometry surveys, an evaluation trench in 2014 revealed a ditch containing a large quantity of cremated animal bone and pottery. Charcoal samples were sent for ^{14}C dating, yielding a result of c. 50 BC–AD 70, within a 95 % probability.

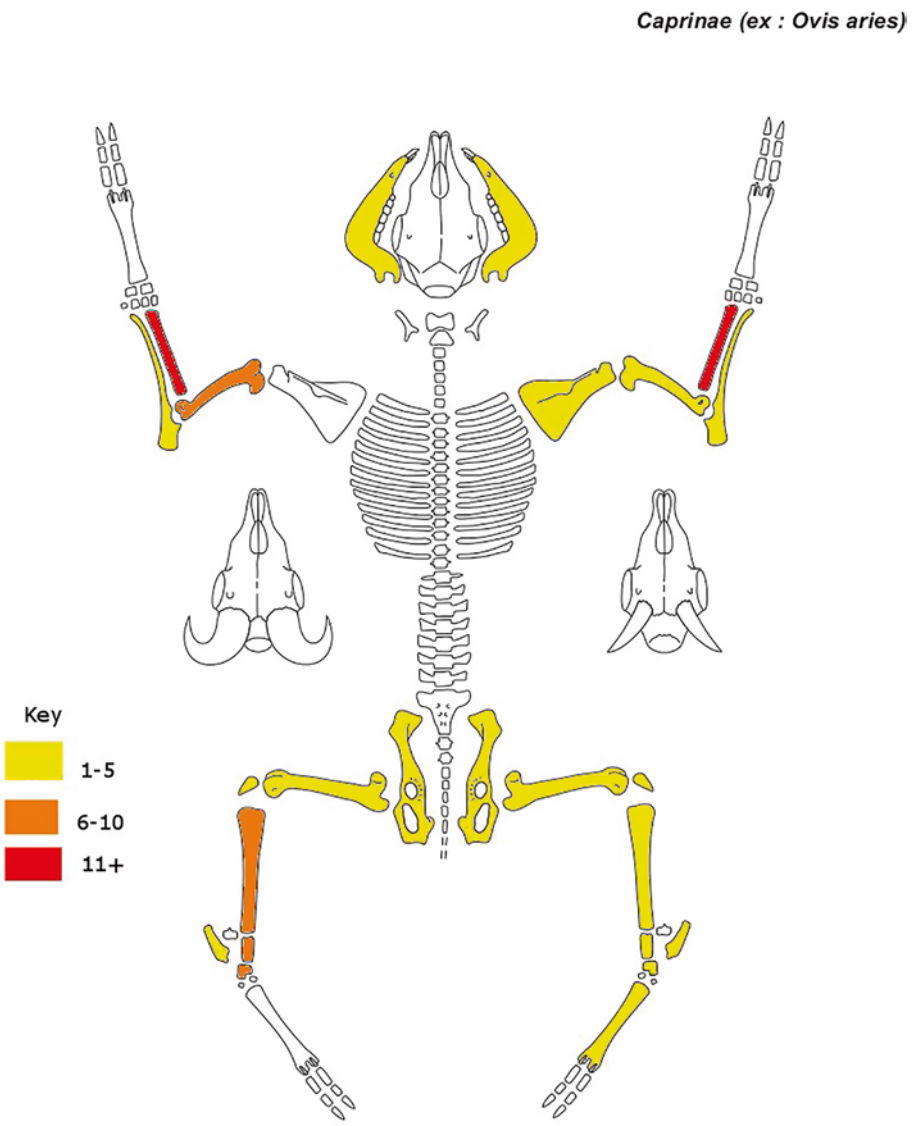
Subsequent excavation in 2016/17 has clarified the extent of the site, which takes the form of two parallel ditches apparently defining the southern boundary of an enclosure around the brow of the hill. A north-south ditch lies at the west end of the parallel ditches, containing deposits that included partial but broken pots at intervals throughout the opened portion of the ditch. These include a samian (terra sigillata) jar[22], and all appear to be early Roman in date. Excavations are continuing on the site, and the evidence so far suggests a ceremonial centre rather than settlement. Evidence for other local Late Iron Age and early Roman settlement is sparse, but has been revealed at Horley about four miles (7 km) to the east, also on clay soil.

Cremated bone from Charlwood: A large deposit of cremated bone was recovered from one of the ditches, amounting to around 5.5 kg of bone, while a much smaller deposit (c. 4.5 g) was recovered from a second ditch. Within the main ditch, a thin accumulation of silty clay was noted in places between earlier and later deposits containing cremated bone, indicating more than one deposition event. The majority of the animal bone is burnt white-grey, although a small proportion of the identified material (c. 10 %) is recorded as charred (colouration black/brown/red). This can result from uneven burning, caused by the element being deeply buried within muscle mass, or placed at the edge of the fire[23]. As at Ashwell, the cremated bone showed taphonomic features (curved cracking, mosaic cracking) consistent with the bone having been burnt fleshed rather than dry. The bone was in good general condition, with only a very few elements (6 in total) noted as having poor or eroded surfaces. The ditch was not fully excavated, meaning the bone upon which the analysis is based is only a sample of what was originally deposited, and the full extent of the original deposit is not known.

Unlike Ashwell, the cremated bone deposit at Charlwood is predominantly focused towards a single taxon. Sheep/goat remains comprised almost half of all identified fragments, and most of the rest of the assemblage

22 Dechelette 67, Flavian: pers. comm. J. Bird.

23 Symes et al. 2015.



4 Charlwood. Element representation in sheep/goat, showing right and left sides. (After Helmer 1987, fig. 6. Template from ArchaeoZoo.org [c. ArchaeoZoo.org/Michel Coutureau, Inrap/Vianney Forest, Inrap]).

was comprised of 'medium mammal' elements (270 fragments, 42 %), much of which is also likely to be sheep *(tab. 4)*. Due to the well-known difficulty of identifying between sheep and goats on postcranial bones[24], all have simply been identified as sheep/goat, although they were in general consistent with deriving with sheep (*Ovis aries*). The remainder of the assemblage (c. 11 % of identified fragments) is mostly comprised of pig and chicken remains. Large mammal bones are almost entirely absent from the assemblage, with only three fragments of cattle bone identified.

ID	NISP	MNI (element / side)	
Sheep/goat	292	8	(radius / left)
Pig	33	2	(age data)
Cattle	3	1	
Domestic fowl	15	3	(carpometacarpus / left)
large mammal	2		
medium mammal	267		
small mammal	2		
bird	16		

Tab. 4 Charlwood. Taxonomic composition of cremated bone deposit.

24 Zeder / Lapham 2010.

A minimum of eight sheep were represented *(tab. 4)*. However, considering the limited extent of excavation and the substantial amounts of unidentified medium mammal within the sample, the actual number of sheep contributing to the deposit is likely to have been considerably higher. The majority of the sheep fall into the age range 1.5–3.5 years, which is a typical slaughtering pattern within rural Roman Britain and represents the use of the animal for both meat and secondary products[25]. Unlike Ashwell, no very young sheep (< 10 months) were recorded, although one of the minimum 2 pigs in the assemblage was younger than 6 months at death.

There is no evidence for selection of particular portions of sheep or even a preference for one or other side of the carcass, with all major elements of the skeleton and both the left and right side of the carcass represented more or less equally *(figs 3 and 4)*. While there are some evident variations in frequency between different elements, these can largely be attributed to taphonomic processes common within cremations – carpals and phalanges, for instance, are common within the skeleton and their density and small size means they tend to survive burning intact; while upper limb bones (femur, humerus) and crania fragment heavily, making the remains harder to identify[26]. Pig elements are appreciably less common, and, aside from a couple of major limb bones, tend to be focused around teeth and feet, perhaps as these are the most recognisable elements *(fig. 3c)*.

Butchery evidence from pig, sheep and medium mammal bones is scarce, but knife marks are present around most of the major joints *(see figures)* indicating disarticulation of the carcass. In addition, at least one vertebra was bisected along the anterior-posterior axis, potentially indicating splitting of the main torso into two sides. While there may have been no preference for particular portions, it is clear that sheep and pigs were for the most part not cremated as complete animals, but were instead cremated at the minimum as butchered portions.

Discussion and Conclusions

Ashwell and Charlwood Compared

While there are some clear differences in the specifics, the sites at Charlwood and Ashwell both yielded substantial amounts of burnt and cremated bones, which derived from multiple animals, and which were buried in discrete deposits at late Iron Age/Romano-British ceremonial sites. Both burnt assemblages, though somewhat different in the size of the assemblages, comprised a number of different animals, and were burnt to a high temperature, probably while the bone was still fleshed. For both sites, this indicates a command of pyre technology to achieve consistent and thorough cremation, and also an investment in the resources necessary to burn these offerings[27].

The large assemblage from Ashwell, including both cremated and uncremated bone, almost certainly represents communal ritual activity in a feasting or festival setting, rather than an accumulation of many individual private sacrifices. As such, it bears similarities to both Iron Age ceremonial sites[28] and to Roman temple sites[29]. The size of the Charlwood cremated assemblage would similarly indicate communal ritual activity, especially if (as seems likely from the archaeological context) the assemblage has accumulated over a relatively short span of time.

However, while the process of the ritual is similar at both sites, there are important differences between the animals considered appropriate to be burnt. While the assemblage at Charlwood is heavily focused towards sheep, the range of animals burnt at Ashwell is substantial, including both domestic and wild taxa and a small amount of human bone. By contrast, the domesticates burnt at Ashwell are predominantly juvenile with some inclusion of neonatal sheep, while at Charlwood the age representation is both less specific and focused towards adult animals. However, at neither site is there a focus towards the burning of specific portions of animals, as has been noted in similar burnt deposits from Greek temple sites[30], and in unburnt Iron Age deposits from

25 Allen et al. 2017.
26 Bond 1996; Symes et al. 2015.
27 See McKinley 2009.
28 E. g. Llanmaes, Vale of Glamorgan, Wales: Madgwick / Mulville 2015; Ferry Fryston, West Yorkshire: Orton 2007; Hallaton, Leicestershire: Score 2011.
29 Falling into King's Group A (2005, 357–359).
30 Davis 2008.

Britain[31]. Other Roman-period ritual sites, e. g. Springhead[32], also have a lack of evidence for sidedness and selectivity of this sort, so it is possible that the practice was not so prevalent after the end of the Iron Age. The differences in specific practice between Ashwell and Charlwood are consistent with the high level of variation in orthopraxy seen in the use of animal remains across Roman ritual sites in Britain[33], and may or may not relate to differences in belief.

Cremated bone and burnt offerings in Roman Britain and beyond

Cremated animal bone representing burnt offerings remains a relatively uncommon find in Romano-British temple or shrine contexts, with Ashwell and Charlwood being two of the only published examples. However, burnt animal bone is regularly present in cremations as an offering forming part of a human cremation deposit. Around 30 % of all cremations in Roman Britain contain burnt animal remains, most often pigs and chickens, but also sheep, cattle, horse, and other mammal species[34]. The degree of burning on the deposits from both Ashwell and Charlwood suggests some cross-over of pyre technology from practices relating to human cremations, and beliefs concerning the action of cremation of bone. Both sites are located in south-east England, which saw cremation rites introduced in the later Iron Age[35], and which persisted as a centre for cremation burial throughout much of the Roman period[36]. Ashwell has both the presence of a very small number of human calcined bones (two identified specimens) in amongst the much larger calcined animal bone assemblage[37], and a putative link to funerary rites in the form of stone structures for possible laying out of human bodies prior to burial or cremation[38]. There may have been a human cremation element to the rituals at Ashwell, but the evidence is very exiguous and circumstantial.

Burnt offerings have been found at other Romano-Celtic shrine sites in the north-west provinces. They are infrequent in Britain, and all examples so far identified from this country have derived from the same south-eastern to south-central region as Ashwell and Charlwood. Other examples from this region include Wanborough, Surrey[39], and are associated with the sacrificial practice of *holocausta* of avian offerings to eastern cults, e. g. *Verulamium* 'Triangular temple', St Albans, Hertfordshire[40]. The Tabard Square temple site, Southwark, London has individual burnt sheep buried in individual pits of 2nd century AD date, and this practice continues from 'pre-Temple' into temple phases, when a pair of Romano-Celtic temples, probably associated with Mars Camulos, came into existence[41]. Similar calcined sheep buried individually have been found elsewhere in London, of later Roman date[42]. Two calcined juvenile pig skulls were also used as a probable foundation deposit in a 2nd century building in Southwark, London[43]. However, not all calcined animal deposits are interpreted as ritual; oven-roasting for food provision to travellers and subsequent incineration of waste bone has been put forward for pits with calcined and fragmentary pig bone from the roadside settlement at Beanacre, Wiltshire[44].

It is clear that temples and ritual sites did have the resources and motivation to burn and bury animal offerings, with Ashwell and Charlwood only being two examples within a diverse tradition. The usually heavily calcined bones are not simply the result of discard after cooking, which results in a different pattern of burning associated with meal preparation and consumption at temple sites[45]. One interesting possibility is that the two sites discussed in this article both had origins in the Late Iron Age, and therefore Iron Age antecedent beliefs may also have contributed to cremated animal bone practices. Occasional examples from earlier in the Iron Age reinforce the impression that pre-Roman traditions had developed ideas linked to the burning of animal carcasses and offerings. At Berwick Field, a middle Iron Age site close to Winchester, Hampshire, a single pit contained burnt bone representing several horse limbs, which had been burnt (although not fully calcined) on a pyre while fleshed, and were subsequently collected and buried[46]. Iron Age human cremations also had burnt animal offerings included in the cremated remains, e. g. at Acy-Romance, Ardennes[47], and at King Harry Lane, Hertford-

31 Madgwick / Mulville 2015; Orton 2007; Score 2011.
32 Grimm 2011, 29.
33 King 2005.
34 Cf. Allen 2018b; Hill 2017; Worley 2008; Olive 2008.
35 Barber 2011.
36 Smith et al. 2018.
37 Burleigh 2018b, 333.
38 Burleigh 2018b, 326–327; 332–333.
39 Done 1984, 191; Nicolaysen 1994, 162.
40 King 2005, 355–356; Wheeler / Wheeler 1936, 113–120. See also Mainz: Hochmuth / Witteyer 2008.
41 Rielly 2015, 208; 221.
42 Rielly 2001; Yeomans 2003.
43 Ainsley 2002, 273.
44 Higbee 2018.
45 Lepetz / Van Andringa 2008, 23; Green 1992, 97–100.
46 Grunwald 2006.
47 Méniel 1992, 120–129.

shire[48]. However, in both Britain and the north-west provinces as a whole, the incidence of burnt bone appears to rise following incorporation into the Roman empire, and therefore there is also a factor of Roman cultural/religious influence at play in the development of cremation as a ritual practice at sacred sites.

Cremated animal bone from Roman temple and shrine sites in Britannia and other north-western provinces is a phenomenon present on a minority of sites. It is, however, a distinctive element of ritual activity, requiring investment in resources to incinerate the remains, and probably also a desire to 'cleanse' areas of ritual activity at periodic intervals. When considered as a whole, ritual practice varied considerably from one cult site to another[49], and the usage of cremation for animal remains apparently became part of the orthopraxy at some, at least, of the open-air shrines associated with communal feasting. Both Charlwood and Ashwell are examples of open-air shrines which utilise cremation of animal remains, although the practices at both sites appear distinctly different. While comparable examples are limited, it is clear from those which have been reported that burnt offerings vary appreciably between sites in terms of the quantity, age and type of taxa considered suitable for offering. The study of bioarchaeological remains from ritual contexts, including Roman and Iron Age sites, is now well-established, and the identification of cremation and burnt offering practices at sites within Roman Britain offers a new angle to current understandings of Romano-British ritual practice.

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References of figures

Fig. 1: King 2005, fig. 1, with modifications. – Fig. 3a: After Barone 1976, 23 pl. 8. Template from ArchaeoZoo.org (c. Michel Coutureau (Inrap)/Vianney Forest (Inrap)). – Fig. 3b: After Barone 1976, 23 pl. 8. Template from ArchaeoZoo.org (c. Michel Coutureau (Inrap)/Vianney Forest (Inrap)). – Fig. 3c: After Barone 1976, 24 pl. 9. Template from ArchaeoZoo.org (c. Michel Coutureau (Inrap) / Vianney Forest (Inrap)). – Fig. 4: After Helmer 1987, fig. 6. Template from ArchaeoZoo.org (c. Michel Coutureau (Inrap)/Vianney Forest (Inrap)). – All other tables and figures: Authors.

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Abstract

Burnt or cremated animal bone has been found at ritual sites across the Greek and Roman world, but has rarely been reported in Romano-British contexts. We discuss two examples of this practice from two sites in south-east England, Ashwell (Hertfordshire) and Charlwood (Surrey). While the process of cremation and deposition of animal bone is similar on both sites, specific taxonomic compositions vary, indicating that this was as variable as other Roman ritual practices in Britain. Other examples from across the south and east of Britain indicate that burning animal offerings was a part of accepted orthopraxy in certain ritual contexts.

Zusammenfassung

Verbrannte Tierknochen von zwei Kultplätzen in Britannien

Verbrannte oder kalzinierte Tierknochen wurden an zahlreichen rituellen Stätten in der griechischen und römischen Welt gefunden, aber nur selten in römisch-britischen Kontexten untersucht. Im Mittelpunkt der Studie stehen zwei Fundorte aus Südostengland: Ashwell (Hertfordshire) und Charlwood (Surrey). Während der Prozess der Verbrennung und Deponierung von Tierknochen an beiden Stätten ähnlich ist, unterscheiden sich die spezifischen taxonomischen Zusammensetzungen, was darauf hinweist, dass dies ebenso variabel war wie andere römische rituelle Praktiken in Britannien. Andere Beispiele aus dem gesamten Süden und Osten Britanniens deuten darauf hin, dass das Verbrennen von Tieropfern in bestimmten rituellen Kontexten ein Teil der akzeptierten Orthopraxie war.

Résumé

Des os d'animaux incinérés provenant de sites rituels/cérémoniels en Bretagne

On a trouvé des os brûlés ou incinérés dans des sites rituels à travers tout le monde gréco-romain, mais rarement dans des contextes britto-romains. Nous examinons ici deux exemples de cette pratique provenant de deux sites du Sud-Est de l'Angleterre, Ashwell (Hertfordshire) et Charlwood (Surrey). Alors que le processus de l'incinération et du dépôt des os animaux est similaire pour les deux sites, les compositions taxonomiques spécifiques, elles, varient comme d'autres pratiques rituelles romaines en Bretagne. D'autres exemples à travers le Sud et l'Est de la Bretagne révèlent que la combustion d'offrandes animales faisait partie d'une orthopraxie acceptée dans certains contextes rituels.

Animals to the slaughter. Meat-sharing and sacrifice in Geometric and Archaic Greece

by *Veronika Sossau*

Keywords

Meat sharing, commensal consumption, Early Iron Age Greece, burials, sanctuaries

Schlüsselwörter

Fleischteilung, Ritualmähler; Griechenland der frühen Eisenzeit; Bestattungen; Heiligtümer

Mots-clés

Partage de la viande, consommation commensale, la Grèce du début de l'âge du Fer, sépultures, sanctuaires

Introduction

Strictly speaking, meat is not a nutritional necessity for humans. In pre-industrial societies, nutritional needs were often secured by vegetable components. Nevertheless, hardly any other food has ever achieved a similar social prestige as meat for humans and other primates, e. g. chimpanzees[1]. Meat is used to trade favours, as an instrument to both form and destroy social bonds and to achieve, maintain, and disturb hierarchical relations, especially between males. Meat sharing is in fact attested as a form of social currency used to manipulate the behaviour of other group-members[2]. While the exploration of this behaviour is a central question in prehistory, it tends to get somewhat overlooked in the historical period. In Classical Greek archaeology, for instance, reflections on the role of meat have traditionally focused on the institution of the Greek sacrifice and thus religious aspects[3]. Numerous texts and images from the Archaic to the Hellenistic period have served as a material basis for the reconstruction of various religious rituals and key institutions of 'Greek society'. Since there are in many cases no or only limited contemporaneous sources, ideas and concepts characterising the Classical and Hellenistic *polis* were projected back on earlier periods.

1 For primates, esp. chimpanzees, see i. e. Nishida et al. 1992; Stanford 1995; Stanford 1999; Mitani / Watts 2001; Nishida 2012.

2 Extensively: Nishida et al. 1992; Nishida / Hosaka 1996; Stanford 1999.

3 I. e. Meuli 1975; Lehnstaedt 1970; Burkert 1997; Detienne / Vernant 1979; Kirk 1981; Berthiaume 1982; van Straten 1988; van Straten 1995; Étienne 1992; Peirce 1993; Himmelmann 1997; Bonnechere 1998; Laxander 2000; Bowie 2002; Georgoudi et al. 2005; Naiden 2007; Naiden 2013; Ekroth 2007; Ekroth 2008; Ekroth 2011; Ekroth 2013 and recently Murray 2016; Smith 2016.

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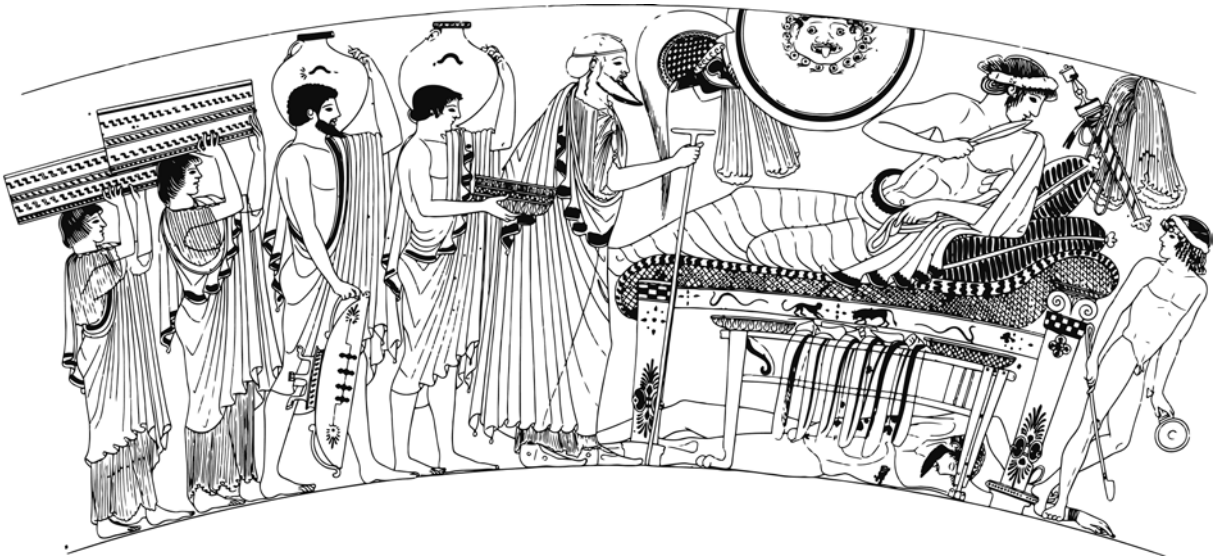
1 Attic Black Figure Hydria by the London-B76 painter, c. 570/60 BCE. (Zürich Univ. Museum Inv. 4001. Photo: © Archäologische Sammlung der Universität Zürich, Inv. 4001. Photo: Silvia Hertig).

Meat-consuming heroes and/or villains? How to deal with ancient texts and images

To illustrate that problem, I want to discuss a series of Archaic vase paintings[4] that show a famous scene from the Iliad[5]: In the 'ransom of Hector', Achilles reclines on a *kline*, under which the dead and abused body of his opponent Hector lies. Escorted by the messenger god Hermes (who is not always displayed), Hector's father Priam approaches Achilles to negotiate the ransom of his son's body in order to be able to arrange a proper funeral. In some images, such as the example illustrated here *(figs 1 and 2)*, gift carriers accompany him[6]. Achilles is always shown as a reclining banqueter and in front of his *kline* there is a table full of large strips of meat. In some of the images, mostly earlier than 510/00 BCE, he holds a *phiale* (a shallow bowl used for drinking and libations)[7] and in one case a drinking vessel[8]; from 510/00

4 For a complete recent catalogue see Sossau 2019, A1–A19. References below will refer to BAD (Beazley Archive Database) entries, which contain comprehensive publication records.
5 Hom. Il. 24, 471–687.
6 Attic Red Figure Skyphos, Brygos (painter), c. 490 BCE from Caere, Vienna, Kunsthistorisches Museum Inv. 3710 (BAD 204068).
7 Attic Black Figure Amphora, London-B76 painter, c. 570/60 BCE, New York, private (BAD 9029559). – Attic Black Figure Hydria, London-B76 painter, c. 570/60 BCE, Zürich Univ. Inv. 4001 (BAD 350209). – Attic Black Figure Amphora, Rycroft painter, 520/10 BCE, Toledo (Ohio), Mus. of Art Inv. 1972.54 (BAD 7276). – Attic Red Figure Cup, Makron painter, c. 480 BCE, New York, Met. Mus. Inv. 07.286.49 (BAD 204974). – Attic Black Figure Lekythos, Sappho painter, early 5th c. BCE, lost (BAD 44246).
8 Attic Red Figure cup, Oltos painter, 520/10 BCE, from Vulci, Munich, Antikensamml. Inv. 2618 (BAD 200510).



2 Attic Red Figure Skyphos by Brygos (painter), c. 490 BCE, from Caere. (Vienna, Kunsthistorisches Museum, Inv. 3710. Drawing after Engelmann 1899).

on he is usually shown with a knife instead of the vessel[9], and once with a dagger[10].

Images displaying reclining men on *klinai* are often associated with the *symposion*, a key institution of the late Archaic and Classical *polis*[11]. Against the background of the *symposion*, interpretations of the images displaying the 'ransom of Hector' have often focused on the characterisation of Achilles as a *monoposiast*: the hero is represented as a banqueter, but he is reclining alone. In L. Giuliani's opinion, it was a deliberate choice to show the ambivalent hero Achilles as a violator of social etiquette: not only had he abused the dead body of his opponent, but he would also eat enormous amounts of sacrificial meat, all alone, without sharing it with his *hetairoi*, his drinking friends and comrades in battle[12].

But to what extent are such later concepts helpful tools for an interpretation of Archaic imagery, and how are meat consumption and distribution processed in contemporaneous texts? The Homeric epics mention commensal meals and the sacrifice of animals in funerary contexts[13]. In the Homeric epics, Hesiod's 'Works and Days' and fragments of Archaic lyric poetry, commensal meals are core elements of guest friendship networks. When *xenoi* (guest friends) arrive at an *oikos* (household), the head of the household slaughters an animal and distributes apt shares to all participants of the feast[14]. In Archaic lyric poetry and maybe even in Hesiod's 'Works and Days', commensal consumption of meat and wine might be linked to feasts taking place in sanctuaries[15].

The chunks of meat and the knife that Achilles is presented with in some of the illustrations of the 'ransom of Hector' were often understood as an indication that the hero was eating, or a hint to his enormous appetite[16]. It has been largely ignored, though, that the large strips of meat are raw, unprepared, and not even cut into edible slices. Furthermore, there is no evidence for a use of knives as cutlery in ancient Greece[17]. We do know, on the other hand, that they were used for the processing and distribution of meat, especially in ritual contexts.

9 Attic Red Figure Hydria, Kleophrades painter/Pioneer group, c. 510/00 BCE, Cambridge, Harvard Arts Museums Inv. 1972.40 (BAD 352403). – Attic Black Figure Lekythos, c. 500 BCE from Attica, Athens, National Museum, Inv. 486 (BAD 14344). – Attic Red Figure Skyphos, Brygos (painter), c. 490 BCE from Caere, Vienna, Kunsthistorisches Museum, Inv. 3710 (BAD 204068). – Attic Red Figure Cup, Brygos (potter), c. 490/80 BCE, New York, Shelby White & Leon Levy no Inv. (BAD 204333). – Attic Red Figure Cup, Makron painter, c. 490/80 BCE, Paris, Louvre, Inv. G153 (BAD 204695).

10 Dagger or short sword: Attic Red Figure crater, circle of Syleus-painter, 500–490/85 BCE from Tekirdağ (Bisanthe/Rhaidestos), Tekirdağ Museum, Inv. 1855 (BAD 9022290).

11 I. e. Fehr 1971; Dentzer 1982.

12 Giuliani 2003, 176–181.

13 See below. For comprehensive studies of meat-sharing and consumption in the Homeric epics see Sherratt 2004; Hitch 2009; Bakker 2015.

14 I. e. Nestor: Hom. Od. 3, 417–473. – Odysseus: Hom. Od. 8, 469–385. – Telemachos: Hom. Od. 17, 330–345. – Bakker 2015. – For Agamemnon and his special role see Hitch 2009. – For Hesiod on reciprocy see esp. Hes. Op. 342–362.

15 Hes. Op. 582–596; 722; 736; 742; Pind. Pae. 6.

16 I. e. Wolf 1993, 95–96; Giuliani 2003, 181.

17 Sparkes 1962, 132.

Apart from archaeological evidence which is discussed below, the importance of the knife is also attested in the Homeric epics: on several occasions, the large sacrificial knife is specifically described as a ritual object worn by the *basileutatos*, the *basileus* of *basileis*, king of kings, master of sacrifice[18]. When a guest arrives, for instance Telemachus at the palace of Nestor, the *basileutatos* takes the knife from his belt and slaughters an animal. He guides other participants of the feast (e. g. his sons) through the ritual kill[19]. To perform the sacrifice, he neither needs an altar – the core element of the Greek sanctuary – nor an additional specialist like a priest (later: *hiereus/mageiros*)[20]. The distribution of the meat is described in detail – in his role as *basileutatos* Nestor carefully ensures that everyone receives the shares they deserve according to their social status and distributes them personally. In a competitive world, Ch. Ulf has proposed, distribution was perceived as a tool to achieve reputation[21]. In the conflict with his *basileutatos* Agamemnon, the raging Achilles had begun to challenge Agamemnon's status by receiving guests and sharing meat earlier in the epos[22]. Later and hidden from Agamemnon's eyes, he received Priam when he enters Achilles' tent to negotiate the terms for the ransom of his son's body. The Homeric poet meticulously describes how Achilles slaughters a goat (without performing a religious ritual) and distributes apt shares to his guest[23].

To sum up these observations, in the Homeric epics meat-sharing and the sacrificial knife were perceived as symbols of power. In regard to the series of vase paintings that display the 'ransom of Hector', this means that Achilles might not be characterised as a villain violating social norms by eating massive amounts of meat all on his own. On the contrary, the knife and the slices of meat portray him as a powerful *basileus* and hence a meat sharer[24]. Even if we were to read the image in a narrative way, we could imagine him preparing the meat for his meal with Priam. Alternatively the display of knife and meat, which were both associated with the socially correct sharing of a meal with a guest, served to underline the importance of this crucial scene within the epic: when Achilles received Priam as a generous host, he overcame his rage and returned to the 'civilised' world. This again did not only lead to a proper burial of Hector, but ultimately also to the prosecution (and thus the end) of the Trojan War.

Tracing meat consumption in the archaeological record

Apart from fictional texts as the already mentioned Homeric epics (and later illustrations of a few selected scenes on painted vases) and Hesiod's remarks on sacrifice[25], there are no texts and hardly any images that could help us reconstruct the role of meat-sharing and commensal meat consumption in Early Greek societies between the 10th and the 7th centuries BCE. Stable-isotope-analysis ($\delta^{13}C/\delta^{15}N$) of human remains might shed some light into the question, by indicating which groups of people had what kind of access to animal proteins, but until now this method is still rather new and has yet only rarely been applied for Early Iron Age cemeteries[26]. In contrast to other finds, such as weapons, jewellery or painted pottery, objects that can be related to meat consumption such as animal bones or knives have rarely been systematically studied in their archaeological contexts, even though ritual and funerary contexts have a high potential to illuminate the different roles these objects might have played[27]. Since knives are multifunctional tools, they have, of course, to be dealt with special care and caution.

18 Hom. Il. 3, 271–272; 19, 252–253. – See also Kitts 2005, 15; Hitch 2009, 90; 186–187. – Regarding functional and symbolical value of the knife: Nagy 1979.
19 Hom. Od. 3, 417–473.
20 Kirk 1981, 65–68. – Regarding the differences between Homeric sacrifice and meat consumption and the Classical Greek concept of sacrifice see also Hitch 2009, esp. 28–39.
21 Ulf 1990, 195–202, esp. 198–199. See also Kistler 1998, 93–95.
22 Hom. Il.9, 199–222.
23 Hom. Il. 24, 621–624.
24 For knives as symbols of power see also Gebauer 2002, 467–470; 514.
25 Hes. Theog. 535–557; Hes. Op. 337.
26 Papathanasiou et al. 2009; Papathanasiou et al. 2013; Panagiotopoulou / Papathanasiou 2015, esp. 111–113.
27 For an attempt of a systematic investigation of animal bones and knives in ritual and funerary contexts see Sossau 2019.

3 Attic Late Geometric Crater, Trachones Workshop. (New York, Metropolitan Museum Inv. 14.130.15. Photo: © Metropolitan Museum. Drawing [Detail] by V. Sossau).

Meat in funerary contexts

That funerals were perceived as important events in Early Iron Age Greece is not only evident by the high effort that was often put into burials (especially elite burials). In the Homeric epics, burials of heroes are crucial events involving sacrifices, games and commensal consumption[28]. When figurative scenes reappeared on painted vases in the 8th century BCE, funerary scenes belonged to the most popular motifs[29]. Many of the decorated vessels were also used in a funerary context; some were probably even made for it. The famous 'Molione-crater' (c. 725 BCE, Metropolitan Museum, New York), for instance, served as a monumental grave marker[30]. It was decorated with a funerary scene *(fig. 3)*: while the *Prothesis* was one of the most frequently displayed motifs in the Late Geometric period, the procession of male figures approaching the deceased with what might be funerary gifts – dead mammals, chicken, and maybe fish or oyster – is an exceptional example of a painting illuminating one of the manifold roles animals might have played in funerary rituals[31].

In the well-explored Athenian necropoleis and burial plots at the Kerameikos and the Agora, highly fragmented faunal remains were often discovered mingled with cremations[32]. It is possible that the animals were burned with the deceased on the pyre (as grave gifts or sacrifices). Still, the possibility that remains of funerary meals were added to the cremation has also to be taken into account. In some cases, the animal bones had obviously been exposed to the fire for shorter time than the human remains[33]. The re-examination of the Early Iron

28 See esp. the funeral of Patroclos involving bloody sacrifice, commensal consumption and funerary games: Hom. Il. 23.

29 Some of the figurative motifs that came up in the Late Geometric period are also known from Late Bronze Age Pictorial Style. Their reappearance may be understood as a result of a circulation of imagery and concepts in the Aegean, which can be traced to Egypt and the Near East. Direct connections can hardly be assumed: the circulation of these motives, which were adapted and transformed for new contexts several times, might be read as a result of an increasing mobility. Hiller 2006, 186–188; Panagiotopoulos 2007; Blakolmer 2012, 30–37.

30 Attic Late Geometric Crater, Trachones Workshop, New York, Met. Mus. Inv. 14.130.15: ThesCRA 5 (2005) 311, 1016 (J. Metz); Richter 1915, 394–396, pl. 21; 22; 23, 2–3; Boardman 1966, 1–4, pl. 1–3; Fittschen 1969, 20; 68–69, M3; 70–75; Ahlberg-Cornell 1971, 27; 22; 212–213; 240–252 figs 22a–i; Froning 1988, 182–187 figs 10–12; Stansbury-O'Donnell 1995; Giuliani 2003, 56–58. – The 'double' figure at the end of the gift bearers provoked a discussion if the image might refer to a mythological background such as the funerary games held for Amarynkeus (Hom. Il. 23, 630–640).

31 For a contemporaneous parallel for a funerary procession see a Late Geometric IIB amphora, Athenian Agora Inv. P 4990: Papadopoulos 2007, 118; 43; 119 fig. 115b. – For the transfer of the motif see Sossau 2019, 70–73.

32 See the remarks of Kübler in Kraiker / Kübler 1939, 181; Breitinger 1939; Boardman 1966, 2. – Cremations with animal remains at the Kerameikos: Kraiker / Kübler 1939, Nr. PG 4; PG 7; PG 16; PG 20; Kübler 1954, Nr. 2; 7; 11; 13; 14; 19; 22; 23; 30; 36; 38; 41; 42; 44; 59; 72; 86; 89; Freytag gen. Löringhöff 1995, 645–646, TN 94-1; Schlörb-Vierneisel 1966, 16; 27, hS 59. – Cremations with animal remains at the Agora: N 16:4; C 9:9; D 16:2; H 16:6; R 20:1; N 16:3 (Ruscillo 2017).

33 Breitinger 1939, 260.

Age cremations of the Agora cemeteries by D. Ruscillo also showed that the archaeozoological remains in cremations were mostly heterogeneous and included fragments of several species and individuals (of various ages)[34]. Knives, too, were sometimes discovered in cremations[35]. They were worn by the deceased on the pyre, given as a gift to the pyre or were used for sacrifices in context of the funerary ritual and/or funerary meals and then deposited in the urn as a reminder of these events. The high fragmentation and variability of animal bones that appear frequently in cremations (as in the so-called tomb of a 'Rich Athenian Lady', Agora H 16:6) might speak in favour of this final hypothesis[36].

Outside the urns as well as in inhumations, animal bones were mostly discovered together with or close to other parts of the grave furniture, especially ceramic vessels. The archaeozoological material of the Kerameikos necropoleis has not yet been re-examined[37]; in the case of the Agora burials it seems that the faunal remains were only partly preserved[38]. In some cases, they were deposited in or covered by ceramic vessels[39]. Usually, only parts of the animals were present, often the femora of cattle (in literary sources attested as sacrificial shares[40] and later also as honorary shares[41]), though, unfortunately, anatomical parts and the species were often not specified. Femora of cattle, however, are specifically mentioned on some occasions, twice inside vessels[42]. These finds could be interpreted as food for the deceased, but also as funerary gifts, honorary shares, indicators of social status, or even gifts for a goddess. Unfortunately, cut marks that might have helped to shed more light into its specific function were not described.

There are only rare examples of complete animals in Early Iron Age Greek burial contexts: apart from the four horses in the 'Toumba' in Lefkandi (1000/950 BCE)[43], which is an exceptional case and was probably a sacrifice of horses, another horse burial at Lefkandi[44] and the burial of a single horse at the margins of the *tumulus* at the Rundbau at the Athenian Kerameikos (7th century BCE)[45], there are only two more examples of Athenian burials containing complete animals that were discovered next to the deceased. In a rich Early Geometric grave, the skeleton of a 3.5–4.5 year old boy was accompanied by a piglet[46], and in another Late Geometric grave a pig lies next to a deceased man[47]. The pigs most likely represent chthonic sacrifices. Also fills (which mostly contain material from the pyre) contained bones, in rare cases including the bones of dogs. Due to later activities in the area, we have hardly any evidence for rituals performed on the surface of the graves that might have involved animals[48].

34 Ruscillo 2017.

35 Kerameikos 17 (11th/10th c. BCE): Kraiker / Kübler 1939, 191–192. – Agora N 16:4; D 16:2: Ruscillo 2017). – See also Smith 1895/96, 25; Droop 1905/06, 91–92 fig. 12; Coldstream 2003, 333; 339; 340, pl. 46, B7; Kalaitzoglou 2010, 70; 73 for a reference to another 17 cm long iron knife discovered in a large Geometric amphora along with some two gold ribbons and some calcinated bones.

36 For the faunal remains in the cremation of the pregnant woman with lavish grave gifts see Liston / Papadopoulos 2004, 15; Ruscillo 2017, 566–567.

37 A re-examination will be carried out by the German Archaeological Institute under the direction of S. Hansen (I thank J. Stroszeck for this information).

38 Ruscillo 2017, 561. It can be assumed that animals have played an even more significant role for the Agora burials, but the material was neither systematically collected nor described during the early excavations.

39 In ceramic vessels: Kerameikos, Kübler 1954, Nr. 22; 26; 79; 86; 89(?). Agora G 12:24: Young 1939, 44, XI; Angel 1945, 306; 84. – Covered by ceramic vessels: Kerameikos, Kübler 1954, 2; 13; 29. Agora G 12:14: Young 1939, 36; 9.

40 Hes. Theog. 535–557; Hes. Op. 337; Hom. Il. 1, 458–467; Hom. Od. 2, 421–429; 3, 447–463; For the sacrificial share see Ekroth 2011.

41 Tsoukala 2009; Ekroth 2013.

42 Femora inside vessels: Kerameikos, Kübler 1954, Nr. 87; 89. – Burial plot at Pireas Street, Brückner / Pernice 1893, Nr. 16.

43 For the horse burial in the 'Toumba' see: Popham et al. 1993, 21.

44 Tomb 68: Popham / Lemos 1996, pl. 21–22; Crielaard 2007, 176.

45 For the horse burial at the Rundbau (Rb 8–9) see Knigge 1980, 59–61; Schäfer 1992, 52–53.

46 The burial also contained a terracotta boot. Agora H 17:2: D'Onofrio 2001, 271; Kalaitzoglou 2010, 64,3; Papadopoulos / Smithson 2017, 118–123, T14; Ruscillo 2017, 566, T 14.

47 Kerameikos, burial 10: Kübler 1954, 215,10 pl. 12,4459.

48 Two pits containing burned material and fragmented animal bones were discovered next to the stele of Kerameikos, hS 59: Knigge 1966, 112; 114, 206. For a discussion of other, more questionable examples see Sossau 2019, 80–81.

Knives in funerary contexts

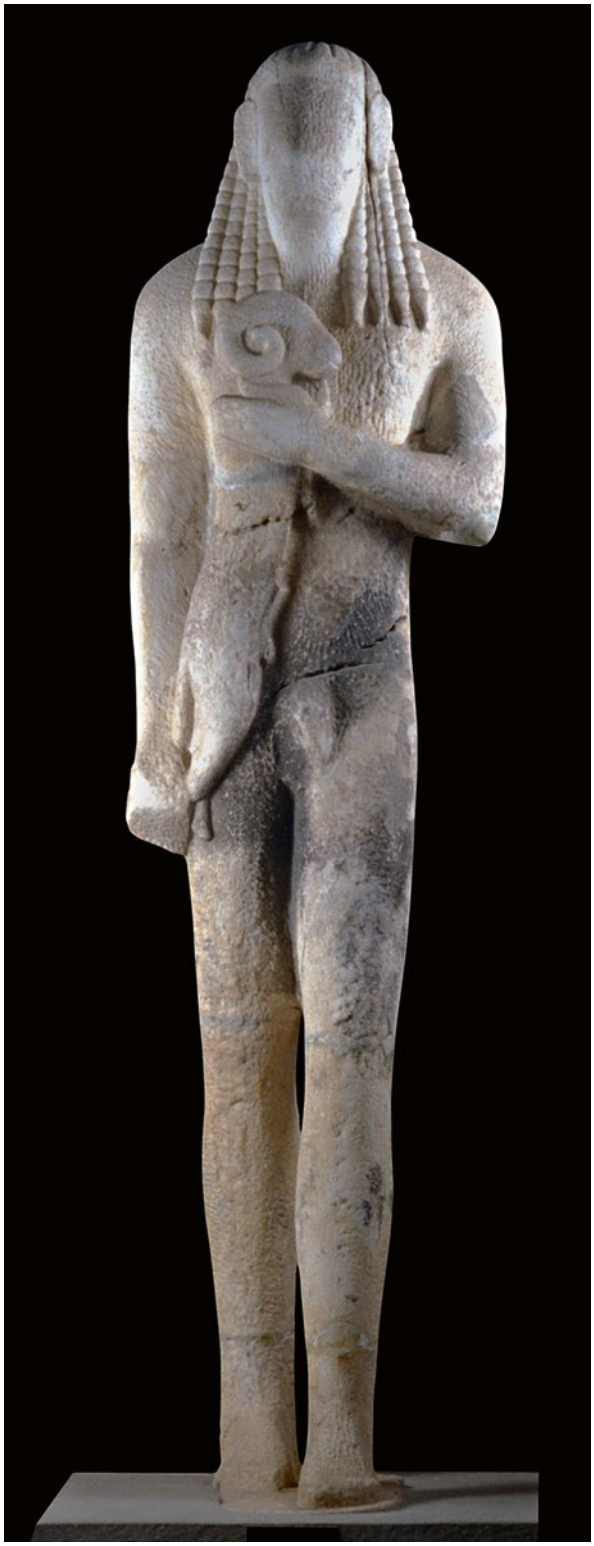
Knives, too, were often part of the grave furniture, and often they were perceived as a part of the weaponry of warrior burials. The so-called "warrior graves" are characteristic of Early Iron Age Greece. In Athens, graves containing weapons first appear in the 11th/10th, peak in the 9th, and fade out at about the mid 8th century BCE[49]. In both Euboia and Attica, knives typically appear in rich graves and indeed, these graves often (but by no means exclusively) do contain weapons. Although less frequently, knives were also discovered in (mostly lavish) female graves (10th–8th century BCE)[50]; smaller shapes even appear in burials of children[51]. The best-known examples for famous burials with knives are the female inhumation in the 'Toumba' at Lefkandi, c. 1000/950 BCE, the 'Grave of Isis' in Eleusis, and some rich burials of cremated women in Athens[52]. Contrary to other weapons, knives continue to be present into the early 7th c. BCE[53].

In inhumations, knives were often discovered close to the hip of the deceased. We can therefore assume that they were probably worn on the belt. They also occurred close to a hand or on the breast of the deceased and, in rare cases, with other parts of the grave goods, such as pottery, sometimes in pits above the head or below the feet[54]. In cremation burials, knives were discovered both inside and outside the urns. Grave gifts deposited outside the urn were sometimes wrapped around the vessel as if the objects were symbols for competences: weapons were reminders that the dead was part of an elite family with warrior status[55], bridles hinted at the privilege of horse keeping[56], cheese graters and iron spits to feasting activities and the cultivated consumption of wine etc.[57]. Knives outside the urns may have been part of the weapon sets of warriors[58], but they might also have been perceived as an indication of ritual competence – this would also apply to knives that have been discovered in graves without weapons.

Traces of meat consumption in Early Greek sanctuaries

Early Iron Age sanctuary contexts were often disturbed by later building activities, or they were excavated too early to expect stratigraphical information about animal bones or corroded iron objects. But some sanctuaries, such as the sanctuary at Kalapodi in central Greece, yielded interesting contexts[59]. One of the most interesting was discovered in an area southeast of the later Northern temple. There was a little shrine used in the Late and Submycenean period: Some unburned animal bones as well as a deposition of four juvenile tortoises and the partial skeleton of a one-year old caprine (skull, forefeet and partial hindfoot) are documented from this period[60]. After the shrine was given up, the area was used to deposit knives and to accumulate ashes containing massive amounts of very fragmented calcinated animal bones, almost entirely sheep/goat. There was a peak in this activity in the 8th century. The fact that sacral and tail bones are missing[61] speaks against an interpretation as an ash altar on which sacrifices were performed. It seems that the ashes were rather remains of sacrificial meals, which were deposited within the sanctuaries, as well as some of the sacrificial tools, the knives. The area was used for this purpose into the Archaic period and over the years, more than 200 knives accumulated in the area[62].

49 For 'warrior graves' in Athens and Lefkandi see Whitley 1996; Whitley 2002; Marini 2003; D'Onofrio 2011.
50 Lefkandi: 'Toumba' building, inhumation of the 'Queen', T.b. 2: Popham et al. 1982a; Popham et al. 1982b; Popham et al. 1993; Antonaccio 1995; Antonaccio 2002; Lemos 2007; Harrell 2014; Kistler / Ulf 2015; Crielaard 2016. – Kerameikos: Kübler 1954, 199; 243. Kerameikos, VDAk1: v. Freytag gen. Löringhoff 1974, 21. – Agora, D 16:2 (see ref. 45). – Eleusis: 'grave of Isis': Skias 1898, 106–110 pl. 6.1–6; 8–18; Papangeli 2012.
51 Eretria, Heroon tomb 1. – Kerameikos, burial 50.
52 See ref. 49.
53 This has already been noticed by Müller-Karpe 1962, 66.
54 For a more detailed analysis see Sossau 2019, 36–51.
55 Whitley 1996, 216–217; Whitley 2002, 219–220; Lemos 2002, 124; Dakoronia 2006, 501–502
56 Bräuning 1995, 27.
57 Popham et al. 1982a, 240.
58 Lemos 2002, 124.
59 For a recent overview over the sanctuary at Kalapodi see Niemeier 2013; Niemeier 2016. Up until now, only few of the ritual contexts containing knives and animal bones are published in detail.
60 Felsch 2013, 54–56.
61 For a similar phenomenon in Eretria see Huber / Méniel 2013, esp. 250–252.
62 Stanzel 1991; Felsch 2001; Felsch 2013; Scullion 2013 (does not take the more recent investigations into account).



4 Kriophoros (H 3.50 m). (Thasos, Archaeological Museum, Inv. 1. © Ephorate Of Antiquities of Kavala and the Greek Ministry of Culture and Sports. Photo: EfA A2713 / Philippe Collet).

Also, in the Early Iron Age, monumental votive offerings begin to show up in Greek sanctuaries. Monumental tripod cauldrons made of bronze that only appear in specific sanctuaries (often in high numbers) are associated with commensal meat consumption and large feasts[63]. In the Archaic period, sanctuaries were already well-established centres that were frequented and shaped by different groups of people, especially members of competing elites[64]. F. de Polignac even addressed the Archaic period as the "age of sanctuaries"[65] – and indeed, sanctuaries played a determining role in the creation and expression of individual as well as communal identities, such as *hetaireiai* and *polis* identities[66]. Especially in Ionian contexts, members of competing elite families dedicated statues of idealised men and women, *kouroi* and *korai*, which sometimes carry animals: women carry small animals such as birds and hares and in rarer cases, male *kouroi* carry rams or calfs, most likely sacrificial victims[67]. Statues of *kriophoroi* and *moschophoroi* could reach monumental size such as an unfinished *kouros* at Thasos *(fig. 4)*[68] and until now have only been discovered in sanctuaries, never in funerary contexts[69]. It seems possible that they displayed members of elite families as donators of sacrifices. As sanctuaries and communities grew – and hence the number of participants – meat consumption seems to have become 'institutionalised' in sanctuaries. Both religious specialists and the element of community grew more important[70]. 6th century BCE vase painting is characterised by the emergence of the motifs of the *pompé*[71], a sacrificial procession, and the altar[72]. At the end of the 6th century BCE, the idea of a citizenship, a social elite consisting of equal males sharing the civic responsibilities, became increasingly popular in Athens[73]. Especially in light of the growing tensions with the Persians, the tyranny of single rulers became a threat, an antithesis to the ideal of *isonomia*.

At this point I would like to return to the series of Attic vases displaying the 'ransom of Hector' that I have discussed at the beginning of my paper: I have mentioned that Achilles was represented as a banqueter who

63 Kiderlen 2010.
64 Dulpouy 2006; Crielaard 2009a, esp. 365–366.
65 Polignac 2009.
66 Morgan 1994; Morgan 2003; Mohr 2013; Crielaard 2009a; Crielaard 2016.
67 Meyer / Brüggemann 2007, 128–129.
68 Thasos, Arch Mus. Inv. 1, height: 3.50 m. See Barlou 2014, 24–28 (with a comprehensive bibliography).
69 Meyer / Brüggemann 2007, 128–129.
70 Schmitt Pantel 1992; Schmitt Pantel 1994; Schmitt Pantel 1995; Laxander 2000; see also Crielaard 2009a, esp. 365–366; Rabinowitz 2009.
71 Lehnstaedt 1970; Detienne / Vernant 1979; Berthiaume 1982; van Straten 1988; van Straten 1995; Laxander 2000; Gebauer 2002; True et al. 2004.
72 Ekroth 2009; Ekroth 2013; Crielaard 2009a; Crielaard 2009b; Mohr 2013.
73 I. e. Stein-Hölkeskamp 1989, 224–230; Stein-Hölkeskamp 1999.

usually holds a shallow bowl, a *phiale (fig. 1)*, or a knife *(fig. 2)* in his hand. In fact, it might not be a coincidence that the knife replaces the *phiale* just at the end of the 6th century BCE[74]. The ritual instrument in the hand of the hero might be an archaism for his role as a powerful meat sharing *basileus*. It might also be a reminder of the high social significance of the meal in the crucial episode of the Iliad in which the raging Achilles returns to the 'civilised world', and at the same time hint at the ambivalent character of the hero.

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74 Supra, refs 3–9.

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References of figures

Fig. 1: Photo © Archäologische Sammlung der Universität Zürich, Inv. 4001. Photo: Silvia Hertig. – Fig. 2: Drawing after: Engelmann 1899. – Fig. 3: Photo: © Metropolitan Museum. Drawing (Detail) by V. Sossau. – Fig. 4: Photo: EfA A2713 / Philippe Collet.

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Abstract

Meat-sharing and commensal consumption of meat are central motifs in the Homeric epics. As remains of commensal meals, gifts for the dead or gods and sacrifices, animal bones and sacrificial knives are omnipresent in Early Iron Age Greek sanctuaries. Nevertheless, in Classical Greek archaeology, reflections on the role of meat have traditionally involved the study of numerous later texts and images from the Archaic to the Hellenistic period that were also used for the reconstruction of various rituals and institutions of Early Greek societies. The current paper aims to provide a diachronic overview of the social roles of meat consumption in Early Greek societies, through an investigation of funerary and ritual archaeological contexts in Central Greece as well as a study of contemporaneous texts and images. A series of Archaic vase-paintings displaying the 'ransom of Hector' and Achilles as a 'Lord' over large quantities of meat was selected as a starting point for the discussion. The evidence shows that meat-sharing and commensal consumption were employed as social tools to gain reputation ('social capital') by members of social elites, especially local leaders, throughout the Early Iron Age and the Archaic period. In 6th century BCE Athens, several details such as the emergence of larger sacrificial processions or altars on painted vases indicate a growing importance of larger cult communities. Coming full circle to the display of Achilles in the 'ransom of Hector', the change in some details (the replacement of the phiale by a knife) that can be observed at the end of the 6th century BCE, might reflect a change in the perception of meat-sharers, in contrast to the institutionalised bloody sacrifice in sanctuaries conducted by a cult community of citizens that became a key instrument for the demarcation of the *polis* identity.

Zusammenfassung

Tiere zur Schlachtung. Das Teilen von Fleisch und Opfern im geometrischen und archaischen Griechenland

Das Teilen von Fleisch und der gemeinsame Fleischkonsum sind ein zentrales Motiv der homerischen Epen. Tierknochen und Opfermesser, die Zeugnis ablegen von Mahlzeiten, Totengaben oder Gaben an die Götter und Opfern, sind in den griechischen Heiligtümern der frühen Eisenzeit allgegenwärtig. Dennoch ziehen Studien der klassischen griechischen Archäologie zur Bedeutung des Tieropfers in der Regel spätere Schrift- und Bildquellen aus archaischer bis hellenistischer Zeit zur Rekonstruktion verschiedener Rituale der frühen griechischen Gesellschaften mit heran. Dieser Artikel gibt einen diachronen Überblick über die sozialen Funktionen des Fleischkonsums in den frühen griechischen Gesellschaften, indem sowohl die archäologischen Kontexte zu Begräbnis und Ritual in Zentralgriechenland als auch zeitgenössische Bilder und Texte untersucht werden. Unsere Analyse geht von einer Reihe von Bildern auf archaischen Vasen aus, die die „Auslösung des Hektor" und Achilles als „Gebieter" über große Fleischmengen zeigen. Das Teilen von Fleisch und der gemeinsame Verzehr dienten während der gesamten frühen Eisenzeit und der archaischen Periode dazu, unter den Mitgliedern der sozialen Elite, insbesondere unter den lokalen Führern, Ansehen („Sozialkapital") zu gewinnen. Bestimmte Details auf Tafelgeschirr des 6. Jahrhunderts v. Chr. in Athen zeigen z. B. im Auftreten großer Opferprozessionen oder Altäre die wachsende Bedeutung großer Kultgemeinschaften. Um auf die Darstellung von Achilles in „Hektors Auslösung" zurückzukommen, spiegeln die am Ende des 6. Jahrhunderts v. Chr. zu beobachtenden Veränderungen bestimmter Details (das Ersetzen der Phiale durch ein Messer) möglicherweise einen Wandel in der Sichtweise derer wider, die das Fleisch teilen, im Unterschied zu institutionalisierten Opfern, die von einer Kultgemeinschaft von Bürgern dargebracht werden und die zu einem Schlüsselinstrument für die Identität der Polis werden sollte.

Résumé

Animaux à l'abattage. Partage de la viande et sacrifice dans la Grèce géométrique et archaïque

Le partage de la viande et la consommation commensale de viande sont un motif central des épopées homériques. Les os d'animaux et couteaux sacrificiels, qui témoignent de repas commensaux, de cadeaux offerts aux morts ou aux dieux et de sacrifices, sont omniprésents dans les sanctuaires grecs du début de l'âge du Fer. Cependant, les réflexions sur le rôle joué par la viande impliquaient d'habitude dans l'archéologie classique grecque l'étude de nombreuses illustrations et textes plus récents de l'époque archaïque à hellénistique, utilisés également pour la reconstitution de différents rituels et institutions des premières sociétés grecques. Cet article vise à donner un aperçu diachronique des fonctions sociales de la consommation de viande dans les premières sociétés grecques en examinant les contextes archéologiques funéraires et rituels de la Grèce centrale et à travers l'étude d'illustrations et de textes contemporains. Notre analyse prend pour point de départ une série d'images sur des vases archaïques illustrant la « rançon d'Hector » et Achille en tant que « Maître » de grandes quantités de viande. Les preuves montrent que le partage de la viande et la consommation commensale servaient à gagner une réputation (« capital social ») auprès des membres de l'élite sociale, particulièrement auprès des chefs locaux, à travers tout le début de l'âge du Fer et la période archaïque. Certains détails sur la vaisselle du 6e siècle av. J.-C. à Athènes, tels que l'apparition de grandes processions sacrificielles ou d'autels, révèlent l'importance croissante de grandes communautés cultuelles. Pour revenir à la représentation d'Achille dans la « rançon d'Hector », des changements dans certains détails (le remplacement de la phiale par un couteau) que l'on peut observer à la fin du 6e siècle av. J.-C. reflètent éventuellement un changement de regard sur ceux qui partagent la viande, contrairement au sacrifice sanglant institutionnalisé offert par une communauté cultuelle de citoyens dans les sanctuaires, qui deviendra un instrument clé pour définir l'identité de la *polis*.

In the belly of the earth: bones and the closing of sacred space in central Italy

by *Angela Trentacoste*

Keywords

banquets, feasting, Etruscan, Roman, central Italy, animals, ritual, rubbish

Schlüsselwörter

Bankette, Festessen, etruskisch, römisch, Zentralitalien, Tiere, Ritual, Abfall

Mots-clés

banquets, festin, Étrusque, Romain, Italie centrale, animaux, déchets, rituels

Introduction

From its earliest days, the history of Rome was entangled with that of its Etruscan neighbours. Although these two peoples spoke different languages and had distinct material cultures, their close proximity and interconnected development yielded many common practices and tastes[1]. This sense of shared history extended back to the beginnings of Rome itself, when Romulus summoned Tuscan specialists to assist with the rituals required for the foundation of the city[2]. An Etruscan origin was ascribed to enduring symbols of power: the sceptre, throne, *fasces* (bound bundle of wooden rods and an axe), and purple-edged *toga*[3]. Commonalities were also shared between the object and architectural styles of the two cultures[4], and Rome absorbed Etruscan religious practices, particularly those related to divination and augury[5]. From Roman sources we know of the *Etrusca disciplina*[6], texts on Etruscan religious doctrine that covered a variety of topics on rituals, the interpretation of signs, and the revelations of prophets. Even as the distinctiveness of Etruscan culture faded with conquest and incorporation into the Roman state, Etruscan religious traditions continued to influence Rome, who carried these divinatory practices throughout the Western Empire[7].

Excavation of central Italian archaeological sites has revealed a further practice shared on both sides of the River Tiber: the deliberate closure of significant subterranean structures with fills rich in animal bones[8]. Excavation of the *area sacra* of the Etruscan port town of Pyrgi brought to light several wells, all purposefully filled with a variety of archaeological materials, including a wide range of faunal remains[9]. Deliberately closed

1 See Nijboer 2015; Torelli 2017.
2 Plutarch, Life of Romulus 11.1–4. Tradition also held that Rome's 5th and 7th kings were Etruscan. See Forsythe 2005.
3 Silius Italicus, *Punica* 8, 483–494.
4 Potts 2015; Winter 2017.
5 Beard et al. 1998, 60; 101–102.
6 On Etruscan religion, including the *Etrusca disciplina*, see Jannot 2005; for a list of sources referring to these texts see De Grummond 2006.
7 Briquel 2004.
8 See Rask 2014.
9 For two wells in front of temple A: Caloi / Palombo 1980; Caloi / Palombo 1988/89; Colonna 1988/89. For well in area C, adjacent to temple B: Cardini 1970; Colonna 1970.

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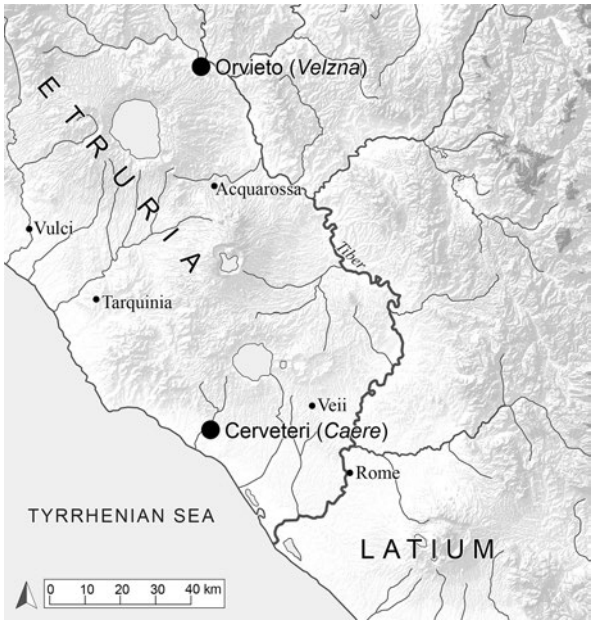
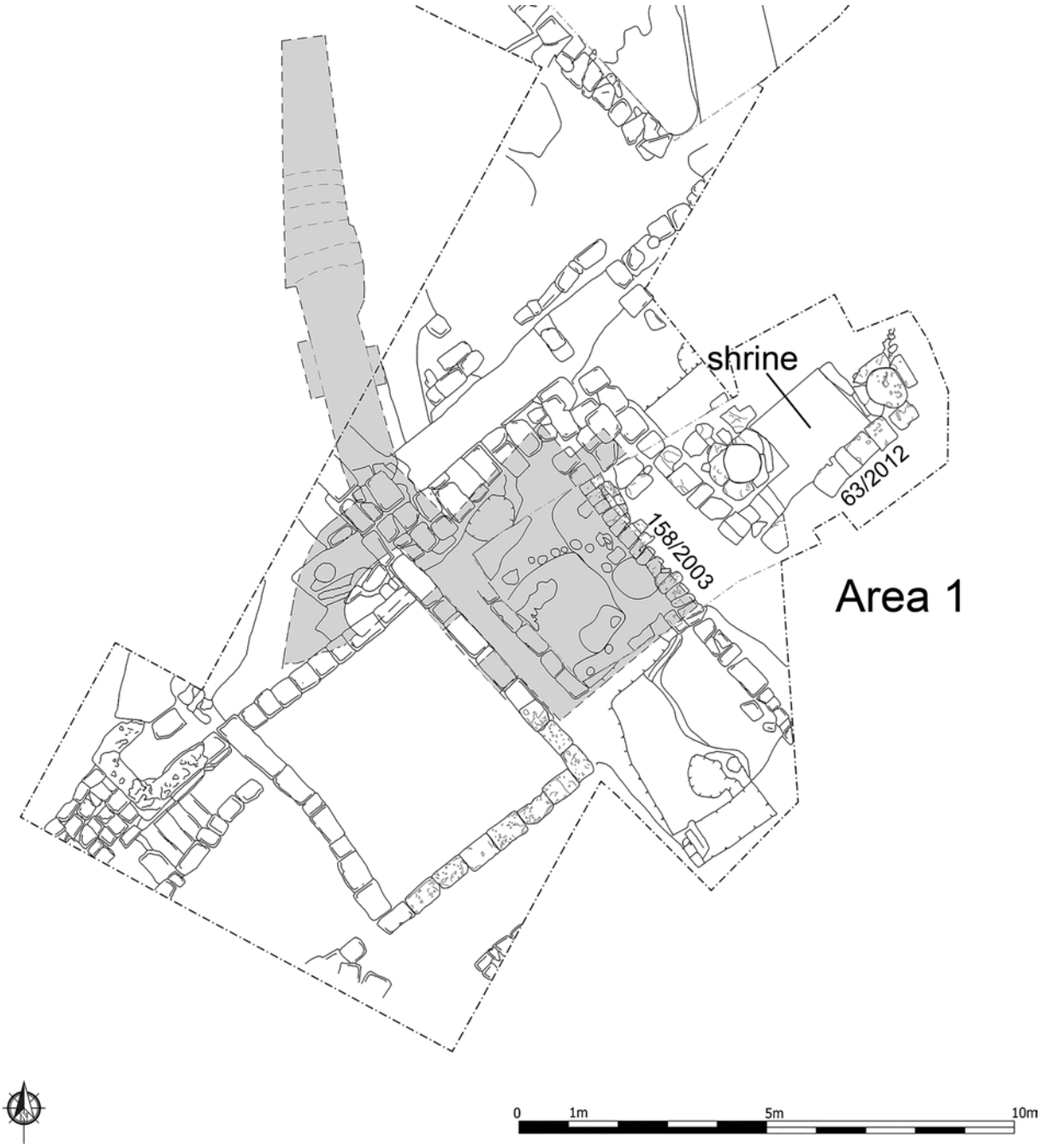
wells with bone-rich fills are also found at Veii[10] and Cetamura[11]; the later of these produced evidence of a long history of ritual deposits, with possible early links to Mithraic cult activity. Similarly, the fill of a subterranean tunnel at Centocelle, dated to approximately the 3rd to 4th centuries BC, has been associated with cultic activity on the basis of the conservation and character of the animal remains[12]. Of course, not all fills of this sort necessarily result from ritual activity[13], and the tradition of using bone-rich fills in the closure of underground structures accounts for just one way in which animals were used in ancient cult activity in central Italy[14]. Nevertheless, bone-rich fills were repeatedly deposited in subterranean structures throughout Etruscan and Republican central Italy, and the origins of these practices ran deep. Caves throughout Italy have produced animal bone deposits with a symbolic and seemingly chthonic character[15], suggesting that this tradition dates back at least as far as the Late Bronze Age.

This paper examines animal remains from two subterranean structures, both purposefully closed with bone-rich fills during the 5th century BC *(fig. 1)*. The first assemblage was recovered from a small semi-subterranean shrine in Cerveteri, Roman *Caere*, known to the Etruscans as *Cisra*[16]. The second collection of material derives from a large dis-used quarry in Etruscan *Velzna*, modern Orvieto. Discussion focuses on the fills of subterranean 'structures' (e. g. wells, cisterns, tunnels, quarries) independently from other types of underground man-made features (pits, tombs), because the former typically had a life prior to its use as a place of disposal. While pits can be sized to house a particular body of material (e. g. foundation deposit or votive offering), in the case of subterranean structures, the fill must fit an existing space. This logistical aspect of closing an extant structure, and the types of activities that produced such a fill, warrant consideration separate from that of other types of 'ritual' deposits, although there are, of course, many similarities shared between the these types of contexts. The bone-rich fills discussed here are one element that was shared in Etruscan and Roman tradition, and a better understanding of Etruscan practice and how it did – or did not – influence Roman habits can help shed new light on the development of Roman ritual and what makes it specifically, 'Roman'[17].



1 Map of central Italy (Adapted from Ancient World Mapping Center map of 'Rome and Environs').

10 Cucinotta et al. 2010.
11 Corbino / Fonzo 2017.
12 De Grossi Mazzorin 2004.
13 E. g. Clark 1989; Clark 1993 appears more related to industrial debris.
14 Other examples include use of animals in funerary contexts (e. g. Minniti 2012), votive deposits (e. g. Bagnasco Gianni 2005; De Grossi Mazzorin / Mascione 2010), and buried accumulations of material in sanctuaries (e. g. Wilkens 2008). See Rask 2014 and Bouma 1996, 215–248 for useful summaries.
15 E. g. Sorgenti della Nova: De Grossi Mazzorin / Minniti 2002. See also Wilkens 1995; Silvestri et al. 2017.
16 For the Etruscan name of the city see Wallace 2016.
17 Although the significance of a practice will change with its context, e. g. the perceived 'foreignness' of Etruscan divination may have been an important part of its power and appeal; Beard et al. 1998, 20.



2 Map of *Caere* excavations (Area 1) showing the location of the *hypogeum* of Clepsina (shaded) and semi-subterranean shrine (Image courtesy of M. Di Lieto, *Caere* Project).

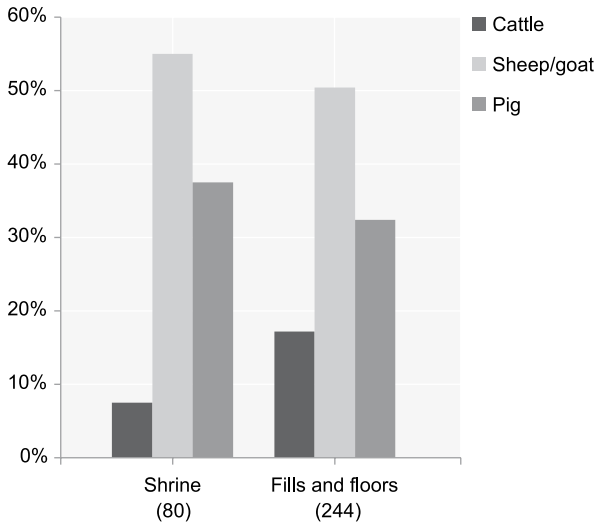
Caere – a semi-subterranean shrine

Background

Cerveteri (Roman *Caere*) was one of the largest and most powerful cities of Archaic central Italy[18]. Today, it is best known for its monumental necropolis, and the materials recovered from these tombs demonstrate the wealth of the local aristocracy and skill of Etruscan artisans, as well as rich trade connections with the Eastern Mediterranean. The city centre housed substantial civic and religious buildings that further attest to *Caere*'s impor-

18 For a general introduction see Troccoli 2006; Torelli 2016.

tance[19]. Queen's University has been conducting excavations in the urban area of Etruscan *Caere* since 2012[20]. The project is exploring an area within the city around the *hypogeum* of Clepsina *(fig. 2)*, a subterranean monument used for the celebration of the *Rosalia* festival during the Imperial period. As part of the project, excavations explored a semi-subterranean structure, about 1.7 m by 1.5 m in dimension and approximately 3 m in depth, which was interpreted as small shrine on the basis of the architecture and associated finds[21]. The structure was entered by a rock-cut stairway that descended to a space containing three niches: a small niche in the southern wall, and two larger niches, c. 1.3 m in height, which began at the floor level in the northeast and northwest walls. A cut in the floor of the northwestern recess was capped with a block. These features and the underground location of the shrine suggest a role in chthonic ritual. This structure was intentionally closed with a fill rich in ceramic fragments (Greek pottery, coarse ware ceramics, architectural terracottas) and animal remains, the highest levels of which were partly destroyed by a modern pipe trench.



3 Livestock representation in Etruscan contexts at *Caere*. Sample size in parentheses.

Faunal remains

Animal remains from the 2012–2014 excavations, including those from the fill of the semi-subterranean shrine (US 97), were published in a recent report[22]. More recent zooarchaeological work expanded the number of identified specimens from Etruscan contexts (excluding the shrine) and has refined some identifications. The data presented here reflect the current state of research, which should be considered preliminary as the work is on-going. Animal remains were recorded using a system of diagnostic zones[23]; results presented below only include specimens with zones. Full study of the avian fauna, led by Chiara Corbino, is in progress.

Although the quantity of faunal material from the fill of the shrine was fairly modest[24], this assemblage differed from other Etruscan contexts from the excavations in several aspects. Firstly, the shrine yielded a larger range of avian taxa than found in other Etruscan layers *(tab. 1)*. Bird remains from the shrine included chicken (*Gallus gallus*), goose (*Anser anser*), wood pigeon (*Columba palumbus*), coot (*Fulica atra*), and – interestingly – barn owl (*Tyto alba*). Cut marks on goose and wood pigeon bones suggest these birds were consumed, or at least butchered. Compared to floors and construction fills, the shrine contained a similar proportion of livestock remains *(fig. 3)*, but with a relatively higher percentage of pigs and lower proportion of cattle. Livestock frequencies are comparable to other central Italian sites of the period[25]. Medium mammal rib fragments were more abundant in the fill than in other contexts, and many of these were near complete. None of the animal remains from the shrine were gnawed, suggesting a quick burial. The preservation of complete ribs and joining pieces of an unfused sheep pelvis indicate that at least some of the fill was in its primary place of deposition. Butchery modifications on mammal bones were rare: only one cattle radius and one sheep/goat femur had cut marks. In-depth assessment of patterns in body part distribution *(tab. 2)* was precluded by the modest quantity of material, especially for cattle; however, the pelvis and femur were the most abundant element from sheep/goats. The distribution of elements from pig was more diverse. No clear patterning was visible in the distribution of right or left sided elements.

19 Fiorini / De Grummond 2014; Bellelli 2016.
20 Colivicchi et al. 2016.
21 Colivicchi et al. 2016, 376–381.
22 Colivicchi et al. 2016.
23 For full explanation see Colivicchi et al. 2016.
24 Other faunal material from the highest layers of the fill may have been lost due to a modern pipe trench which cut the upper part of the structure; Colivicchi et al. 2016, 376. If animal remains were found on the first few steps of the shrine by the University of Perugia excavations, these were also unavailable; Torelli / Fiorini 2008.
25 See Trentacoste 2016. Northern Etruscan cities typically have a higher proportion of pig, potentially as a result of their different environmental or economic context.

	Shrine (US 97)		Floors and fills
	NISP	MNI	NISP
Cattle	6	1	42
Sheep/goat	37	2	104
Sheep	6		14
Goat	1		5
Pig	30	3	79
Equid			3
Dog	2	1	12
Fox	3	1	
Dog/fox	2		
Hare	1	1	
Grouper	1	1	
Tortoise			1
Fish			2
Human			1
Total	89		263

Tab. 1 Number of identified specimens from Etruscan deposits at *Caere*. Excludes bird remains still under study.

	Cattle		Sheep/goat		Pig	
	MNE	MAU	MNE	MAU	MNE	MAU
Lower dp4			1	0.5	1	0.5
Lower M3			3	1.5		
Atlas			1	1	1	1
Axis	1	1				
Scapula			3	1.5		
Humerus					1	0.5
Radius	1	0.5	3	1.5	1	0.5
Ulna			1	0.5	3	1.5
Metacarpal (MC III / MC IV)			1	0.5	(2 / 3)	(1 / 1.5)
Pelvis			4	2	1	0.5
Femur			4	2	2	1
Tibia			2	1	5	2.5
Calcaneum			3	1.5	1	0.5
Astragalus					1	0.5
Metatarsal (MT III / MT IV)					(2 / 3)	(1 / 1.5)
Phalanx I	2	0.25	4	0.5		
Phalanx II	1	0.125				
Metapodial					1	0.5
Horn core			1	0.5		

Tab. 2 Body part distribution in the shrine at *Caere*. Minimum number of elements (MNE) and Minimum animal units (MAU) follows Binford (1984).

Orvieto – Cavità 254

Background

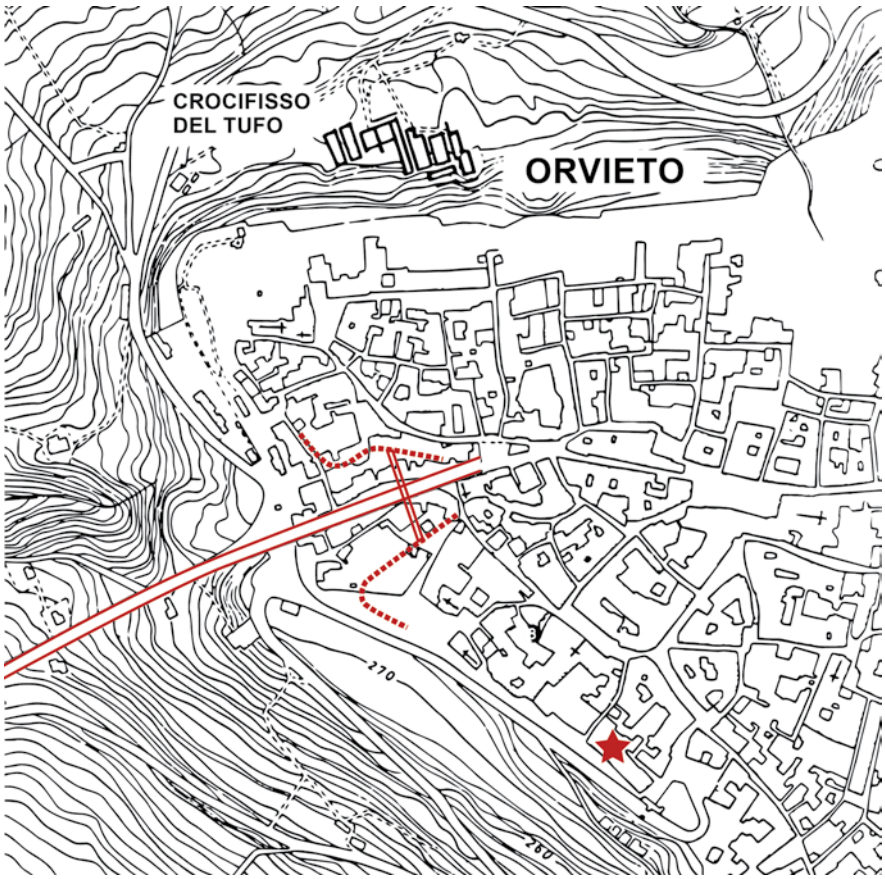
Modern Orvieto occupies the Etruscan city of *Velzna*, a wealthy and powerful centre believed to be the site of the federal sanctuary of the *Fanum Voltumnae*[26]. The city is located on a prominent butte of volcanic tuff, which gives it a commanding position over the surrounding landscape *(fig. 4)*. The Etruscan necropolises at the foot of the plateau are well documented[27], but the ancient city that occupied the summit is obscured by the current town[28]. Information on the Etruscan urban area is derived primarily from investigation of subterranean structures and tunnels cut into the tuff plateau[29]. Cavità 254 is one of these rock-cut spaces beneath the modern city *(fig. 5)*, which was located on the edge of the Etruscan urban area. Excavation of this underground structure began in 2012 and has since revealed a large, roughly square cavern (c. 9 m by 9 m at the current level of excavation)[30]. Recent excavation has uncovered large moulded blocks, still *in situ*, which suggest that the space initially functioned as a quarry. This quarry was deliberately filled in a short space of time the end of the 5th century BC, possibly in a single act. The fill was composed of series of dumps; these dumps are composed of large amounts of Etruscan material culture, believed to derive from the restructuring of the urban area: a few architectural terracottas and huge quantities of tile and Etruscan ceramics (common wares, bucchero) – many of which bear inscriptions[31] – as well as black and red figure Greek pottery. The dumps differed significantly in their composition; some were rich in pottery and organic remains, while others were dominated by building materials[32]. Some of these dumps contained large quantities of animal remains. Over 4500 remains have thus far been identified, and zooarchaeological work is on-going as excavation progresses. The faunal remains were recorded using a system of diagnostic zones, following the methodology used at *Caere* with a few exceptions[33]. Again, only specimens containing zones were included in the analyses below. The preliminary results presented here build on those of a previously published short summary[34]. Full study of the avian fauna, led by Chiara Corbino, is in progress.

Faunal Remains

One of the most striking aspects of the animal remains recovered from Cavità 254 was their excellent state of preservation. The surface preservation of the majority of the remains is extremely good. This quality of preservation suggests the material was deposited more or less directly into the Cavità, a supposition further supported by the recovery of articulating bones, uncovered still in anatomical connection. Most of the articulating remains are lower foot bones from sheep/goats and, interestingly, hares; articulating medium and large mammal vertebrae were also recovered. Alongside the well preserved remains is a small proportion of material (c. 9 % of the post-cranial assemblage) with lower quality surface preservation. Many of these remains are also darker in colour. Considering the presence in the fills of residual pottery from earlier periods, these darker and more abraded bones may also be re-contextualised from earlier deposits on the plateau.

The quantity of faunal remains varied between contexts, with the dumping events represented by US 37 and 40 producing the greatest quantity of mammal remains *(tab. 3)*. Overall the mammal assemblage is dominated by the remains of pigs (48 %) and sheep/goat (44 %), with relatively few elements from cattle (4 %). These proportions are similar to those of other Archaic sites in central Italy[35], although cattle are relatively underrepresented. Canids (2 %), and other mammals, including cat (*Felis* sp.), and wild taxa (2 %) are less abundant. The frequency of domestic livestock varied between contexts, with a higher proportion of pig remains in deeper levels *(fig. 6)*. Bird bones are still under study, but analysis of those from US 37 and 40, undertaken with Chiara Corbino, offers a preliminary look at the exploitation of avian

26 Stopponi 2013.
27 Feruglio 2003; Bizzarri 2016; Binaco / Bizzarri 2018.
28 Furthermore, the medieval organisation of the current city does not follow the preceding Etruscan plan; Bizzarri 2002; Bizzarri 2013.
29 Bizzarri 2013.
30 Bizzarri / Binaco 2015; George 2015; George / Bizzarri 2015; George et al. 2017.
31 George 2015; Especially interesting are those inscribed *CAVI*, perhaps an abbreviation of *cava(tha)*, a female deity associated with Persephone and the underworld. For discussion of Etruscan chthonic deities, see De Grummond 2004.
32 For a description of the stratigraphy see George / Bizzarri 2015.
33 See Colivicchi et al. 2016. Long limb bones (humerus, radius, femur, tibia) have 3 (proximal epiphysis, diaphysis, distal epiphysis) rather than 4 zones. The cranium has 3 zones (zygomaticus, frontal – orbital part, occipital condyle).
34 George et al. 2017.
35 See Trentacoste 2016.



4 Plan of the western plateau of Orvieto with the location of Cavità 254 (star) and the ancient monumental entrance to the city. The double line corresponds to the so-called Muro di Via della Cava terracing wall (Adapted from Feruglio 1998).

taxa. Over one-hundred bird remains were recovered from this deposit; most of these were from chickens, followed by wood pigeon (*Columba palumbus*) with a smaller number of bones identified goose (*Anser anser*), duck (*Anas platyrhincos*), western jackdaw (*Corvus monedula*), and common starling (*Sturnus vulgaris*). The presence of owls is especially interesting: little owl (*Athene noctua*) and tawny owl (*Strix aluco*).

Context (US)	32	33	34	35	36	37	38	38/45	39	40	44	45	Total
Cattle	8	2	2	3	18	94	11	1		58		6	203
Sheep/goat	61	24	29	31	168	577	135	20	6	509		90	1650
Sheep	9	3	3	9	37	123	26	6	1	66		11	294
Goat	1		1			16	7			18			43
Pig	65	26	26	18	191	758	170	38	2	749	1	150	2194
Dog	1		2	2	7	24	7			27		2	72
Canid						2				1			3
Dog/fox				1	2	2		2		2		2	11
Cat						7	1			3			11
Hare	1		1	1	4	16	8			19		18	68
Badger										1			1
Roe Deer						5	1			4			10
Red deer					1								1
Total	146	55	64	65	428	1624	366	67	9	1457	1	279	4560

Tab. 3 Number of identified specimens from Orvieto, Cavità 254. Excludes bird remains still under study.

5 Interior of Cavità 254 in 2018. Abundant pottery and animal bones are visible in the mounded fill (Photo courtesy of Alistair Potts).

Cattle teeth were predominantly from adult animals, but post-cranial remains included a significant proportion of unfused bones *(tab. 4)*. Mandible wear stages for sheep/goat demonstrated a culling pattern spread across various age groups, with one peak in the latter first year of life and a second peak in between approximately the third and sixth years *(fig. 7)*. Although a focus on the slaughter of juvenile animals can be an indication of cultic activity, similar mortality patterns are present in non-ritual, habitation-related assemblage from Forcello and Padova[36]. Pig mandible wear stages *(fig. 8)* suggested a degree of seasonality in slaughter strategy. Several peaks were apparent: the first at a very young age (stage 2) and three subsequent peaks around stages 8, 18, and 26. In other contexts, similar peaks in mandible wear stages have been interpreted as seasonal slaughter at mid-winter[37]. Assuming the fill of Cavità 254 represents a single event, the variability in this patterning could be explained by local variation in breeding season, e. g. if births were spread over several months, and/or if sows farrowed more than once annually. Further variability might be expected if animals were drawn from a catchment area beyond Orvieto itself. Investigation of strontium isotopes from sheep tooth enamel has demonstrated that sheep from at least three 'iso-zones' were deposited in Cavità 254[38]; although the precise locations where these sheep were raised are unclear, isotopic analyses suggest several places of origin. The well separated peaks in the mandible wear stages of young pigs may reflect locally bred animals, with greater variability in the ages of older pigs introduced by the movement of animals from a larger number of husbandry locations and thus systems.

	Year fused	Fused	Unfused
Scapula	1	4	2
Pelvis	1	3	0
Radius – proximal	1 to 2	1	0
Phalanx I	1 to 2	20	5
Phalanx II	1 to 2	14	6
Humerus – distal	1 to 2	1	0
Metapodial – distal	2 to 3	9	6
Tibia – distal	2 to 3	2	1
Humerus – proximal	3+	0	0
Femur – proximal	3+	5	0
Tibia – proximal	3+	2	0
Calcaneum	3+	4	2

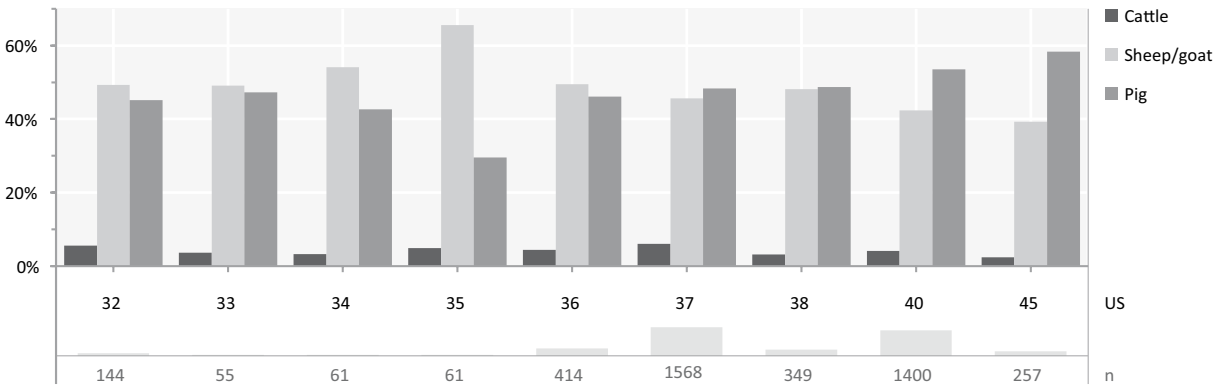
Tab. 4 Cattle bone fusion for Orvieto, Cavità 254. Unfused epiphyses excluded. Fusion ages follow Silver (1969).

Investigation of body part distribution demonstrated that small elements were underrepresented across all taxa considered, probably due to recovery through hand collection. These analyses also revealed an underrepresentation of the sheep/goat hindlimb *(tab. 5; fig. 9)*. Considering the age structure of the sheep/goat assemblage, density-mediated bias probably impacted the survival and recovery of late-fusing bones (e. g. femur, proximal tibia); however, the underrepresentation of the distal tibia and metatarsal cannot be similarly explained. Furthermore, there appears to have been a preferential selection of right femora *(fig. 10)*. Examination of pig body part distribution *(tab. 5; fig. 11)* again revealed an underrepresentation of the hindlimb, though not as pronounced as in sheep and goats. Interestingly, in pigs, the astragalus was only half as abundant as the calcaneum and tibia, and pig knucklebones also demonstrated a side-bias not visible in other pig elements *(fig. 12)*. Special treatment of astragali was further evidenced by recovery of seven

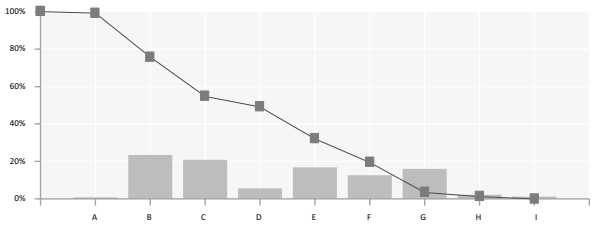
36 Trentacoste 2016. Although these sites are in northern rather than central Italy.

37 Wright et al. 2014.

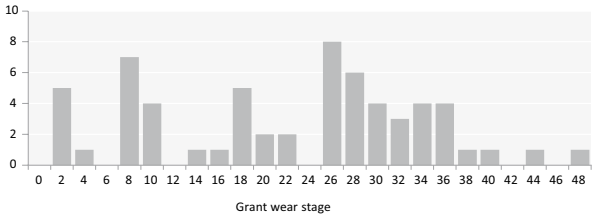
38 Trentacoste et al. 2020.



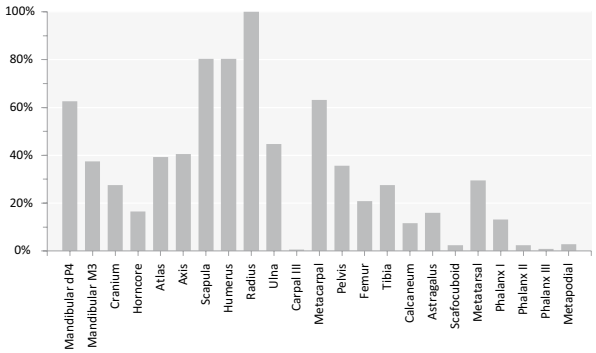
6 Livestock representation in Cavità 254 by context. Only includes contexts with livestock NISP > 50. n = sample size.



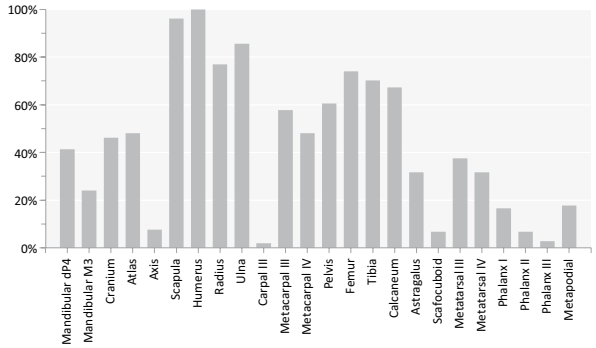
7 Mandible wear stages for sheep/goat from Cavità 254. n = 115. Wear stages follow Payne (1973).



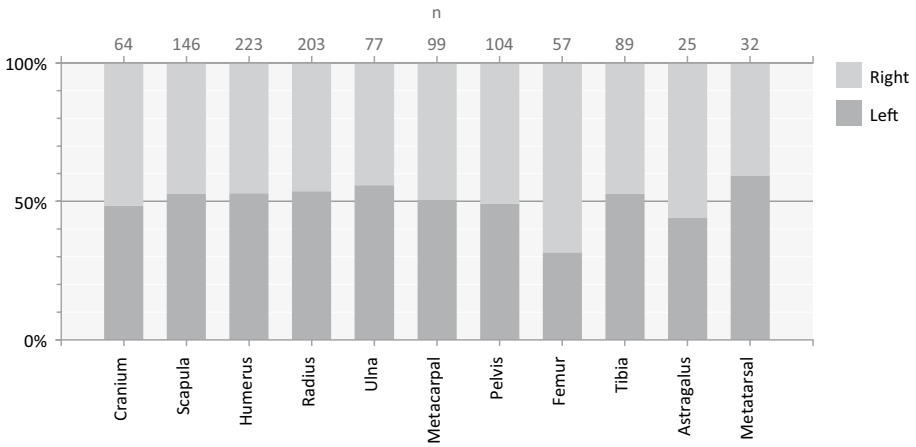
8 Mandible wear stages for pigs from Cavità 254. n = 61. Wear stages follow Grant (1982).



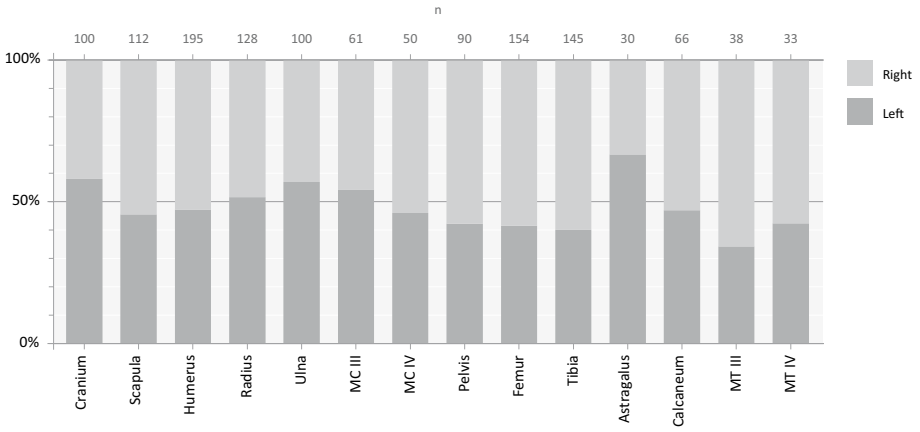
9 Skeletal element abundance (% MAU) for sheep/goat remains from Cavità 254. Expressed as a percentage of max MAU (radius = 81.5). See *table 5* for MAU values.



11 Skeletal element abundance (% MAU) for pig remains from Cavità 254. Expressed as a percentage of max MAU (humerus = 52). See *table 5* for MAU values.



10 Left/right distribution of sheep/goat remains from Cavità 254. Only includes elements with NISP > 20. n = sample size.



12 Left/right distribution of pig remains from Cavità 254. Only includes elements with NISP > 20. n = sample size.

	Cattle		Sheep/goat		Pig	
	MNE	**MAU**	**MNE**	**MAU**	**MNE**	**MAU**
Lower dP4	2	1	102	51	43	21.5
Lower M3	5	2.5	61	30.5	25	12.5
Cranium	4	2	45	22.5	48	24
Horncore	3	1.5	27	13.5		
Atlas	1	1	32	32	25	25
Axis			33	33	4	4
Scapula	8	4	131	65.5	100	50
Humerus	3	1.5	131	65.5	104	52
Radius			163	81.5	80	40
Ulna	2	1	73	36.5	89	44.5
3rd Carpal	4	2	1	0.5	2	1
Metacarpal (MC III / MC IV)	15	7.5	103	51.5	(60 / 50)	(30 / 25)
Pelvis	4	2	58	29	63	31.5
Fermur	3	1.5	34	17	77	38.5
Tibia	3	1.5	45	22.5	73	36.5
Calcaneum	6	3	19	9.5	70	35
Astragalus	2	1	26	13	33	16.5
Scafocuboid	1	0.5	4	2	7	3.5
Metatarsal (MT III / MT IV)	7	3.5	48	24	(39 / 33)	(19.5 / 16.5)
Phalanx I	24	3	86	10.75	69	8.625
Phalanx II	21	2.625	16	2	28	3.5
Phalanx III	11	1.375	6	0.75	12	1.5
Metapodial	1	0.25	9	2.25	37	9.25

Tab. 5 Skeletal element distribution from Orvieto, Cavità 254. Minimum number of elements (MNE) and Minimum animal units (MAU) follow Binford (1984).

modified knucklebones (three pig, two sheep, two sheep/goat), which had their medial and/or lateral sides smoothed or cut away (e. g. *fig. 13*). One of the modified pig astragali also had a small hole drilled into the medial side. These modifications suggest use as gaming pieces, or more probably a role in divination[39]. When the distribution of cattle body parts was considered, metacarpals appeared somewhat more common than other elements *(tab. 4)*. There was no clear indication of a left/right side bias in the selection of cattle limbs. Modifications on cattle metapodials and horncores suggest bone and horn working occurred on the summit of the plateau. Cattle may have been raised in the surrounding lowlands, where there was easier access to water, graze, and agricultural

39 De Grossi Mazzorin / Minniti 2013.

fields, with select cattle parts brought to the top of the plateau, e. g. for consumption or use in craft activities, after the animals were butchered.

Domestic livestock remains accounted for the vast majority of the fill, but other taxa presented interesting trends. Unusually for Etruscan sites, hare was the most abundant wild taxon[40]; typically red deer and wild boar are more common[41]. Preliminarily results from the avian assemblage are also interesting for their taxonomic diversity, especially for the presence of rare birds like little owl (*Athene noctua*, *Strix aluco*) and starling (*Sturnus vulgaris*). About one third of the 63 canid post-cranial bones had butchery modifications, mostly cut marks. Dogs played an important role in Etruscan and Roman ritual practice, especially those associated with rites of passage[42], and the modification on bones from Orvieto suggest that dogs were dismembered and perhaps also filleted and consumed.

13 Examples of modified astragali from Cavità 254.

Discussion

The assemblages from the shrine at *Caere* and Cavità 254 share features that link them to the chthonic realm and a long tradition of purposeful deposition of animal remains. Both are subterranean structures, deliberately closed in short periods of time with fills rich in animal bones, ceramics and architectural elements, including a significant quantity of high-status materials. Some aspects of these contexts are more strongly associated with the cultic or symbolic sphere, such as the niches and conduit at *Caere* and certain pieces of inscribed pottery at Orvieto. However, their materials are not exclusive to cultic or even elite domain. Courseware pottery was common in both cases, and even the animal bone assemblages partly resemble domestic debris. Neither assemblage contained an elevated or unusually high percentage of a particular taxon, body part, or age group, which can be a defining feature of cultic assemblages in central Italy. Instead, both collections of material are dominated by common domestic livestock, although they are distinguished from habitation assemblages in more subtle ways: preservation of the material, differential treatment of fore versus hind limbs, side bias in choice elements, and exploitation of a range of taxa not typically considered as food, most notably some wild birds. Depending on their context, modified astragali and butchered dog bones can also be suggestive of the use of animals for religious or symbolic purposes[43]. Thus, the assemblages present evidence for the consumption and special treatment of animals, although this conclusion cannot be extended to every specimen in the fills. What then can we conclude about the 'ritual' treatment of Etruscan animals, other than that there was a tendency to include faunal remains in the fill when closing a significant subterranean space?

Faunal remains, feasts, and the re-making of urban space

The deposition of meat-bearing bones, quickly buried in association with cooking ceramics and banqueting vessels immediately calls to mind a feast. There are a myri-

40 A deposit associated with feasting at the *andreion* in Praisos, Crete also contained a significant proportion of hare remains: Madgwick 2018.

41 De Grossi Mazzorin / Minniti 2009; Trentacoste 2016.

42 See Smith 1996; De Grossi Mazzorin / Minniti 2006; Wilkens 2006.

43 For example, when associated with temples, cultic contexts, or tombs. For astragali see De Grossi Mazzorin / Minniti 2013; for dog butchery in non-ritual contexts see Curci / Sertori 2019; for ritual use of dogs see Smith 1996, De Grossi Mazzorin / Minniti 2006, and Wilkens 2006.

ad of ways to define and theorise feasting[44], although nearly all include sharing of food in a way that is special or at least non-mundane. Although definitions of feasting can also encompass small events, the size of the deposit from Orvieto suggests a visible and large-scale activity. Although the zooarchaeological recognition of feasting is difficult[45], following the criteria proposed by Twiss[46], the material from Cavità 254 has several features that would permit its identification as a special consumption event, if not a feast:

(1) consumption of large quantities of food,
(2) consumption of symbolically important foods (dogs?),
(3) special locations and public ritual (use of a large subterranean space, quarried for a monumental – probably civic – building project),
(4) displays of wealth and/or status (banqueting ceramics, minimally processed bones, large quantities of meat) and
(5) special serving vessels.

Thus, while no one feature warrants definition of the material as a feasting deposit, when the materials and their context are considered as a whole, there is good evidence for large, possibly ceremonial, consumption event, probably accompanied by distribution of meat, as represented by the underrepresented sheep/goat hindquarters[47]. Furthermore, sealing of the debris into the Cavità would warrant its inclusion in a sixth criterion: commemoration, as the process of depositing the consumption debris into a monumental subterranean space memorialises the event and forever closes the structure. Considering that the animal remains the in Cavità are mixed with debris from a major restructuring of the urban area, the memorialised occasion was probably the urban re-development and closing of the associated quarry.

Turning to the bone assemblage from *Caere*, the deposit shares some key elements with that of Orvieto. Again, we have a fill containing high status materials and serving ceramics alongside cook wares and minimally processed animal bones. However, the size of the shrine's faunal assemblage is much smaller than that of the Cavità, in line with the physical size of the space. The presence of bisected vertebrae and well preserved ribs suggests the deposition of meaty parts of animals, but it is unclear whether these represent food offerings or food debris. The limited quantity of material makes it difficult to identify preferences for certain sides or skeletal parts. Although we cannot necessarily assume the material deposited into shrine represents the sum of all activity related to the structure's closure, the quantity of material suggests a relatively small-scale food offering to the divinities of the shrine, or perhaps the remains of a meal, represented by the well preserved ribs, vertebrae, and limb bones[48]. Like at Orvieto, the structure's decommissioning occurred during a period of urban re-development in the 5th century BC, when a quarry was filled, existing structures demolished, and new temple built in the adjacent Vigna Parrocchiale[49]. While the size of the shrine suggests a private, restricted ritual practice within the space itself[50], its closure may have been one part of a more visible, public event, with only a portion of the associated activity deposited in the shrine[51].

Banqueting was a primary mode of aristocratic self-representation in Archaic Italy – an activity which served a central role in the construction of status and the demonstration of material wealth and cultural affiliations[52]. Scenes of banqueting are prominent in Etruscan architecture and funerary art: from the painted tombs of Tarquinia, to the terracotta friezes of Murlo and Acquarossa, and reclining diners on Etruscan sarcophagi, communal drinking and dining was a central theme in the iconography of Etruria[53]. Finds of bronze and ceramic vessels, alongside cauldrons, spits, and other dining equipment, reinforce banqueting's important social role across the religious, domestic, and funerary spheres, and illustrate the economic investment made in the objects required for entertaining in style[54]. However, the food and drink consumed at such banquets are more difficult to detect in the archaeological record. Organic remains recovered from tombs and foundation deposits provide evidence of ritual meals and food offerings[55], but – as at *Caere* – their quantity points to consumption on a relatively modest scale. Outside the

44 See esp. Rowley-Conwy 2018 and references therein. Also Dietler / Hayden 2001; Jones 2007; Twiss 2008; Hayden 2014.
45 Kansa / Campbell 2004; Rowley-Conwy 2018.
46 Twiss 2008.
47 Especially those from the left side. For the use of specific limbs or the left/right sides of animals in Classical cults see MacKinnon 2010; Ekroth 2008; Ekroth 2013.
48 Similar elements have been found in funerary contexts. See Maini / Curci 2013.
49 Colivicchi et al. 2016, esp. 437.
50 Interpretation of the original standing architecture of the shrine is obscured by destruction of its upper part, but the above-ground component was probably modest rather than monumental. For religious architecture in Etruria see Potts 2015.
51 Modified astragali and butchered dog bones have been recovered from other contexts at *Caere*.
52 D'Arms 1984; Zaccaria Ruggiu 2003; Colivicchi 2017; Kistler 2017.
53 Marinis 1961; Locatelli 2008; Rathje 2013.
54 Pieraccini 2000; Zaccaria Ruggiu 2003; Colivicchi 2017; Kistler 2017.
55 E. g. Bagnasco Gianni 2005; Minniti 2012; Maini / Curci 2013.
56 Dionysius of Halicarnassus, Roman Antiquites 4:49; Cornell 1995, 294–295.

bone-rich fills discussed above, large organic deposits of food debris produced by or deposited in unique events, rather than through long-term patterns of discard, are uncommon. This situation may result from the scale of banqueting in general, for example if banquets typically involved a limited, rather than large, number of people (e. g. religious officials at temples, families and officiants at tomb); alternatively taphonomic factors may have a role: if consumption focused on wine rather than dining, or if the remains of such meals were typically disposed of like common debris or outside the settlement. If banquets were generally exclusive occasions, feasting in Etruscan Orvieto may have been exceptional even within a banqueting society, potentially linked to the regional religious prominence of the site and distinct modes of dining (and negotiating social relationships) in the seat of a major federal sanctuary. Parallels may be found south of the River Tiber, in the *Feriae Latinae* held in spring on the Alban Mount[56]. This ancient festival re-affirmed cooperation amongst Latin peoples, and cities sent representatives and food offerings, as well as animals to the festivities. These livestock were slaughtered and consumed as part of a communal meal, and meat offerings distributed.

A palimpsest of activity

While questions remain about the nature of the events that created these fills, the deposits provide a clear sense that subterranean spaces were the proper place to lay to rest certain groups of material. This practice was not exclusive to *Caere* and Orvieto, and the two examples presented here form part of a wider practice in central Italy of using bone-rich fills to close subterranean structures[57]. Debris produced by a wide variety of activities apparently warranted this form of burial, ranging from food offerings and food remains, to assemblages dominated by cranial elements that resemble trophy accumulations[58]. Ritual deposits from the Etruscan sanctuary of Poggio Colla suggest that particular animal remains were selected for deposition with objects of significance[59]. Similar acts of debris curation may also have occurred at a larger scale. Even within a single assemblage, a range of activity types are represented by the remains of food and non-food animals. This sense of diverse materials 'belonging' to a space is echoed in the structured decommissioning of sacred places throughout central Italy. The destruction of sacred buildings was frequently accompanied by the deliberate and sometimes very careful burial of objects and architectural pieces associated with the structure. The best known example is probably the burial of the roof statues of the Temple of Apollo at Veii, but comparable practices are found throughout central Italy[60]. Varro refers to subterranean chambers under the precinct of the Capitoline temple that were used to house votive offerings and statues that had fallen off the temple[61]. In this context, dedications and elements of the sanctuary could be considered akin to what Rowley-Conwy calls "ritually charged garbage"[62], which required deposition in a safe, or at least appropriate, location. Perinatal human remains, which were deposited within domestic space rather than necropolises, were another form of material that necessitated burial within (or outside of) certain locations[63].

Certain animal remains received similar treatment, although the means through which they acquired a special, 'charged' status would have been very diverse. Evidence points to a wide variety of Etruscan ritual practices involving animals, some of which required live animals, while other rituals necessitated their slaughter[64]. Even when an animal was killed, the primary symbolic role was not necessarily held by the meat, but possibly by the internal organs, blood, skin, or even the action of butchery itself[65]. This range of activities would be expected to produce an equally diverse range of debris, some of which – the "ritually charged garbage" – necessitated deposition in a particular location. Over a period of time, this deposition and re-deposition of 'charged' debris would create a palimpsest of faunal remains and other material culture generated by symbolic activities. During redevelopment of an area, 'charged' materials might be divided or mixed with other fills as required by the logistics of construction. Equally, 'charged' debris could have been used to transfer significance from a previous structure or event to a new one, or to mark a change in function[66].

57 See refs 9–15.
58 For example, the marked proportion of pig cranial elements in well 469 at Veii, Cucinotta et al. 2010. For trophy accumulations represented by collection of bones or curation faunal elements, e. g. after a feast or ceremonial meal see Twiss 2008; Hayden 2016, 61; Rowley-Conwy 2018.
59 Specifically a bronze *patera,* statues bases, and a bronze plaque. Trentacoste 2013.
60 Glinister 2000. Also Warden 2012.
61 Aulus Gellius, Noctes Atticae 2.10.
62 Rowley-Conwy 2018.
63 Trentacoste et al. 2018
64 Rask 2014, forthcoming.
65 Rask 2014, forthcoming.
66 In northern Italy, human remains could be used similarly. See Zanoni 2011; Trentacoste et al. 2018.

Consideration of these fills as a palimpsest of symbolic activity also offers a coherent way of interpreting the presence of supposed non-food animals in the fills – owls, for instance. Owls are a rare occurrence on central Italian sites, and are absent from habitation assemblages in the region[67]. In contrast, the remains are more frequent in cult places, subterranean structures, and sanctuaries, including the shrine at *Caere* and Cavità 254[68]. Although owls may be attracted to human habitation by commensal prey, their repeated appearance in cultic deposits, suggests that their bones were not simply intrusive. Birds were instrumental in Etruscan and also Roman religion through their role in augury – the interpretation of omens observed in the flight of birds[69]. Owls were considered inauspicious omens and portents of death[70]. The recovery of owls from contexts like *Caere*'s semi-subterranean shrine and a pit in Orvieto's Cannicella sanctuary (located within a necropolis) reinforces the association of these birds with the underworld. In Rome, the presence of an owl was a hazard that had to be mitigated by catching and killing the bird, and rewards were offered to incentivise the process[71]. Owls could also be killed and displayed to protect crops and households from misfortune[72]. In this context, the killing of owls is preformed neither for food nor a votive offering or sacrifice, but rather as a kind of apotropaic pest control. The texts give a sense of these birds as dangerous portents, whose power continued after death. The distribution of owl bones in central Italy suggests that sanctuaries and subterranean contexts were appropriate places of deposition for these dangerous birds of the night. Rather than reflecting activities occurring within these religious spaces, the spaces themselves may have the safest place to dispose of animals and other items that 'belonged' to underworld.

Conclusion

Ritual can be understood as "a special type of action which is somehow connected to the belief system"[73]. In Etruscan religion, an animal and its remains could be subject to a range of actions imbued with symbolic significance: selection, transport, killing, butchery, distribution, consumption, and also deposition. Contextual information can provide clues on the processes that produced a body of faunal material, but a key problem with interpretation of 'ritual' in zooarcheology is identifying which action(s) were ascribed as symbolic meaning. Are the bones the debris of a ritual activity? Or is the burial itself the ritual? Or both? In some cases, the ritual treatment of animals may have comprised a series of prescribed formal actions beginning with selection and ending with slaughter and consumption, while other 'rituals' might be better understood as traditions simply related to disposal. In faunal assemblages from significant subterranean spaces we find many layers of small and large symbolic activities, encompassing events associated with the closing of the space itself, to previous ritual and mundane activities in the area. These palimpsests provide a very rich record of ancient life, whose texture is lost if the entire deposit is lumped into a single broad category. The more specific we can be as specialists in our consideration of taphonomy and assemblage formation, the better we can understand the variety of ancient ritual.

The bone-rich fills discussed here offer a strong sense that certain materials belonged in subterranean spaces, even though the properties that mandated their inclusion in such space could be very diverse. Food and feasting debris were one category of material, and food consumption and deposition had an important role in the re-development of urban space and associated closure of subterranean structures; however, without thorough integrated studies it is difficult, if not impossible, to assess the nature, and therefore meaning of the consumption event(s) that produced these faunal assemblages. The scale of activity at Orvieto suggests a large event, potentially civic in nature, and presumably orchestrated by the same people who organised construction of the city's monumental structures. This interpretation fits well with the site's identity as home to a major federal sanctuary, and the role of urban centres and

67 See Trentacoste 2014, 35; 145; 154; A small owl bone has been identified at Forcello near Mantova in northern Italy.

68 *Atene noctua*: Rome – Centocelle (De Grossi Mazzorin 2004), Tarquinia – Pian di Civita (Phase 1; Bedini 1997), Pyrgi – well in *Area sacra* C (Cardini 1970), Orvieto – Cannicella sanctuary (Wilkens 2008), Cetamura (Corbino / Fonzo 2017; also *Tyto alba* in Roman levels).

69 See De Grossi Mazzorin 1990.

70 Pliny, Natural History 10.16.

71 The bird was then burnt and its ashes scattered. Julius Obsequens, Prodigies 26, also 53.

72 Columella, On Agriculture 10.337–50.

73 Bourque 2000, 20.

sanctuaries as foci for competitive display and the redistribution of agricultural produce by local elites[74]. But is consumption on this scale a more pronounced version of the same phenomenon we find in smaller assemblages like that from *Caere*? Or does it have a different motive or intended audience? Banqueting offered a means to assert cultural identity and affirm local social standing, but for whose benefit? Aristocratic inter-family rivalries within the ancient city could produce similar archaeological patterns as inter-city competition and the promotion of regional solidarity[75]. Resolution of these and similar questions require further zooarchaeological and specialist work, as well as sustained dialogue with researchers working more broadly on protohistoric communities. Nonetheless, these bones demonstrate that from the banqueting table to the belly of the earth, animals and animal remains had a vital role in ritual life of Archaic Italy.

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74 See Nijboer 2004; Becker 2009; Potts 2015; Biella 2019. For animal redistribution see Barker 1989; Trentacoste 2016.

75 Orvieto presents evidence for a broad, urban middle- to upper-class during the Archaic period. See Amann 2017a; Amann 2017b. However, Rowley-Conwy 2018 hypotheses that "ritually charged garbage" that requires special burial should result from competitive rather than solidarity feasts.

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Fig. 1: Map adapted from Ancient World Mapping Center map of 'Rome and Environs'. – Fig. 2: Image courtesy of M. Di Lieto, Caere Project. – Fig. 4: Adapted from Feruglio 1998. – Fig. 5: Photo courtesy of Alistair Potts. – All other figures: Author.

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Abstract

Romans and Etruscan shared many cultural practices, including religious traditions. One such practice was the use of bone-rich deposits to deliberately close significant subterranean spaces and structures. The faunal material in these fills can often be separated from common domestic debris on the basis of associated materials and by patterns in the treatment of animals and choice of species. This paper presents new data on two urban deposits from pre-Roman central Italy: bone-rich fills from a semi-subterranean shrine in Cerveteri and a large rock-cut quarry in Orvieto. Both of these structures produced assemblages dominated by livestock remains with a smaller quantity of wild specimens. Comparison of the faunal material from these deposits revealed commonalities in the treatment of animals, which may suggest a set of shared practices related to the chthonic nature of both contexts. Considered in relation to other subterranean contexts with deliberate bone fills, this study sheds new light on the origins of Roman ritual practices conducted in an urban setting. However, analysis of these deposits also raises methodological questions surrounding the recognition of ancient feasting and the ritual treatment of animals, as well as the origins of material encountered in 'ritually closed' spaces. These findings challenge us to be specific in how we articulate the logistics of closing a sacred space and the role of animals – and animal remains – in the process.

Zusammenfassung

Im Bauch der Erde: Knochen und die Schließung heiligen Raumes in Mittelitalien

Römer und Etrusker teilten viele kulturelle Praktiken und religiöse Traditionen. Eine dieser Praktiken war das bewusste endgültige Verschließen bedeutender unterirdischer Räume und Strukturen mit an Tierknochen reichen Verfüllungen. Das Faunenmaterial in diesen Schichten kann oft von gewöhnlichem Hausschutt durch Muster bei der Behandlung von Tieren und der Auswahl der Arten unterschieden werden. In diesem Beitrag werden neue Daten zu zwei städtischen Befunden aus dem vorrömischen Mittelitalien vorgestellt; es sind knochenreiche Schichten aus einem halbunterirdischen Heiligtum in Cerveteri und einem großen Steinbruch in Orvieto. In beiden Befunden dominieren Haustierreste; sie enthielten nur geringe Mengen an Wildtierresten. Der Vergleich des Faunenmaterials aus diesen beiden Befunden zeigt Gemeinsamkeiten in der Behandlung von Tieren, was auf gemeinsame Praktiken hindeutet, die mit den chthonischen Kontexten beider Orte zusammenhängen könnten. In Bezug auf andere unterirdische Befunde mit absichtlichen Knochenverfüllungen wirft diese Studie ein neues Licht auf die Ursprünge römischer ritueller Praktiken in städtischem Kontext. Die Analyse wirft jedoch auch methodologische Fragen auf, die die Durchführung antiker Feste und die rituelle Behandlung von Tieren sowie die Herkunft des Materials betreffen, das in „rituell verschlossenen" Räumen angetroffen wurde. Diese Befunde fordern uns heraus, zu überlegen, welche Rolle Tiere – und Reste von Tieren – bei der endgültigen Schließung eines heiligen Raumes spielten und an welchen Orten die Riten hierzu vollzogen wurden, bevor die Überreste als abschließende Verfüllung der Ritualräume und -gruben dienten.

Résumé

Dans le ventre de la terre : les os et la fermeture de l'espace sacré en Italie centrale

Les Romains et les Étrusques partageaient de nombreuses pratiques culturelles, y compris les traditions religieuses. L'une de ces pratiques consistait à amonceler des os pour fermer d'importants espaces et structures souterrains. Les os de ces dépôts se distinguent souvent des déchets domestiques par le matériel associé, les types de traitement des animaux et la sélection des espèces. Cet article présente de nouvelles données concernant deux dépôts urbains préromains de l'Italie centrale: des remplissages riches en os provenant d'un sanctuaire semi-souterrain de Cerveteri et d'une grande carrière à Orvieto. Les deux structures ont livré des ensembles constitués principalement de restes de bétail avec une faible quantité de spécimens sauvages. La comparaison du matériel des deux dépôts a révélé des parallèles dans le traitement des animaux qui suggère un ensemble de pratiques communes liées à la nature chthonienne des deux contextes. Cette étude, considérée par rapport à d'autres contextes souterrains avec remplissage d'os intentionnel, apporte un nouvel éclairage sur les origines des pratiques rituelles romaines observées en milieu urbain. Toutefois, l'analyse de ces dépôts soulève des questions méthodologiques sur l'identification des festins antiques et le traitement rituel des animaux, ainsi que sur les origines du matériel trouvé dans les espaces « fermés rituellement ». Ces découvertes nous incitent à être précis dans notre manière de formuler les aspects logistiques de la fermeture d'un espace sacré et le rôle joué par les animaux – et restes animaux – dans ce processus.

Sacrificing dogs in the late Roman World? A case study of a multiple dog burial from *Viminacium* amphitheatre

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Keywords

Viminacium, multiple dog burials, offerings

Schlüsselwörter

Viminacium, Mehrfachbestattungen von Hunden, Beigaben

Mots-clés

Viminacium, sépultures multiples de chiens, offrandes

Introduction

Animal sacrifice in the Roman world was considered to be a form of communication with the divine sphere. Such rituals were performed to thank Gods, heroes and other divine beings, and ask them for favours, protection, and good health. The most commonly sacrificed animals were cattle, sheep, goats, and pigs[1], with the occasional addition of other species such as dogs. Since dogs were often connected to the underworld[2], their sacrifice was usually related to chthonic gods[3]. Considered impure, dogs are thought to have been sacrificed as means of purification and rites of passage, as foundation offerings for the protection of buildings, as well as within agricultural rituals[4]. On the other hand, they could also have been sacrificed in order to serve as faithful companions and guardians in the afterlife – traits taken from their everyday roles in human life[5].

Attested all around the Empire[6], dog burials associated with sacrificial rituals were found in the Roman city of *Viminacium* (Upper Moesia), in the form of individual burials, burials with grave goods, in wells, as well as in human sepultures[7]. As such, they were connected with the representation of pets and companions to the underworld, while one skinned individual, as well as a common burial of a dog skeleton and a horse's skull, potentially points to chthonic gods' offerings, presumably to Hecate, Diana or Epona.

In this paper, we present an archaeological deposit from the area of *Viminacium* amphitheatre, which, based on the presence of several dog skeletons and their archaeozoological features, can potentially point to a sacrificial rite.

1 Ekroth 2014, 324; 330.
2 Jenkins 1957; Mainoldi 1981; Menache 1997.
3 Toynbee 1973; De Grossi Mazzorin / Minitti 2006, 62.
4 Lauwerier 2004.
5 De Grossi Mazzorin / Minitti 2006, 62.
6 De Grossi Mazzorin / Minniti 2001; De Grossi Mazzorin / Minniti 2006; MacKinnon / Belanger 2006; Morey 2006; Morey 2010.
7 Vuković / Jovičić 2015.

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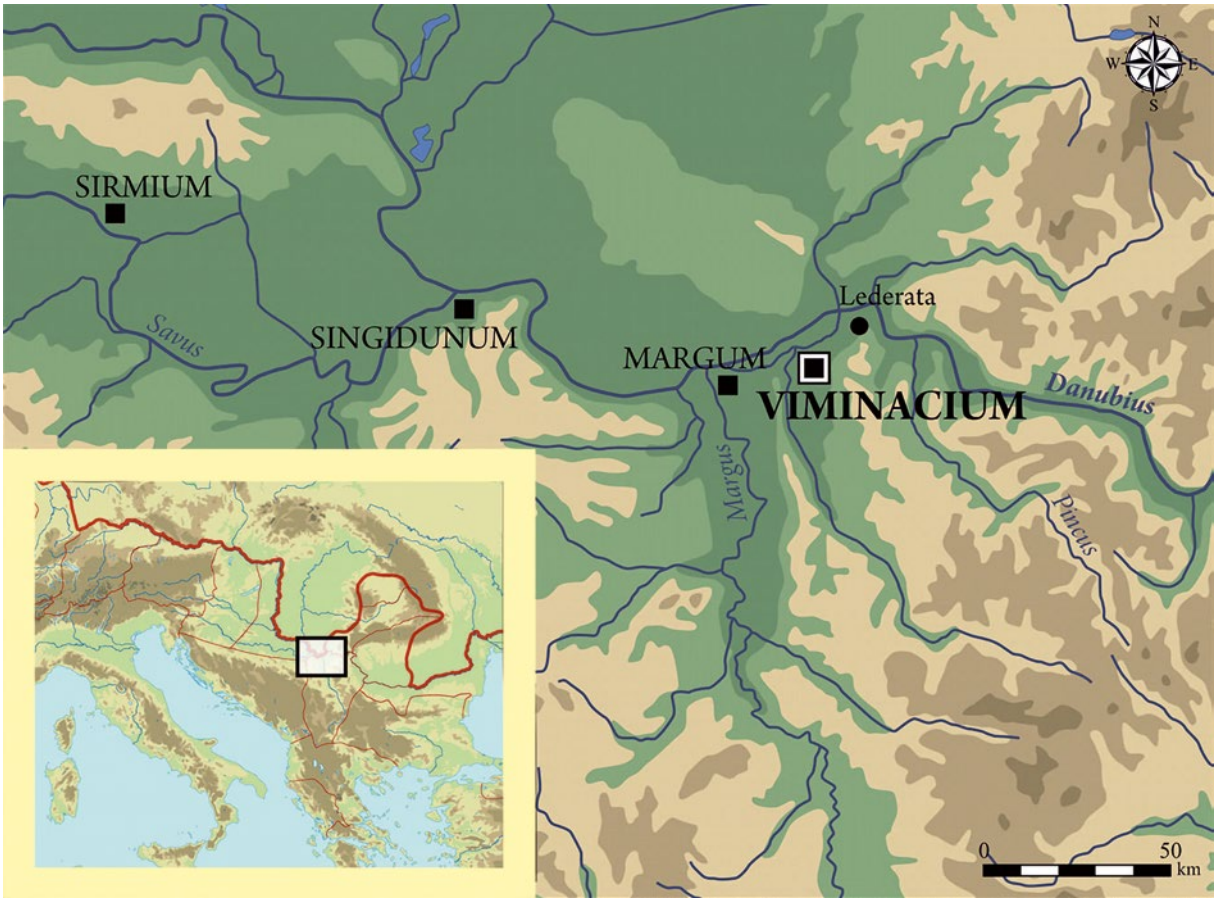


1 The position of *Viminacium* on the map of Roman provinces.

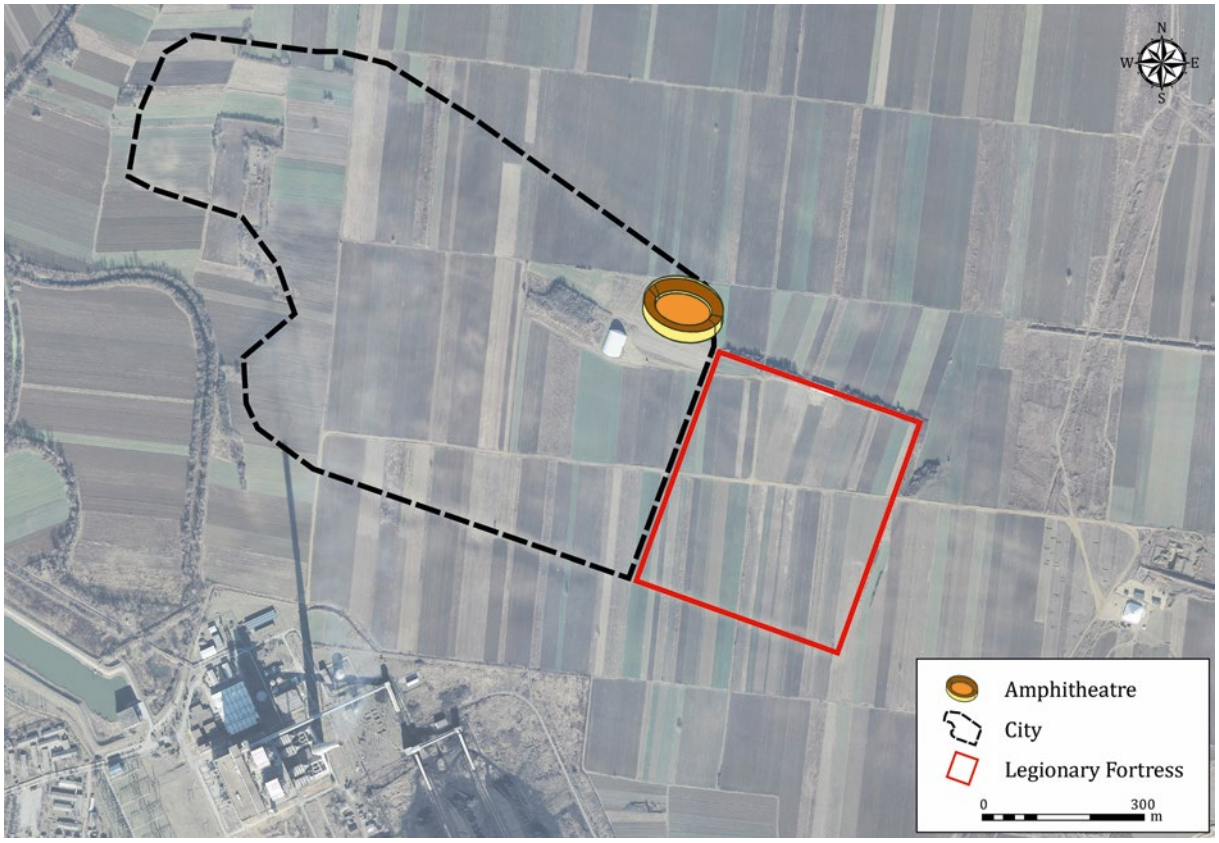
Archaeological background

Viminacium and *Viminacium* amphitheatre

Viminacium is located in eastern Serbia, on the right bank of the River Mlava, close to its confluence with the River Danube *(fig. 1)*. Initially it was a fortress, where the *legio VII Claudia* was stationed from the 2nd half of the 1st century AD. Next to the fortress, a city arose and became the capital of the province *Moesia Superior* and later of *Moesia Prima*[8]. The amphitheatre was built at the beginning of the 2nd century AD c. 60 m away from the legionary fortress. In time, the city walls were built and the amphitheatre was incorporated into the city area, situated in its north-eastern corner *(fig. 2)*. The amphitheatre was used until the 1st half of the 4th century AD and then it was abandoned. The surface of the arena was destroyed and it was used for clay deposits, and as a result the whole surface of the amphitheatre was filled up during the 2nd half of the 4th century AD. By the end of the 4th century AD this area was used as a cemetery[9].

8 Mirković 1968, 56–73; Popović 1968.

9 Bogdanović / Nikolić 2017; Nikolić / Bogdanović 2015.



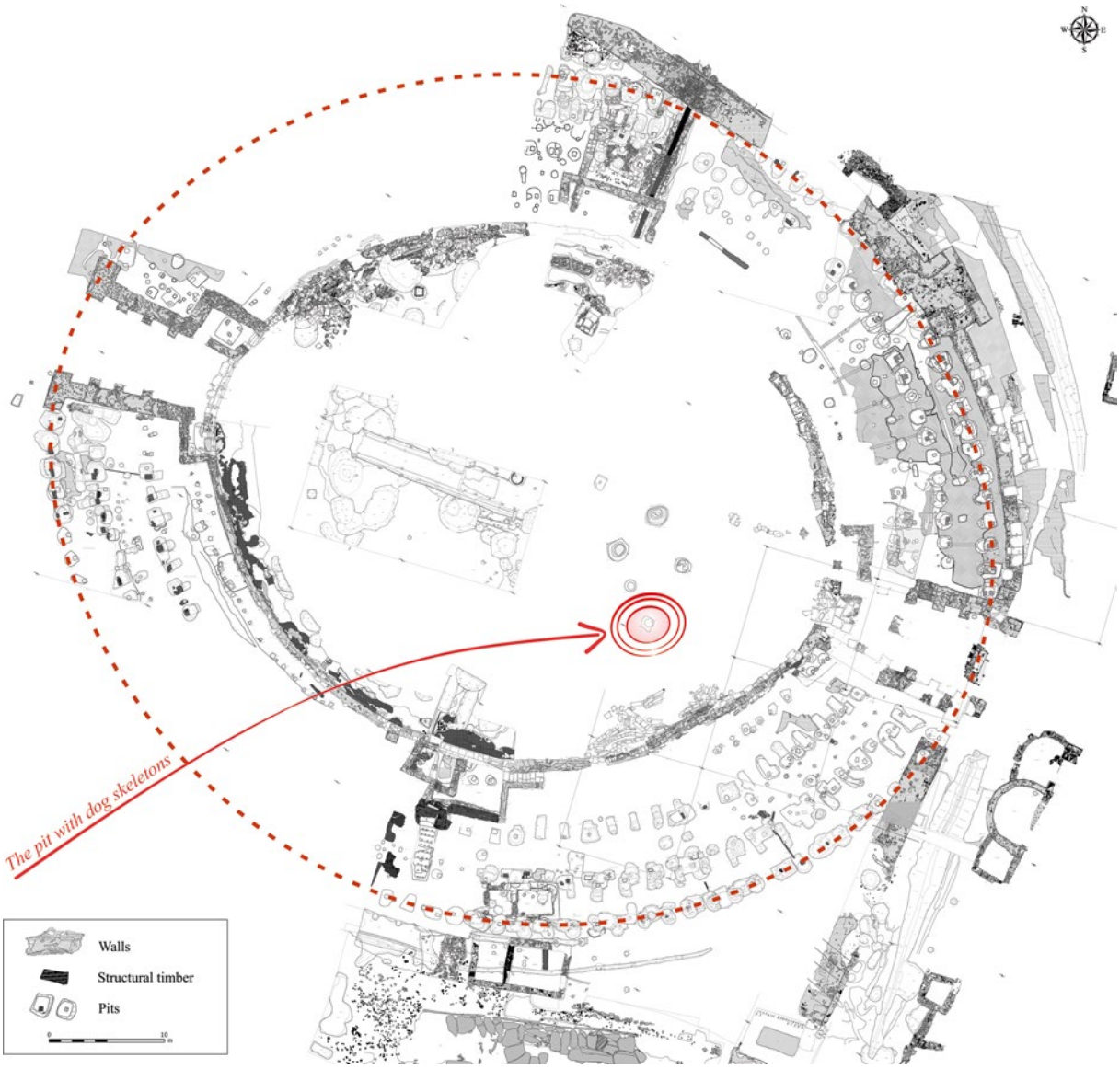
2 The location of the amphitheatre within *Viminacium*.

The pit with dog skeletons

Dog remains relevant to this study were discovered in the course of 2010, during systematic archaeological excavations of the amphitheatre[10]. They originate from the pit that is located in the area of the arena *(figs 3–5)*. Within the arena a dozen pits that date back to the 4th century AD have also been discovered. The pit with dog skeletons lies c. 3.50 m below the arena surface. Above the pit the layer which filled the arena was excavated. The pit was roughly square in shape with curved angles and it was dug into the natural clay and sandy yellow soil. Its dimensions are 1.10 x 1.10 m, and it is 1.10 m deep, except in its south-eastern part, where its bottom was discovered at the depth of 1.50 m. The pit was filled with brown earth, which contained fragments of bricks and a few stones, as well as animal bones and a small number of other archaeological finds. According to archaeological finds it is suggested that this context dates back to the 2nd half of the 4th century AD, which is the period when the amphitheatre was not in use anymore. The finds include a blue glass bead[11] *(fig. 6,1)*, a hemispherical glass beaker[12] *(fig. 6,2)*, and pottery fragments which imply only three forms of late Roman vessel: an olive-green glazed bowl with a semi-spherical recipient[13] *(fig. 6,3)*, a pot with a sloped rim[14] *(fig. 6,4)* and a Pontic amphora with a bell-shaped opening, handles circular in section and a globular body with combed decoration[15] *(fig. 6,5)*.

The skeletons were discovered at a depth 0.80 m *(fig. 4)* and they had been covered by fragments of bricks. The skeletons were placed one above the other and they were oriented in different directions, so it is impossible to suggest any regular pattern. In addition to the dog remains, which were highly predominant in the pit, there were also a few bones of cattle and pig, two equid (horse or mule) remains, as well as one sheep, one goat and one cat bone.

10 Systematic excavations of *Viminacium* amphitheatre that lasted from 2007 until 2017 were conducted by the Institute of Archaology in Belgrade under the directions of Dr. Miomir Korać.
11 Similar beads are known from many contexts and they could be dated back to different centuries.
12 It belongs to the type VII/10 (after Ružić 1994, 45–49).
13 It belongs to the type LRG 27 (after Cvjetićanin 2006, 34–39).
14 The same type of pots have been detected during the excavations of *thermae* in *Viminacium* (Raičković 2012, 147, fig. 4,7).
15 It represents Pontic import that belongs to type XX (after Bjelajac 1996, 67–69).



3 The location of the deposit with dog skeletons within the layout of *Viminacium* amphitheatre.

Methods

We studied the archaeozoological aspects of the dog skeletal remains, which included their quantification according to MNI, taphonomic features (weathering, burning, breakage patterns, butchery marks), their sex, and age at the time of death according to tooth eruption and epiphysial fusion[16], their stature according to withers height calculations[17], and pathological alternations. In order to interpret the findings, we have adopted the biographical approach suggested by J. Morris[18] based on anthropological theories. The context of the finds, literary evidence, and archaeological finds from the Roman provinces in modern Serbia related to dog sacrifices were also used for the understanding of meanings of the deposit studied in this paper. Cases of multiple dog burials and dog burials within amphitheatres from the area of the Roman world were also considered.

16 Silver 1969.
17 Harcourt 1974.
18 Morris 2011; Morris 2012.

4 *In situ* photo of the deposit with dog skeletons.

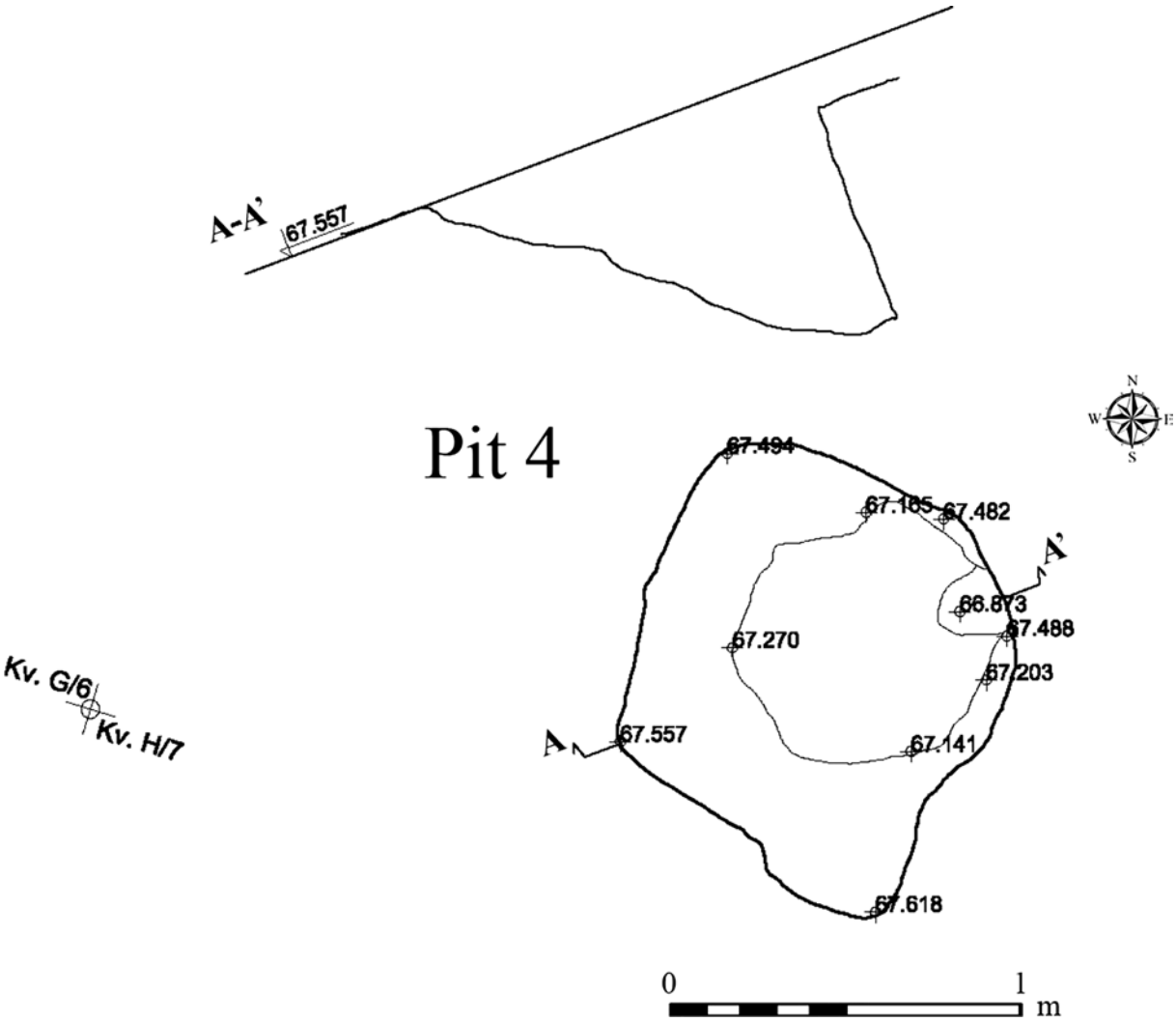
Archaeozoology of dog skeletal remains

Animal remains from the pit were collected by hand, so there is a possibility that some smaller and more fragile elements have been lost. The dog remains are very well preserved and no weathering or gnawing marks have been noticed, so we presume that the dogs were rapidly buried after their disposal.

Skeletal parts were mostly in articulation. According to the most frequent skeletal element and other features, such as stature and age, we can conclude that at least 13 dogs were buried here. Not all elements from all of the dogs were found, and there is a particular disproportion in element part distribution; skulls, mandibles, and atlases were present from 8 dogs, whilst upper and lower limb fragments represent a maximum of 13 dogs *(fig. 7)*. This suggests that partial skeletons were buried in the pit.

The colour of the dog skeletal remains varies between yellow, brown, red and black and most of the specimens displayed a combination of these colour shades. Colour alternations on bones might be related to the exposure of animal carcasses to high temperatures and indeed the recorded colours on studied dog remains match with those previously addressed with heating and burning, starting from yellowish at lower temperatures, over reddish, brown, black and grey to white[19]. Grey and white have not been observed in the studied assemblage, and so bones were neither carbonised nor calcinated, while the medullar cavities were not burnt. This suggests that the

19 Shipman et al. 1984; Nicholson 1993.

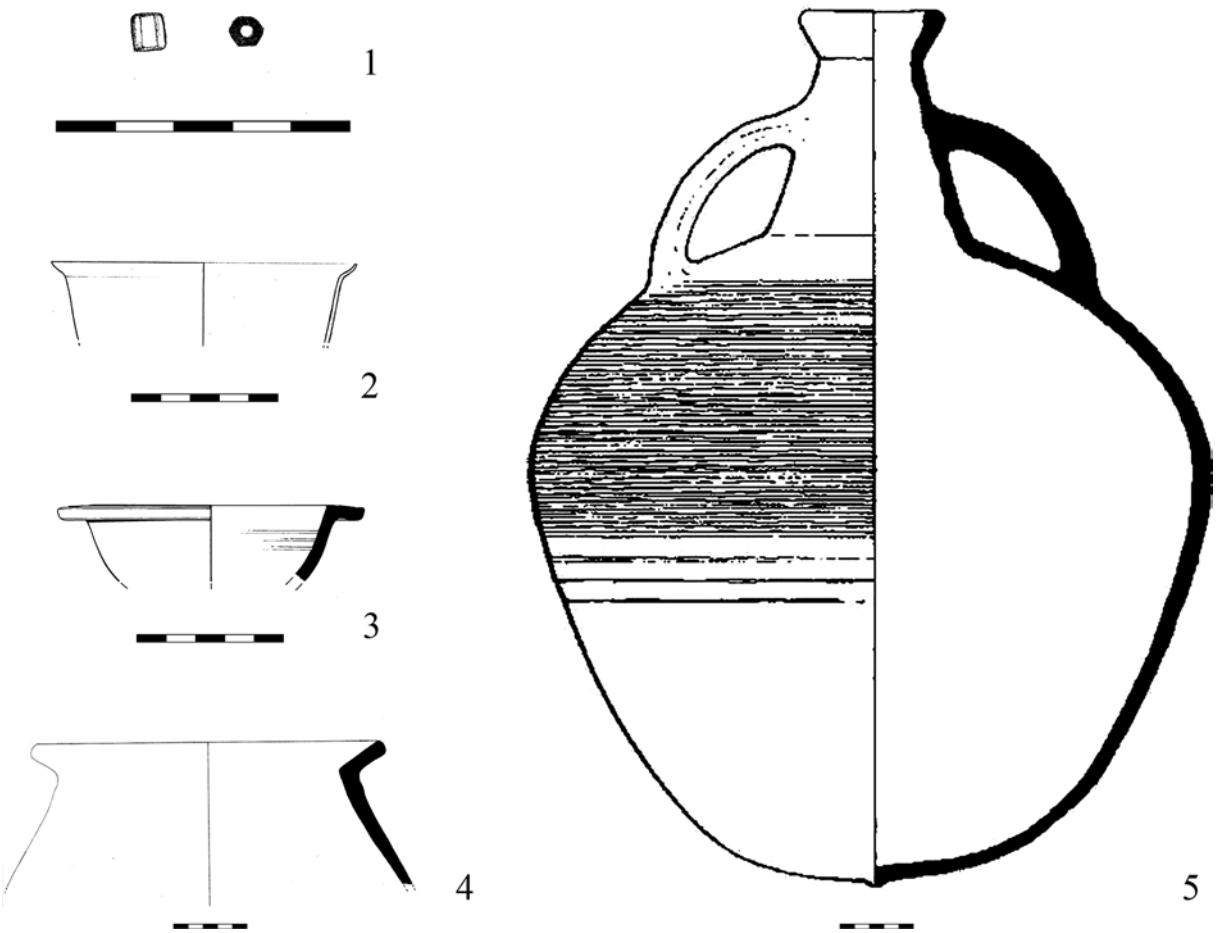


5 The layout of the deposit with dog skeletons.

dog carcasses were not exposed to high temperatures for long[20], and that they were just slightly or moderately heated[21], rather than being left long enough to cause the carbonisation or calcination of the bone. Some of the long bones are more blackish at the joints than along the shafts *(fig. 8)*, which might imply that flesh was still on the bones prior to heating[22]. This pattern also suggests that the bones may have been roasted[23]. Brownish and reddish stains also observed on dog cranial parts *(figs. 9–11)* might also sustain this suggestion. However, the colour of the bone is not *per se* sufficient to conclude that the animals were exposed to high temperatures[24], especially in cases where drastic alternations of bones (clearly burnt bones) are not visible. Diagenetic processes might also change the colour of the bone, as organic acid, manganese dioxide, iron oxide, etc.[25], also cause browning, blackening, and yellowing of bones. However, these options do not exclude each other, and the colour alternations could be the consequence of a combination of both human treatment (heating) and the soil conditions.

The upper limb bones from at least two individuals *(fig. 12)* were broken into two or three parts, probably while still fresh, as the fractures are mostly smooth with sharp angles[26]. Broken bone parts were found together, providing another reason to hypothesise that they were broken while still fresh, with muscles attached to them and most probably as the consequence of human treatment.

20 Shipman et al. 1984.
21 Shipman 1988.
22 Gifford-Gonzalez 1989, 193.
23 Russell 1999, 162–163.
24 Shipman et al. 1984.
25 Nicholson 1993.
26 Outram 2002, 59.



6 The archaeological finds from the deposit (1. glass bead; 2. glass beaker; 3. ceramic bowl; 4. ceramic pot; 5. amphora).

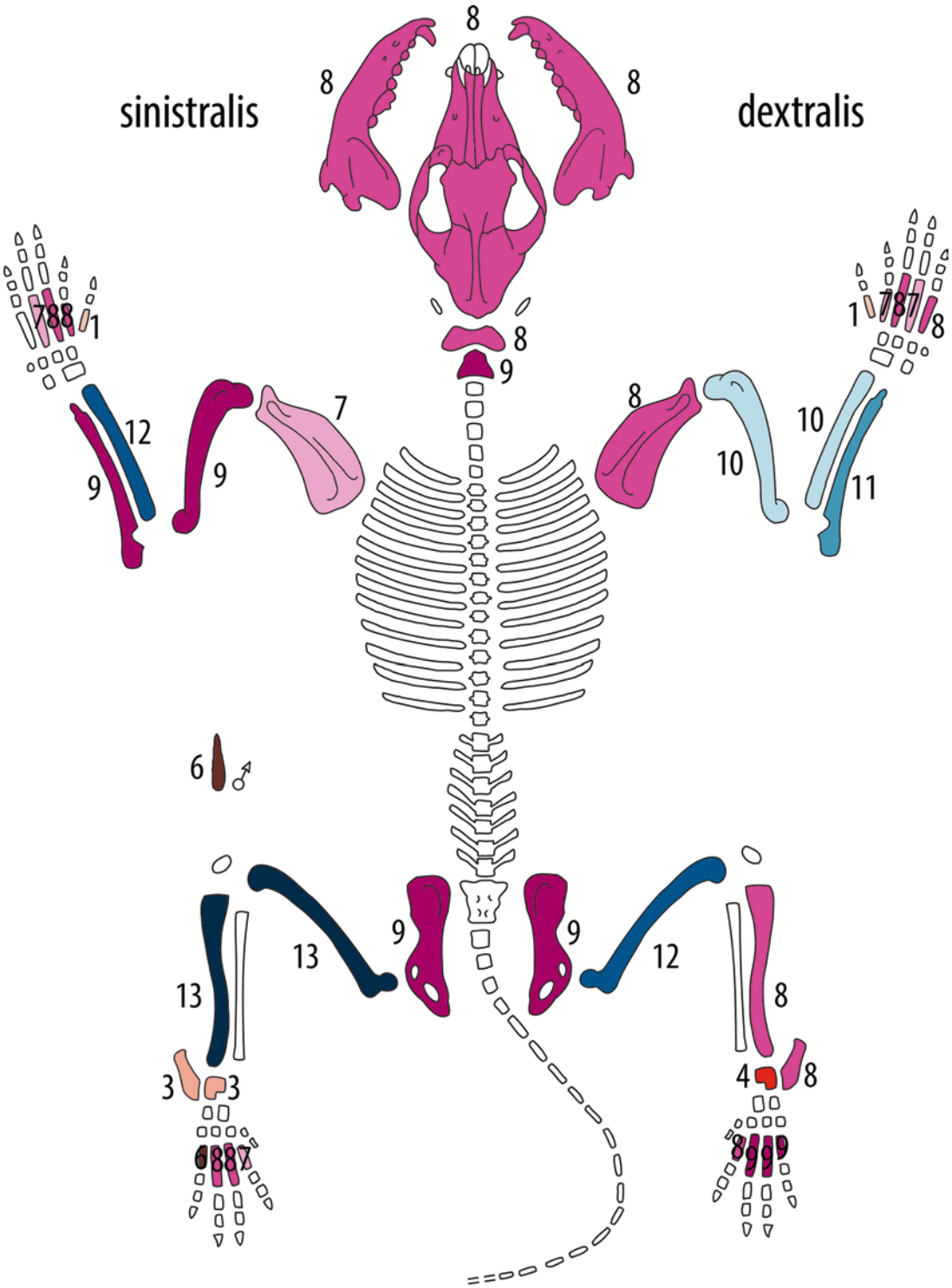
Butchery marks have been observed on a few specimens *(fig. 13)*. Both the left *(fig. 13a)* and right humeri *(fig. 13b)* of a single individual have butchery marks such as chops on the distal shaft end, while the latter has its lateral epicondyles cut off. One phalanx *(fig. 13d)* bears chop marks on its dorsal side and there is also a chop mark on a distal 3rd metacarpal *(fig. 13c)*. These chops point to the disarticulation of the skeletons prior to deposition.

The dogs from the pit differ in age: there was one neonate dog *(fig. 14)*, at least one juvenile, and three subadults, while the others were adult dogs, as the epiphyses were mainly fused. According to the presence of six penile bones, it can be concluded that at least six dogs were males. Different wither heights, that could be calculated on nine individuals suggest different statures of these animals. They vary between 23 and 61 cm *(tab. 1)*. The smallest one was a dwarf type dog *(fig. 15)* with twisted and short limbs, while the others mostly fall within the most abundant group of dogs in *Viminacium* which were medium-sized dogs (between 50 and 60 cm)[27].

GL tibia (mm)	Wither height (cm)
76.1	23.2
167.7	49.9
167.9	50
170.7	50.8
180	53.5
195.3	58
196	58.2
203.8	60.5
205.7	61

Tab. 1 Wither height calculations (Harcourt 1974) of the dogs from the deposit according to the greatest length of tibia.

27 Vuković 2015.



7 Skeletal parts distribution of dog remains from the deposit within the layout of dog skeleton (layout by M. Coutureau (Inrap, Archaeozoo) according to Helmer 1987).

Traces of pathological alternations were noticeable on nine specimens. They include the following anomalies: genetic abnormalities, such as the presence of a supernumerary third lower molar in both mandibles of the same specimen; joint diseases (*osteoarthritis*) probably due to the old age of animals observable at both the 3rd metacarpal bone *(fig. 16d)* and the 1st phalanx *(fig. 16e)*; buttressing on a distal end of the 3rd metacarpus, also the

8 Long bones with visible color alternations.

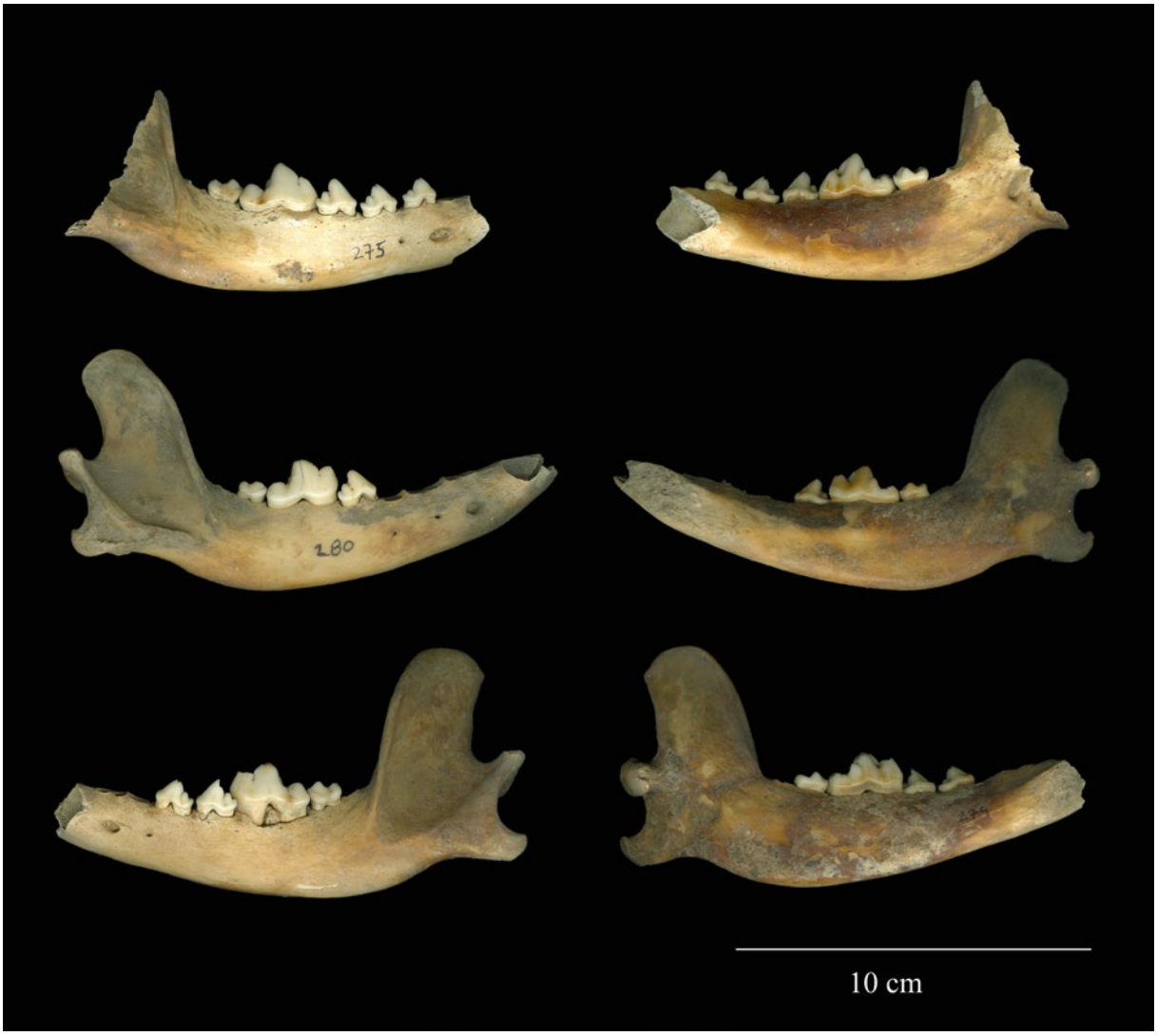
consequence of senility; exostosis on a femur *(fig. 16c)* that might have caused difficulties in movement; traces of infection within a proximal radius *(fig. 16b)* and tibia in the form of porosity of bone tissue; and a healed fracture of a rib *(fig. 16a)*.

Discussion

It is obvious that these dog remains are not waste and that they had been intentionally buried here: the bones are in a good state of preservation, no weathering or gnawing marks are present, so it can be concluded that the animals were buried soon after their death, and that their burial occurred in the course of the same event.

Life history of dogs from the deposit

Although we are confident that these dogs had been placed at the site intentionally and that humans had influenced the formation of these associated bone groups (ABG), in order to interpret them we chose to look at the



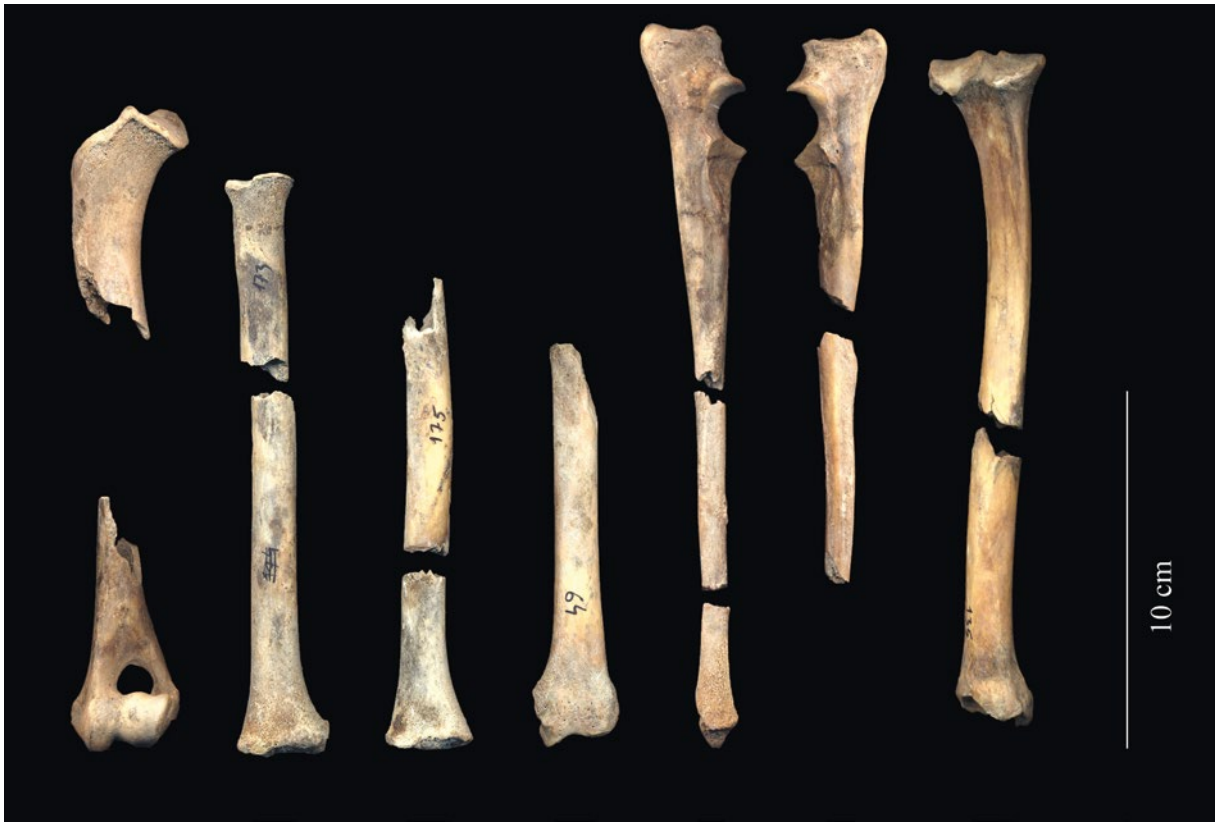
9 Mandibles with color alternations.

life histories of both the animals and animal corpses. For that reason, we found that the biographical approach to these deposits as suggested by J. Morris[28] on the basis of anthropological theories was highly useful for our better understanding of the situation. We can assume that at least 13 dogs of different breeds and ages had been chosen for slaughter. As they belonged to different phenotypes that were common in *Viminacium*[29], and as they had some pathological alternations common to dogs[30], they had probably been bred as regular dogs and could have been chosen randomly for this occasion. As a result, they represent the transformation of regular dogs into victims that were chosen to be killed. There is also the possibility that they lived as stray dogs. How they were killed is impossible to answer, as we do not have any information from the bones that point to the method of slaughtering and killing. We also do not know whether the dogs were killed in a ritual manner and what had happened to the remaining body parts that were not placed here – they could have been placed somewhere else, or thrown away as waste. After being killed, the dog corpses might have been exposed to heat, probably roasting, as suggested by the bone colouring. Several butchery marks as well as broken long bones point to the fact that some of their remains were processed, but we cannot state for sure that they were used as food. Butchery marks on previously discovered dog bones from *Viminacium* are extremely rare and have mostly been related to ritual activities, as

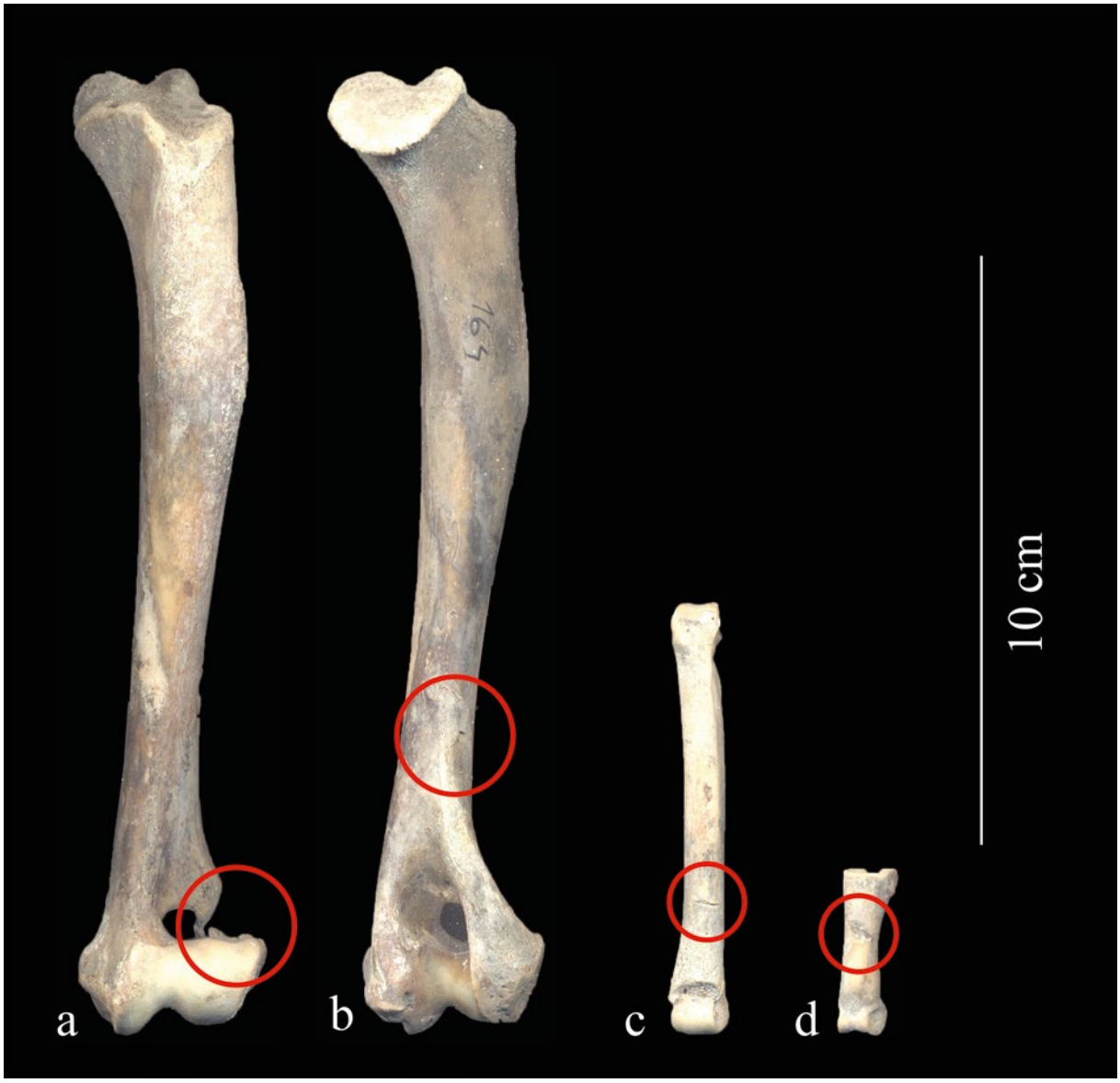
28 Morris 2011; Morris 2012.
29 Vuković 2015.
30 Vuković 2015.

10 A fragmented skull with color alternations.

11 A skull with color alternations.



12 Long bones with old breakages.



13 Chop marks on the following specimens: a. distal left humerus; b. diaphysis of right humerus; c. dorsal 3rd metacarpus; d. dorsal 1st phalanx.

was the case for a skinned dog recovered from the eastern *Viminacium* cemetery[31]. Absence of butchery marks and the low fragmentation of dog bones from other *Viminacium* faunal assemblages suggest that dogs were not consumed in this Roman city[32]. The dogs were most likely kept as pets, while they could have also been used for guarding herds of livestock, or as hunting companions, etc. Dog body parts were all put together in this pit, although this was not done with much care. After this the pit was closed by bricks that may have been meant to mark the place of burial.

Cultural significance of the deposit

If we assume that the dogs were killed, roasted, processed, and buried in a ritual manner, it is possible that they were sacrificed and offered. However, it is difficult to relate the dog deposit to a specific deity as there is no direct evidence for this. In ancient mythology dogs were linked to chthonic gods, such as Hades, Serapis and Hecate, and they played the role of guardians of the entrance to the

31 Vuković / Jovičić 2015.

32 Vuković 2015.

14 Remains of a neonate dog.

15 Remains of the dwarf type dog.

underworld, a Cerberus[33]. Ancient texts mention that young dogs were offered to Hecate in the course of purification rituals[34]. Evidence of the cult of the goddess of Hecate is pretty scarce within the territory of the Roman provinces in Serbia[35] and they have not yet been confirmed in *Viminacium*. On the other hand, the cult of Diana, the presence of which has to a great extent been confirmed in this part of the Roman world[36] including in *Viminacium*[37], might also be related to dog sacrifice. It is known that one of the forms of Hecate was called Artemis Hecate to whom dogs (and other animals) were offered, possibly as part of chthonic rituals. As dogs were considered to have iatric character[38] and were therefore related to Asclepius or Epona, there is a possibility that in *Viminacium* they were offered in that manner. It is also possible that these animals were sacrificed in rituals of purification[39].

33 Toynbee 1973, 123.
34 Plut. Quaestiones Romanae 52, 277; Paus. 3, 14.9–10.
35 Plemić 2011, 119–127.
36 Plemić 2017.
37 Zotović 1996, 132.
38 Toynbee 1973, 123.
39 De Grossi Mazzorin / Minniti 2006, 63–64.

16 Pathological alternations on the following specimens: a. healed rib fracture; b. proximal radius with traces of an infection; c. exostosis on the femur; d. osteoarthritis evidence on the 3rd metacarpal bone; e. osteoarthritis evidence on the 1st phalanx.

The biggest question and challenge in relating the dog deposit from *Viminacium* with the sacrifice and to certain deities concerns the context of the find: its location and its date. It was not found within the sacrificial area proper, but within the area of the abandoned amphitheatre. In the immediate vicinity of the deposit, a small contemporaneous late Roman necropolis had been set. The deposit dates back to the 2nd half of the 4th century AD, when pagan Roman religious cults had already become less practiced and were gradually substituted by Christianity[40]. However, in the course of the 3rd and 4th century AD, Germanic tribes invaded the Danube provinces[41]. As noted in a paper published by L. Bartosiewitz[42], "multiple dog burials are not uncommon in Germanic ritual contexts", so there is also the possibility that the dogs represent remnants of a Germanic ritual custom. The identities of the people buried within the abandoned area of the amphitheatre are still unknown, so if the dog deposit is related to the offerings to the deceased buried there, there is the possibility that the dogs were offered in accordance with the autochthonous or Germanic obituary rituals.

Archaeological finds from the deposit – pottery sherds, a fragmented glass beaker, and a glass bead – are not considered to represent direct evidence for a ritual interpretation of the dog remains. They were not found at the same depth as the dogs and as they originate from the sediment that buried dog skeletons, it is likely that they represent common waste, and we assume that they were not associated with the dogs.

The possibility that the dogs had met their natural death as the consequence of a deadly disease, such as rabies, or for any other functional reason, such as population control, also cannot be completely ruled out. Regarding dog disease and also dog roasting, there are interesting accounts written by the Roman author Claudius Aelianus (c. 170–235 AD) in his work *De Natura Animalium* "[…] He is so keen-scented that he will never touch the roasted

40 Jeremić / Ilić 2018; Spasić-Đurić 2015; Korać 2007; Zotović 1994.

41 Mirković 1968, 73; Spasić-Đurić 2015, 28.

42 Bartosiewitz 2009, 166.

flesh of a dog, be it bewitched by the subtlest and craftiest of rich sauces […]"[43]. While this reference mentions roasted dogs and a dislike of dog meat, it does not refer to dog meat consumption by humans, and it is not clear from this text what is the reason for roasting these animals which were not commonly included in the diet. The quotes regarding dog diseases follow the aforementioned sentences: "[…] Now there are three diseases which fall to the lot of a dog and no more – dog-quinsy, rabies, and gout – while mankind has an infinite number. Everything that is bitten by a mad dog dies. If a dog once gets gout you will rarely see him recover his strength […]"[44]. These different quotes relate to dog roasting and dog diseases follow each other, and they are not necessarily mutually related. However, regarding the assumption that dogs from *Viminacium* deposit might have been killed because of an illness, such as rabies mentioned by Aelian who also warned that mad dogs might kill other beings, it seems that a relationship between roasting, killing, and burying sick dogs might be suggested, too. In any case, the dogs at *Viminacium* might have been killed due to a disease, and their corpses might have been treated by fire and were then finally buried, while the bricks that covered the burial, might have been used for burial closure, in order to protect the living beings from illness.

Indeed, Roman deposits with multiple dog burials have mostly been interpreted in a functional manner. At Owslebury (Hampshire, UK) deposits dated to the 3rd/4th centuries AD contained multiple (at least 55) mostly foetal and neonate dog skeletons, and were interpreted as the control of the dog population[45], or related to selective breeding practices[46]. At least six partial skeletons of both adult dogs and puppies were found buried together in a well in the vicus of the Roman fort of *Favianis* in Mautern, Lower Austria[47]. According to the author, the dogs were killed for unknown reasons, probably during the course of a dog extermination event. Another similar deposit, with 8 dog skeletons of different phenotypes from the area that surrounded a legionary camp in Augsburg in Bavaria, has also been interpreted in a functional manner. The dogs had many ante mortem injuries and J. Peters[48] suggested that they were stray dogs which somebody wanted to get rid of by killing them, possibly by poison. The *Viminacium* feature described in this paper consists mostly of adult dogs, while processing and potential roasting marks, suggest a possible ritual significance of the deposit. Perhaps a more similar deposit of 6 adult dog skeletons[49] was found in a pit within the necropolis Sontheim/Brenz (Braike) near Heidenheim, dating to the 2nd century AD. The dogs were probably violently killed as their skulls are fractured, some body parts are missing and some of the leg bones bear butchery marks. Within the deposit, a strap divider, possibly a part of hunting gear, was also found, and the interpretation is that the deposit is the burial ground for three pairs of hunting dogs which were sacrificed and later buried.

The context of the *Viminacium* dog finds, which is the area of an abandoned amphitheatre, is meaningful when other instances of dog skeleton discoveries in Roman amphitheatres are considered. Although it is worth noting that other examples mostly originate from the periods of the usage of those buildings. This is the case for the fragmented dog skeletons in the amphitheatre in London[50] and those from the *Virunum* amphitheatre[51], where quite frequent butchery marks suggest that these were the remains of dogs fed to beasts involved in the entertainment. In the *Viminacium* amphitheatre, within the features related to the usage of the object, namely *cavea,* other complete and fragmented dog skeletons have been also discovered[52]. Dog skeletons have also been found together with human skeletons and a goat skeleton in the fills of relieving arches at the *Augusta Raurica* amphitheatre[53]. This faunal assemblage includes material dating back to the periods of the building and rebuilding of the amphitheatre as well as the periods following the usage of the building. As the amphitheatre is located in the outskirts of the city, the dogs deposited here are thought to represent animals discarded there because it was at a distance from the residential areas[54]. Considering that *Viminacium* amphitheatre was also located at the city outskirts, recalling Augusta Raurica example, it also might be suggested that the citizens might have used the areas of abandoned amphitheatres for discarding or burying their dogs.

Besides varieties of explained interpretations for the cultural meaning of the *Viminacium* dog deposit, the possibility also stands that the deposit consists of remnants of dogs killed or died for 'functional' reason and that they were later buried with a symbolic connotation, that might or might not include any religious or spiritual act.

43 Ael. De natura animalium 4.40.
44 Ael. De natura animalium 4.40.
45 Maltby 1987.
46 Grieve 2012, 223.
47 Kunst 2006, 702–703.
48 Peters 1998, 186.
49 Nuber / Kokabi 1993.
50 Liddle 2008.
51 Galik 2004.
52 Vuković 2015.
53 Grädel 1989.
54 Grädel 1989, 155.

Conclusions

The late Roman deposit from the area of the arena in the previously abandoned *Viminacium* amphitheatre is thus far the only isolated case of multiple animal burials from *Viminacium* and the broader area of the Balkan provinces of the Empire. The contextual, archaeozoological and taphonomic studies of the deposit have revealed that at least 13 partial dog carcasses representing individuals from different age groups and statures were buried in the course of the same event. Human treatment of the carcasses, evidenced by bone colour alternations indicating possible roasting, as well as fresh breakage of the bones and butchery marks, point to unusual activities. Since dogs had had a special symbolic meaning in the Roman world, related to the underworld and to particular deities, we believe that this unusual late Roman deposit represents the remnants of a ritual practiced in the vicinity of the graveyard in the period when pagan rituals had become less common. Within the deposit and in its vicinity, there are no findings that could be related to possible dog sacrifice to a particular deity, although we have indirectly associated it with chthonic deities, whose cults were attested in *Viminacium*. An alternative interpretation refers to plausible Germanic rituals, in view of Germanic invasions and also of their settling within the Roman provinces in the course of the late antiquity. However, there is also the possibility that the deposit represents remnants of dogs killed for a practical and non-symbolic reason, such as disease, so a possible simple functional meaning of the deposit cannot be completely eliminated. It is also possible that the deposit could represent a combination of both functional and symbolic activities.

Although we could trace the life histories of the dogs buried in the abandoned amphitheatre of *Viminacium*, we could not illicit the exact meaning of this deposit, due to the absence of any direct evidence of their possible sacrifice (or any other religious or spiritual act) or their being discarded without any symbolic connotations. Nevertheless, this unusual deposit is certainly a specific example of the way in which dogs were treated by the people of *Viminacium*, and therefore adds evidence for the understanding of human-dog relationships in *Viminacium* and consequently in the Roman world.

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References of figures

Fig. 7: Layout by M. Coutureau (Inrap, Archaeozoo) according to Helmer 1987. – Tab. 1: Harcourt 1974. – All other figures: Authors.

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Abstract

In the course of excavations at the arena of the abandoned *Viminacium* amphitheatre (Serbia), within the broader area of the late Roman graveyard, a deposit has been discovered of a multiple dog burial that dates back to the 2nd half of the 4th century AD. Archaeozoological and taphonomic studies of dog remains have revealed that at least 13 partial dog carcasses of both puppies and adult dogs of different phenotypes had been jointly buried, after possible roasting and carcass processing. By corroborating archaeological, archaeozoological, ancient text data, as well as similar instances of dog burials from the Roman world, a number of potential interpretations of the deposit have been arrived at, from ritual sacrifices to chthonic deities, all the way to the functional slaughter, or some kind of combination of the two.

Zusammenfassung

Hundeopfer in der spätrömischen Welt? Eine Fallstudie einer Mehrfach-Hundebestattung aus dem Amphitheater von *Viminacium*

Bei Ausgrabungen im Amphitheater von *Viminacium* (Serbien), im weiteren Bereich des spätrömischen Friedhofs, wurde ein Depot mit mehreren Hundebestattungen aus der 2. Hälfte des 4. Jahrhunderts n. Chr. aufgedeckt. Archäozoologische und taphonomische Untersuchungen an den Überresten der Hunde haben ergeben, dass mindestens 13 Teilkadaver von Welpen und erwachsenen Hunden unterschiedlichen Phänotyps nach möglicher Röstung und Kadaverbearbeitung gemeinsam niedergelegt wurden. Durch die Bestätigung archäologischer, archäozoologischer, antiker Textdaten sowie ähnlicher Fälle von Hundebestattungen aus der römischen Welt erscheinen verschiedene Deutungen möglich. Es könnte sich um Reste ritueller Opfer für chthonische Gottheiten, um die Hinterlassenschaften einer Schlachtung oder um eine Kombination beider Praktiken handeln.

Résumé

Sacrifices de chiens dans l'Antiquité tardive ? Etude de cas de sépultures multiples de chiens dans l'amphithéâtre de *Viminacium*

Lors de fouilles menées dans l'arène de l'amphithéâtre abandonné de *Viminacium* (Serbie), dans le périmètre plus large de la nécropole romaine tardive, fut découverte une sépulture multiple de chiens datée de la 2e moitié du 4e siècle ap. J.-C. Les études archéozoologiques et taphonomiques des restes ont révélé qu'au moins 13 carcasses partielles de chiots et de chiens adultes appartenant à différents phénotypes furent enterrées au même moment après avoir peut-être été rôties et traitées. En comparant les données archéologiques, archéozoologiques et les sources écrites, ainsi que des cas similaires de sépultures de chiens dans le monde romain, on peut proposer plusieurs interprétations pour ce dépôt, allant de sacrifices rituels à des divinités chthoniennes jusqu'à l'abattage fonctionnel, ou une combinaison des deux.