

‘Garbage Archaeology Reloaded’ – An Interdisciplinary Approach to Animal Bones as Raw Material Supplier at the Roman Site of Carnuntum (Austria)

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Introduction

Beside written records, garbage represents one of the most important sources of information about everyday life in the Roman era. At that time, unlike today, objects and materials were usually discarded as garbage only if it did not make any sense or was impossible to recycle them.¹ For as long as possible a large proportion of the systemic material culture often remained in an active system to be used and transformed in various ways. Not only metal, stone or glass counted as precious and recyclable raw materials but animal remains also played an important role in this context: for instance in the production of needles or combs as well as the consumption of bone marrow as a source of food. For that reason if such objects are found in the course of archaeological investigations as garbage, they are considered archaeological material which has been intentionally transformed from a systemic context² (i.e. recyclable raw materials) into an archaeological one (‘garbage’). Therefore garbage provides an important source of information and has a huge impact on cultural-historical informative values.³

Animal bones as traces of human behaviour contain an immense amount of information to be used in various ways within archaeological research. At many excavation sites they present one large group of archaeological findings. In fact, animal remains from the archaeological record provide the opportunity to reconstruct not only dietary patterns but both common and specific human-animal relationships as well as economic production processes.⁴ The detailed study of animal bones in form of discarded material resulting from human activities may offer the opportunity to answer questions of their multiple functions and forces affecting single bones, resulting in a biography of the object itself.⁵

In addition to the zooarchaeological material, the knowledge of food and meat consumption in Roman times is based on various other sources such as written records⁶ and figurative representations.⁷ Together they offer comprehensive information for the research of livestock husbandry, the utilisation of animal remains and the preparation of meat dishes during the Roman era.

Zooarchaeological Investigations at 'Haus 2' in the Civilian City of Carnuntum

Researchers recognised the importance of the study of animal bones as a separate part of the archaeological record relatively late. At many excavations during the 19th and the first half of the 20th century animal bones, in contrast to human remains, were not appreciated as a very important source of data. That was the reason why many of the bones were simply thrown away without any detailed description often, usually not even numbered and accounted for.⁸ This situation started to change only in the second half of the 20th century. Today zooarchaeological studies are essential parts of archaeological studies and play an important role in various fields of archaeology.

This paper deals with the wide range of information offered by the zooarchaeological material on consumer behaviour and the handling of animal waste products. The systematic evaluation of a clearly defined case study is presented⁹ in detail. The area of interest of this investigation¹⁰ – discussed here briefly in the form of a preliminary report – is the ancient civilian city of Carnuntum, located at the present-day town Petronell-Carnuntum (Lower Austria). The investigation area is located in the open-air museum 'Archäologischer Park Römerstadt Carnuntum'¹¹ at the building unit 'Haus 2'.¹² The building complex has been almost completely excavated in the years 2003 to 2005. Five occupation phases, ranging from the late 1st century AD to the 4th century AD, have been reconstructed.¹³ The area covers approximately 930 m² and is located between the insulae 'Haus 1'¹⁴ and 'Haus 3'¹⁵ near the former ancient city border in the south of the Roman civilian city (fig. 1). The complex has been used both economically and residentially. With emphasis on the first two centuries AD there is evidence for various economic production processes, among others there are traces of a waste disposal site as well as a production site for clay bricks.¹⁶ For the later phases (from phase 4 in the end of the 2nd century AD onwards) it is possible to document a housing construction with traces of repeated structural reconstruction.

The zooarchaeological analysis of selected samples¹⁷ attempts to throw light on the consumption behaviour and the use of animal remains at this Roman site located at the *limes Pannonicus*. The aim of the ongoing investigation is therefore the analysis of the handling of waste in relation to the diverse deposition processes in the area of 'Haus 2'. Based on an interdisciplinary approach, the animal bones are evaluated using established methods, mainly macroscopic and quantitative analysis.¹⁸ Special attention is paid to slaughter practices and the handling of the resulting animal remains with regard to various economic aspects and associated production processes (fig. 2). The results of this zooarchaeological investigation are therefore analysed¹⁹ regarding²⁰ theories on site formation processes.²¹ The intention of this analysis is to gain a deeper insight into the economic activities in the area of 'Haus 2' by a synthesis of an archaeological feature biography and the find material composition,²² e.g. regarding the role of primary and secondary waste.²³ To do so, the spatio-temporal archaeological data sets

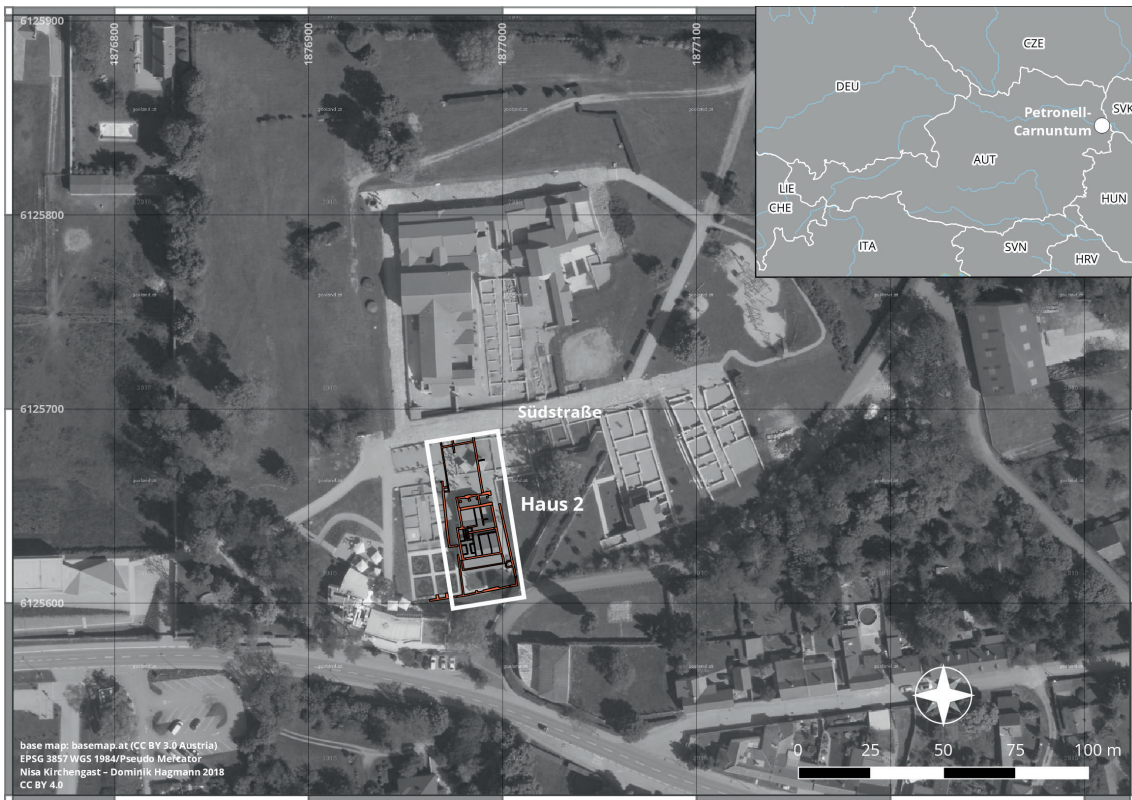


Fig. 1: Location of 'Haus 2' in the archaeological open air museum 'Römerstadt Carnuntum'.



Fig. 2: Cut marks on a cattle rib of 'Haus 2' in Carnuntum.

related to the site are permanently combined with the zooarchaeological record using a geographic information system.

As for the material analysed so far,²⁴ there is a large amount of slaughterhouse waste from typical Roman farm animals, especially cattle, sheep and pigs.²⁵ The current results of the investigation also suggest various techniques of meat production as well as possible weightings in consumer behaviour. The use of the animals as meat suppliers is evidenced by a variety of chop and cut marks on the skeletons from which certain further processing or preparation of the meat can be inferred. The use of the bone material for further processing, which is often followed by primary food production, can also be assumed for several samples from 'Haus 2'.

This factual and contextual analysis and interpretation of the zooarchaeological material is one of the key points of the current study and makes it possible to obtain a comprehensive picture of the zooarchaeological material, especially regarding its economic functions.

Summary and Outlook

The analysis of animal remains in the archaeological context of the ancient Roman civilian city of Carnuntum is to serve as an example for a feature-orientated interpretation of the zooarchaeological material within the context of an urban settlement. The mutual statements and additional information on the taphonomic processes between the formation of animal waste and its landfill can be more accurately determined by such an analysis. It presents an attempt to find contextual answers in archaeological-historical-cultural-scientific terms, based on a comprehensive interdisciplinary approach.

Notes

¹ Thüry 2001, 3f.

² See Schiffer 1972, 157.

³ Czeika et al. 2011, 70.

⁴ Benecke 1994, 11f.

⁵ See Deschler-Erb 2008; Schibler – Schmid 1989.

⁶ E.g. Columella, *de re rustica* or Varro, *res rusticae*.

⁷ See as an example Toyne et al. 1983, 11–23.

⁸ Peters 1998, 2f.

⁹ See already introduced in Kirchengast 2018. Another publication about this case study is currently in print.

¹⁰ This study is carried out in course of a master's thesis (Supervisor: Univ.-Prof. Dr. Günther Schörner, Co-Supervisor: Mag. Dr. Günther Karl Kunst) at the Department of Classical Archaeology at the Uni-

versity of Vienna. Currently, the investigations are still in progress. The preliminary results have been presented as a poster at the '17. Österreichischen Archäologentag' (Salzburg, February 2018) and at the '19th International Congress of Classical Archaeology' (Cologne/Bonn, May 2018).

¹¹ Römerstadt Carnuntum 2018.

¹² Humer – Konecny 2004.

¹³ The excavations of 'Haus 2' have been published in Baier et al. 2008a; the preliminary reports of the excavations are published in Humer – Konecny 2004; Humer et al. 2005b; Baier et al. 2006; the report on the archaeological finds of 'Haus 2' has been published in Behling et al. 2008.

¹⁴ Humer et al. 2005a.

¹⁵ Baier et al. 2008a.

¹⁶ Baier 2008, 28f.

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¹⁸ I.a. Schmid 1972; O'Connor 2003; Driesch 1976.

¹⁹ See LaMotta – Schiffer 1999; Marom – Bar-Oz 2013.

²⁰ See the methodical approach in Kunst 2002; and in Schmidig – Deschler-Erb 2015.

²¹ The considerations of this investigation are based on the concepts of Michael B. Schiffer: Schiffer 1972; Schiffer 1983; Schiffer 1987.

²² Cf. Kirchengast 2018.

²³ See Schiffer 1987, 58–64.

²⁴ At the time of writing this article (June 2018), around 30% of the sampled assemblage has been analysed yet.

²⁵ Peters 1998, 5.

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Fig. 1: Base map: basemap.at [CC BY 3.0 Austria], Nisa Kirchengast – Dominik Hagmann 2018.

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