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## Counting Roman chickens: Multidisciplinary approaches to human-chicken interactions in Roman Britain

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## ABSTRACT

This paper discusses some of the approaches and results from two multi-disciplinary projects. The first is the AHRC-funded 'Cultural and Scientific Perceptions of Human-Chicken Interactions' Project, which investigates the history of the exploitation of chickens in Europe. The second is the Leverhulme Trust-funded 'Rural Settlement of Roman Britain' Project, which has collated evidence from excavation reports from thousands of sites. This paper updates the evidence for the exploitation of chickens in Roman Britain, showing that there were significant variations in the abundance of chicken bones found on different types of settlement. There was also a modest increase in their abundance during the Roman period, suggesting chickens became slightly more frequent contributors to the diet, albeit still only a rare commodity. However, they continued to be frequently represented in graves, shrines and other ritual deposits. The paper also discusses evidence of egg production and avian osteopetrosis, demonstrating that when traditional zooarchaeological research is integrated with scientific analyses, a deeper understanding of past human diet (and other avian-human interactions) can be acquired.

### 1. Introduction

The history of the domestication and westward spread of the chicken or domestic fowl (*Gallus gallus domesticus*) out of Asia is currently the focus of much debate (Xiang et al., 2014, 2015; Perry-Gal et al., 2015; Peters et al., 2015; Eda et al., 2016; Pitt et al., 2016). However, the species does not appear to have spread across Europe prior to the late prehistoric period (Best et al., in prep. (b)). The earliest confirmed record for the presence of chickens in Britain is currently from the site of White Horse Stone in Kent where a femur provided a radiocarbon date of 770–390 cal BC with modelled dates of 560–390 cal BC (Kitch, 2006). However, chicken bones are rare finds in the pre-Roman period in Britain, being recorded in only around 30% of the Iron Age faunal assemblages from southern England, nearly always in very small numbers (Hambleton, 2008). Only on a few Late Iron Age (c. 100 BCE–AD43) sites in the south-east of England, where continental contact was more evident, did chickens appear in larger numbers (Maltby, 1997; Hambleton, 2008; Hamilton, 2000), despite the fact that images of chickens were depicted on coins minted in two areas of southern England during that period (Best et al., 2016; Feider, 2017). Indeed, the regular occurrence of partial or complete skeletons

of chickens along with Julius Caesar's (1917) frequently quoted, albeit enigmatic, observation from *De Bello Gallico* (book 5, ch.12) that the Britons kept chickens but did not eat them, has led to the very plausible contention that chickens were initially valued for some of their other qualities (such as exoticism, display of status, sport or deity association) rather than for food (Sykes, 2012).

Despite their recent introduction and continued presence in contexts associated with human burials and other ritual sites (King, 2005), chickens are often summarily dismissed in zooarchaeological reports of Romano-British assemblages merely as an unremarkable addition to the diet. A previous survey (Maltby, 1997) indicated that there is some evidence to suggest that chickens became more abundant during the Romano-British period but the potential complexity of production, distribution and consumption of chickens and their products in the diet was not fully explored. This potentially undervalues their impact, and their dismissal limits our understanding of their multiple roles. Two recent large multi-disciplinary research projects have provided opportunities to review the evidence for human-chicken relationships in more depth. The Arts and Humanities Research Council-funded 'Cultural and Scientific Perceptions of Human-Chicken Interactions' Project has brought together over 20 researchers from six universities to examine

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the social, cultural and environmental impact of chickens in Europe. This research has included the collation of zooarchaeological data from both published works and unpublished archives from all periods including the Roman era. In addition, innovative research has been carried out (inter alia) in analyses of metrical data, pathology, ancient DNA, stable isotopes, pottery residues, eggshells, ecology, material culture and anthropology associated with chickens. Meanwhile, the Leverhulme Trust-funded 'Rural Settlement of Roman Britain' Project has collated evidence from over 2500 excavated rural settlements in England and Wales, enabling a comprehensive reassessment of the countryside of Roman Britain (Smith et al., 2016). Over 1600 sites have produced animal bones, and counts of the bones of chickens and other species can be accessed via the wide-ranging online resource created by the project (Allen et al., 2016). A separate analysis of these data has also been undertaken to examine the economic significance of chickens amongst other domestic livestock in Late Iron Age and Roman Britain (Allen, 2017).

This paper will examine the evidence for an increase in importance of chickens as a source of food in Roman Britain, and whether there are variations in its abundance at different types of site and over time. It will also consider some other analyses that can be used to study the evolving relationships between humans and chickens in the western provinces of the Roman Empire.

## 2. Chicken abundance in Romano-British zooarchaeological samples

An initial survey into variability in the abundance of chickens from Romano-British archaeological sites was carried out by Maltby (1997). The sample consisted of 123 assemblages from 68 sites and compared data from military sites, major towns, nucleated settlements, villas and other rural settlements. Results suggested that chickens tended to be more common in assemblages from military sites and major towns, but the numbers of assemblages from some types of site rendered these conclusions tentative and precluded investigation of possible chronological variations. During the last 25 years, the number of assemblages has increased enormously, principally due to the considerable expansion of developer-funded archaeology in England and Wales since 1990, both on rural (Allen, 2017) and urban sites (Maltby, 2015), thus enabling a much more comprehensive survey to be undertaken.

### 2.1. Materials and methods

This survey will focus on comparing the abundance of chicken bones with those of sheep/goat. Some comparisons with the abundance of pigs will also be made. Whilst not the focus of this specific paper, wider comparison of the faunal dataset, including cattle, can be found in Table 1. Inter-site comparisons of species abundance are faced with a series of well-known challenges concerning differential identification, retrieval, preservation, quantification and deposition. With particular regard to chickens, it is not possible to distinguish all chicken bones from those of other galliforms such as pheasant (*Phasianus colchicus*) and guinea fowl (*Numida melagris*) via morphological and metrical analysis, but in Roman assemblages where such distinctions have been made, nearly all the diagnostic bones have been positively identified as chicken. It is therefore assumed that the vast majority, if not all, of the galliform bones recorded on these sites belonged to chickens.

Retrieval and preservation biases have long been recognised, and bones from small birds have a greater likelihood of being destroyed or overlooked during hand-excavation than the generally larger and more robust bones of mammal species. Unfortunately, many reports do not separate or list the bones recovered by sieving, or specify whether sieving has been undertaken at all. However, the great majority of the assemblages discussed here were derived entirely or predominantly from hand-collection and, with caution, can be compared. Where known, exceptions are noted in the text below to acknowledge the

potential bias towards increased numbers of bones from smaller animals at sites where environmental sampling has been undertaken. It is impossible, however, to fully assess whether all hand-collected assemblages were recovered with the same level of efficiency. Obviously, sheep and pigs are larger than chickens and there will still inevitably be some bias in recovery standards, but these will not be as marked as they would be in comparisons with larger mammals such as cattle and horse.

Quantification methods used by zooarchaeologists also vary. Most counts are derived from the total number of identified specimens (NISP). However, what constitutes a NISP count varies significantly. Some counts include vertebrae and ribs, whilst others do not; some zooarchaeologists count all identifiable limb bone fragments; others count only a selected suite of diagnostic elements. Another issue concerns the inclusion or exclusion of bones from partial or complete skeletons in the counts. Where known in this survey, counts exclude associated groups of bones but this was not feasible in every case. It is also quite common for urban sites, in particular, to include assemblages dominated by waste accumulated by the large-scale butchery of cattle (Hesse, 2011; Maltby, 2015), which is another reason why cattle have been excluded from this survey. To minimise problems created by small samples, a minimum NISP count of 50 sheep/goat and chicken elements for an assemblage was set.

Data for the rural settlements, including nucleated sites, were obtained from the Roman Rural Settlement Project database (Allen et al., 2016). Whilst the majority of assemblages from Roman rural settlements derive from comparatively recent developer-funded excavations, many of which having fairly standardised excavation and recovery techniques, the dataset also includes assemblages from research-based excavations and rescue excavations undertaken prior to 1990. It is beyond the scope of this paper to explore detailed temporal variations; however further details on specific assemblages and chronology can be found at: <http://archaeologydataservice.ac.uk/archives/view/romangl/>. Data for the assemblages from the major urban sites were obtained from Maltby (2010a, 276) and supplemented by data obtained from more recently reported assemblages. Data from military sites were gathered from unpublished and published reports.

### 2.2. Farmsteads and villages

Rural settlements were split into categories of farmsteads, villages, villas and roadside settlements based on the definitions set out by the Roman Rural Settlement Project (Allen and Smith, 2016). Many of the farmsteads could be further subdivided into unenclosed, enclosed or complex categories. As can be seen in Table 1, when all the assemblage NISPs for farmsteads and villages are combined, chickens account for only 0.5% of the key domestic food animals (cattle, sheep/goat, pig and chicken), and on average form just 1.8% of the combined chicken and sheep/goat NISPs. Breaking this down further, over 67% of the 436 assemblages from farmsteads produced either no chicken bones at all or < 1% of the total number of sheep/goat and chicken elements (Fig. 1). A further 26% had < 5% chicken. Of the few assemblages with unusually high percentages of chicken (> 15%), most had specific reasons to explain why they were so well represented (Table 2). In several cases, most or all of the chicken bones accompanied human burials; in others, they were derived from single contexts and were probably part of associated bone groups (ABGs) (Morris, 2010). In one case, they came from a site (Langdale Hale, Cambridgeshire) with evidence of industrial processing and specialist butchery – 'Romanised' traits more often encountered on larger nucleated sites where chicken bones have often been more commonly recovered.

Thirty-two assemblages came from sites categorised by the Roman Rural Settlement Project as villages—these sites are defined as nucleated rural settlements not associated with a major road (Allen and Smith, 2016). Of these, 18 (56%) contained < 1% chicken and 10 (31%) 1%–5% chicken of the total sheep/goat and chicken NISP counts. Three contained between 6% and 10% chicken and only one, a very

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