REVIEWS & NOTICES

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Animal Husbandry in Iron Age Scania, with a Catalogue

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The Iron Age in south Scandinavia (*c.* 500 BCE and 1050 CE) brought about numerous changes, affecting the region in diverse ways. Animals undoubtedly played an important role in this dynamic period, but more research is needed to fully understand how the keeping and use of animals interacted with societal and environmental developments. The meat provisioning of settlements at the time largely relied on animal husbandry. Livestock also served as a source of renewable products such as milk, wool and draught power. However, this new summary by Macheridis illustrates a great diversity in the taxonomic composition of assemblages both in time and space. The main diachronic trend identified is a relatively sudden transition from an emphasis on cattle in the Early Iron Age, to the increasing use of pigs and also sheep at later settlements. The study shows that animal remains is of key

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importance in understanding underlaying environmental and social phenomena whose complex determined Iron Age life in southern Scandinavia.

Archaeozoology began in Denmark (Forchhammer et al. 1851–1856), at a time when archaeology emerged as a discipline hand-in-hand with zoology and geology (Kristiansen 2014:14; the latter being also carefully considered in this book). Following World War II, the earliest faunal reports in southern Sweden were published by Johannes Lepiksaar (1961), as a new generation of scholars gave momentum to the study of animal bones from archaeological sites across Europe. The book begins with a summary of reports on Iron Age animal remains in Scania from the 1960s until today, showing an upswing in activity from the 1990s onwards. Along with the professionalization of the archaeological sector, the increase of archeozoological reports intensified by the 1970s. Since then, osteological studies have been carried out at both research excavations and contract projects. The changing proportions between the different working conditions is neatly illustrated by Macheridis's overview of faunal specialists employed, comparing the numbers of those locally hired, externally commissioned or working in academia (p. 21, Figure 1). In spite of the broad basis of resulting publications, a review of the heterogeneous body of information concerning Iron Age animal husbandry has long been overdue.

In order to sharpen the focus on the practical aspects of animal exploitation, analyses in this work are limited to mundane food refuse, excluding special deposits, for example wetland assemblages and ritual contexts such as burials. As indicated in the title, the book also includes a catalogue, which offers a valuable empirical basis not only for this volume but also for future research.

The catalogue includes 130 Iron Age assemblages from Scania (as of 2020). Of these, 77 waste-related contexts from 58 settlements yielding at least 100 identifiable bone specimens (NISP) were used in detailed analyses. Throughout the book, the patterns produced by the analysis of Early and Late Iron Age animal remains are consistently reviewed in terms of spatial relevance and regional variation. The south-east and north-east of the study area could be contrasted as representing different Iron Age sociopolitical developments. However, mid-Scania was sparsely populated, yielding no faunal assemblages for comparison.

Even if recorded by different authors in different periods of research, there is both a need and a temptation to quantitatively analyze such a valuable body of data. However, inevitable compromises need to be made when summarizing the vast and diverse set of data accumulated over six decades. Limiting the number of variables considered decreases resolution. On the other hand, including too much, often scanty information could compromise the representative value of the study. A careful selection of criteria is

thus necessary in search for patterns on which the absence of consistent taphonomic information or inter-observer bias have a limited effect. Prior to analysis, Macheridis reviews the heterogeneous material in terms of three potential shortcomings of some 'old collections': lack of screening, contextual information and documentation (p. 45). The geological diversity of the studied region (especially soil pH) has also influenced the degree of post-depositional bone preservation as noted in the catalogue. Given the plethora of challenges, the circumspect evaluation of biasing factors could be a textbook example of thoughtful, critical consideration.

One may wonder, for example, whether a minimum of 100 identifiable bones per assemblage may be considered representative. As Iron Age materials in the area are dominated by the remains of livestock, this number is acceptable, although significant contributions by various wild animals could bias such small samples: their contributions may look inflated when studied in terms of percentages. A special value of the catalogue is that very small assemblages are also listed: even if unsuitable for synthetic, quantitative analyses, they do contribute to the overall picture.

Among domesticates, a typical dilemma is posed by the significant but difficult differentiation between the remains of sheep versus goats that relatively few analysts carry out on a regular basis. One in ten caprine bones (9.7%) have been identified as sheep or goat in the 77 analyzed assemblages (p. 49, Table 1). This could be the only case, when sample sizes may impact on taxonomic richness: the relatively rare goat remains have smaller probability to be manifested in small assemblages, even when the emphasis is laid on four key taxa of livestock – one of them being caprines (p. 46).

Decades of research have shown (Casteel & Grayson 1977; Gautier 1984; Lyman 2008) that the controversial calculation of minimum numbers of individuals (MNI; White 1953), heavily influenced by individual analysts, varies unpredictably between assemblages. This significant inter-observer bias renders them useless in meta-analyses. Therefore, they were not used (p. 47) as correspondence analysis was the method of choice in exploring the data set.

Roman Iron Age to Migration Period finds show a polarization between pig and horse remains (p. 58, Figure 9). A similar trend is less pronounced in the Migration–Vendel periods (p. 64, Figure 10). In these examples total variances may be influenced by the less than 10% contributions of horse and the increasing consumption of pork. Horses are intimately associated with social identity (such as aristocratic or military), thus having strong symbolic connotations. They probably best represent the contemporary recognition of domestic animals as sentient property, having emotions and playing social roles beyond their economic value (Frie 2021: 35). The overall contribution of horse to NISP reaches 10% only during the Late Bronze

Age–Pre-Roman Iron Age (1100–0 BCE). Otherwise horses played a negligible dietary role, even during the Vendel–Viking periods (p. 50, Figure 6). Whenever kept, they must have played more important roles than being merely sources of meat. On the other hand, pigs could have no secondary uses beyond pork production.

The Bronze Age to the Pre-Roman Iron Age assemblages show high frequencies of bovid bones relative to those of pig and horse. In the Roman Iron Age, bovid-based meat consumption turned to a focus on beef. However, a diachronic shift emerges towards a more evenly mixed system of meat provisioning. Compared to the Early Iron Age emphasis on beef, the increased consumption of pork and mutton is apparent. The author calls this phenomenon the 'triadic shift', that is the change to a balanced animal husbandry based on cattle, caprines (predominantly sheep), and pig. By the end of the Iron Age the triadic structure of animal husbandry seems firmly established. Notably, horses are no longer considered part of this picture. Nevertheless, a slightly higher abundance of horse bones seems to coincide with the emergence of upper social strata at Vendel–Viking period settlements: horsemeat remained important where the elites lived.

Macheridis convincingly argues for a multifactorial explanation behind these tendencies, including both environmental and societal developments. The long-lasting cold event and climate instability caused by volcanic eruptions beginning in 536 CE and the ensuing famine may well be responsible for a decline of settlements at the end of the Migration Period. This phenomenon also seems related to power struggles and concomitant social polarization in the region. Cattle-dominated traditional husbandry possibly also became untenable as increasing areas in the south and mid-west were devoted to cereal cultivation, limiting graze for resource intensive cattle herding. The increased importance of pigs seems related to the emergence of major central settlements as well as the possible symbolic significance of pork.

The 'triadic shift' took only a few Late Iron Age human generations (around the Migration and Vendel periods), marking a turn to a better balance between the three livestock species: cattle, sheep and pig. It must have resulted from the interplay between various processes, of which deteriorating climate was only one. Increasing pork consumption may also be related to the intensification of crop cultivation, whose by-products could be fed to pigs. The demand for wool must have increased with the emergence of sail manufacturing.

The analytical part of the book is an up-to-date complement to Jennbert's (2011) multidisciplinary study of Iron Age animal-human relationships, linking the archaeological material with osteological finds and Old Norse written sources in which animals are depicted as imaginative beings

with distinct characters. Jennbert discusses their functional, symbolic, and metaphorical roles. In comparison, the present book focuses on the osteological evidence of livestock. The attention paid to geology, natural and cultural geography as well as landscape, sets the stage for an emphatically archaeological, material-based analysis of animal remains.

In her book, Macheridis convincingly sets the stage for the evaluation of meat consumption at Iron Age settlements, a widely accepted proxy to animal husbandry. Interpretations pay careful attention to geology, natural and cultural geography. In spite of the tangible results, many of the issues articulated by the author require further research. The book thereby sets a standard to be observed in future zooarchaeological work within the context of multidisciplinary projects aimed at disentangling the roles of nature and society in shaping Iron Age history. It will also be a useful guide to anybody interested in the changing roles played by animals in times of accelerated environmental and/or social change.

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