APPROACHES TO THE INVESTIGATION, ANALYSIS AND DISSEMINATION OF WORK ON ROMANO-BRITISH RURAL SETTLEMENTS AND LANDSCAPES
A REVIEW

PAPER 8: BURIALS AND OSTEOARCHAEOLOGY

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1. Introduction

1.1 In the burials of the rural dead we encounter deposits where the material traces of ritual and the biographies encoded in skeletal remains offer a mutually enriching analytical potential. A single burial may allow reconstruction both of an individual history and of the ways in which mourners expressed in material form their relationship to the deceased. While no two burial rituals are the same, through the aggregated burial evidence we may gain key insights into the structure of rural societies and different rural lifeways, varying, for example, according to gender, socio-economic status, local environment or cultural context. Human skeletal remains in particular are amongst the richest sources of archaeological evidence. During life, the skeleton is a dynamic living tissue, affected by the social and physical environment in which a person lives. New techniques of bioarchaeological analysis are developing apace, particularly biomolecular methods, which are yielding exciting new evidence for life and death in Roman Britain. In many respects, as we note below, our knowledge of the rural dead and their funerary rituals has been significantly extended since 1990. Nevertheless we argue that there is scope for transforming the excavation, analysis and reporting of burials of Roman date so as to achieve a better understanding of ritual process and, above all, for writing a rural demographic history. The latter is a major current research priority in the wider study of the ancient world, to which the skeletal data from rural Britain have an as yet largely unrealised potential to contribute.

1.2 Before suggesting changes to our current approach, it is important to acknowledge the transformation in knowledge of Roman rural burial in the last 25 years, achieved through development-led fieldwork within the PPG 16 and successor frameworks, combined with the publication of work from previous decades and complemented by research-led projects. Among the data collected by the Roman Rural Settlement Project (RRSP) for England, much of which is from fieldwork undertaken after 1990, 589 sites are classed as comprising or including a funerary site; the number of individual burials now totals many thousands, for example almost 9,000 rural burials from eastern England alone (SE England, E. England and E. Midlands combined; Smith 2013a; 2013b; 2013c). The transformation of the dataset however lies less in numbers alone than in the quality of data now available. The sample of well-studied human skeletal remains, cremated and inhumed, has grown significantly through the accumulation of published sites. Thanks in particular to work by Alex Smith and colleagues on the RRRSP dataset, developments in our understanding of rituals are clearly emerging. On a broader level, a simple narrative of cremation replaced by inhumation must now be discarded in favour of a complex regional mosaic of practices. The emergence of an archaeologically visible burial tradition during the Roman period is strikingly uneven. Even in south-east England, where Iron Age and early Roman burials are relatively common, the full population is far from fully represented (Pearce 2013a; 23-26). Further north and west, burials of early Roman date are more elusive, a product of a lesser intensity of fieldwork, acidic soils and the practice of archaeologically invisible burial rituals continued from the Iron Age (Pearce 2013a; Smith 2014a; 2014b). However, for those afforded an archaeologically visible burial, inhumation is a frequent and often majority ritual in all periods, especially outside south-east England (Booth forthcoming; Pearce 2013a; Smith 2013a-c; 2014a-b). Thanks to wider application of radiocarbon dating, the practice of unaccompanied extended inhumation can be shown to date from the 1st century AD, well into the post-Roman period. The Bradley Hill burials, some of which were re-dated to the 5th and 6th centuries AD,

exemplify this 'long' inhumation tradition (Gerrard 2011). Regional patterning in individual aspects of ritual is coming into more systematic focus, for example the distribution of prone, decapitated and flexed burial (e.g. Smith 2014a). The documentation of objects buried with the dead is the best established of all areas of research associated with the rural dead, as exhaustively mapped for burials published before *c*.1990 by Robert Philpott (1991) and now outlined for subsequently excavated burials in the RRSP project. For the most frequently documented artefact categories, especially ceramics, this has permitted nuanced studies which can only be enriched by the quantity of published data now accumulating from publication and grey literature related to rural burials, in part meeting the focus advocated for the study of Roman pottery (Willis 2004a: 12-13). These include province-wide studies of samian and regional studies of grave furnishing (e.g. Willis 2004b; Biddulph 2005). The vast scale of much fieldwork allows burials to be positioned much more clearly in relation to the houses, fields, trackways and barns with which they were interleaved in a rural landscape (e.g. Pearce 2013a: 95-109; Smith 2013c).

2. Excavation Priorities – Research Frameworks and Related Documents

2.1 The research framework documents available for Wales and the English regions (listed below) vary in the attention they pay to burial as a whole as well as to rural burial practice, but universally advocate a greater priority to be given to burial data in general and to rural burial in particular. Given that many documents were written some years ago, the scale of the rural dataset accumulated since 1990 is sometimes under-estimated, but nonetheless this emphasis is well-placed. The enduring bias to south-eastern and central England is entrenched in the work undertaken within the PPG 16 and successor frameworks. Even here the sample relative to urban and small town burial data remains small and the evidence from rural northern and western England, as well as from Wales and Scotland, is very limited. In the latter regions a large proportion of burial evidence derives from a just small number of sites, for example Tiddington, Warws., for W. Midlands or the two East Riding sites, Hayton and Rudstone Dale, Newable (both East Riding), for Yorkshire (Smith 2014a; 2014b) or from potentially atypical depositional contexts, for example cave sites in north-west England (Philpott and Brennand 2007: 68-69).

2.2 We assert that there are two areas where research frameworks for guiding excavation priorities can be extended. Burials are typically discussed in sections on ritual, but consideration of ritual tends to focus on the burial itself, the final interment, rather than the process from death to commemoration, many stages of which may leave material traces. Detailed recording of inhumed (e.g. position of skeletal elements) and cremated skeletal material (fragmentation, colour change) can yield evidence of funerary ritual (e.g. pyre technology, presence of a shroud) in addition to osteobiographical data (Duday 2009; Thompson 2015). The skeletal remains and the material evidence from the burial still tend to be considered separately in cemetery reports, when greater integration immeasurably enhances the value of both. In addition, greater priority needs to be given to any burnt and broken material associated with the burial, which may relate to ritual process, on which few data were available to previous syntheses. As well as ceramics, foodstuffs were the materials most frequently consumed in a burial ceremony and data pertaining to these and other objects placed with the dead on the pyre or at the grave-side have only gradually accumulated from their incidental occurrence among the cremated bone collected by mourners for burial. In comparison with neighbouring provinces, faunal and especially botanical data from food and fuel associated with funerary ritual remain limited, especially from the burnt residues of cremation ceremonies (van der Veen et al. 2008: 206-7). This is partly because less attention has been paid to 'non-burial' deposits of burnt (and unburnt) debris, whether from grave fills, other cut features or (in rare cases), surviving as surface spreads. Distinguishing between such deposits and burials proper can often not be done on the basis of field observations alone (Brickley and McKinley 2004: 9-10, with references; McKinley 2013; McKinley forthcoming; Pearce 2013a: 31-9.; Weekes 2008). In this respect we may contrast the fragmented work on cemeteries in Britain with a greater coherence in

data collection in France where a combination of a particular research focus on burial as a sacrificial sequence and an influential approach to fieldwork methodology ('archaeothanatology' – see below) have proven fruitful in the large scale analysis of ritual (e.g. Ancel 2012; Blaizot et al. 2009).

2.3 Full analysis of skeletal data has become a standard part of publication of rural burial sites. Over recent years there has been a push to standardise both the osteological methodologies used (e.g. age estimation techniques) and the reporting of data (e.g. prevalence rates of pathological lesions) (Brickley and McKinley 2004). Such standardisation is vital for robust and reliable inter-site comparisons and syntheses to be undertaken. However, inconsistencies in the publication of skeletal data from earlier site reports have undoubtedly inhibited a direct and detailed comparison of urban-rural health. Older skeletal reports (pre-1990s) are often of limited value and re-analysis of previously excavated skeletal data-sets have yielded new insights into temporal shifts in health and gendered differences (e.g. by Redfern et al. 2015 for Dorchester and its environs). In relation to human health, we note the lack of reference in the framework documents to the importance of infant burials, one of the commonest burial deposits to be documented from Roman rural sites, and often excavated in close association with domestic and working spaces (Millett and Gowland 2015). This perpetuates the long-noted marginalisation of infants and children (Scott 1990) and the fundamental insights into the wider health status of the communities that these remains provide (Gowland 2015).

3. Excavation

3.1 A number of guides exist which seek to optimise the information recovered during the excavation of funerary deposits and these need not be rehearsed here (e.g. McKinley and Roberts 1991). Excavation strategies should consider the scientific methodologies that will be conducted on the remains and adopt appropriate measures. For example, if DNA analysis is to be undertaken on the remains then steps should be taken to reduce contamination on those bones to be sampled. Recent studies have highlighted the utility of the human petrous bone (surrounding the inner ear) for optimum ancient DNA retrieval (Pinhasi et al., 2015). Palaeoparasitology is also an emerging field of study, providing important information on health, diet and hygiene practices in the Roman world (Mitchell 2016). Such analysis does require soil samples to be retrieved from the stomach region of the skeleton at excavation. Excavation of rural domestic and working spaces must be mindful of the likely presence of infant burials and be cautious of the ease with which such remains can be overlooked (Pearce 2015). For example the recovery of an unusually high number of infant (and animal) burials from buildings and yards from research-led excavations on rural sites in East Yorkshire is the product of a sampling strategy in which every feature initially classified as a post-hole was excavated (Millett and Gowland 2015: 176-9). The global impression too from the data collected by Pearce (2013a: ch. 6) and Smith (2014a-b; 2013a-c) is that adult burials occur not only in groups but also singly on settlement margins and, especially in the case of cremations, are less easily recognised in plan. Infant skeletal remains are difficult for the non-specialist to excavate and the soil fill of any graves should be retrieved and sieved in order to ensure retention of all skeletal elements.

3.2 In the usual absence of deep stratification, burials in a rural context are often compromised, ephemeral deposits, such as the remains of surface pyres or the residues from commemorative activity, which are especially prone to destruction. Graves themselves are also often damaged to a significant degree, however, where good preservation of skeletal remains applies, we might expect the survival of traces of multiple stages of ritual to be detectable in and around the burial. We can articulate this for both cremation and inhumation traditions.

3.3 First we emphasise the analytical potential of the burial itself, i.e. the deposit of human remains. As noted above, for cremation burials even highly sorted samples of human bone can include traces of fragmentary objects or foodstuffs burned on the pyre. Lab-based excavation of block-lifted cremated remains has potential both to inform the understanding of the collection of the remains of the dead and the modes of deposition of pyre remains (McKinley 2013; Duday 2009). Second, despite their susceptibility to truncation, other deposits, for example the residues of the pyre or commemorative activity may survive in situ or as redeposited material in the grave fill or other cut features in the vicinity of the grave. *Busta*, where the same pit both enhances pyre ventilations and serves to accommodate the burial are a special case where close attention to the burnt debris, both the composition (artefactual, botanical and faunal elements) and configuration, as well as soil interfaces yield unrivalled insights into the cremation process (McKinley forthcoming; Thompson et al. 2016). In neighbouring provinces, where preservation factors are similar, much greater evidence has been recovered for such rituals (Blaizot et al. 2009). Attention to these is not merely for the purpose of supplementing burial evidence, for it is not always straightforward to establish what is a grave and what is an ancillary deposit created during ritual process without careful excavation (see above).

3.4 As for inhumation burials, while it has long been common practice to record spatially the evidence for burial containers, objects placed with the dead, dress items, and grosser aspects of corporeal arrangement (e.g. the position of arms or legs), opportunities are currently missed to interpret ritual from skeletal configuration, especially where burials are recorded mainly through photography rather than drawing *in situ*. The quasi-forensic approach to the skeleton advocated by Henri Duday (2009) requires the close observation and documentation of the relationship and precise orientation of different skeletal elements, so as to be able to reconstruct the decay sequence of the corpse and, thus, the form of burial, including organic elements for which any indirect trace is long lost (e.g. presence of an organic pillow, coffin or shroud). This has been fruitfully applied to burials of infants as well as of adults (Duday 2009: section 6; Duday et al. 1995; the funerary studies collected in *Gallia* 69.2 offer Roman period examples). In occasional cases of localised anaerobic environments, especially those offered by lead and stone coffins, the opportunity for more detailed analysis or organic remains occurs (e.g. Alington Avenue, Dorchester: Davies et al. 2002: 133-35, 158-59).

4. Analysis and Dissemination

4.1 We flag here scientific analyses that merit wider consideration because of proven potential, though for an overview of the benefits of different techniques and sampling advice, the reader is directed to *Science and the Dead: A guideline for the destructive sampling of archaeological human remains* (http://www.archaeologyuk.org/apabe/pdf/Science_and_the_Dead.pdf). We have already referred to laboratory-based excavation of cremated human bones, a common standard in the analysis of cremation, but where supplementary steps might be taken in order to help the analysis of the deposit, e.g. computed tomography for understanding the positioning of bones within urns and the relationship between material objects and skeletal elements (Harvig 2015). For cremated bone, the examination of macroscopic changes can be integrated with advanced analysis of heat-induced change to the bone structure through FTIR spectroscopy and X-ray diffraction in order to assess burning intensity and pyre practices (Thompson et al. 2016). Finally, the utility of stable isotope analysis for human skeletal remains is well established, but what is less well known is that strontium isotope evidence can also be successfully retrieved from cremated bone (Snoeck et al. 2016).

4.2 We have referred above to the growing evidence from radiocarbon dating which reveals unaccompanied and (often) coffined inhumation to be distributed over a much longer time span than previously known. While this can be stated at a national level, understanding at a local level is much patchier and many inhumations remain poorly dated or their dating is

based on conventional examples. In south-west England and the Thames valley, this is established on the basis of samples taken for burials at many cemeteries; in this respect rural burials are better served than urban (Booth forthcoming; Gerrard 2011). Nonetheless in order for both the comprehension of burials at a site specific and regional level this should become a common future element of cemetery documentation.

4.3 Rural data are also lacking to compare to the growing evidence from urban cemeteries for diet from analyses of stable isotopes of carbon and nitrogen (Müldner 2013). Likewise the mobility patterns of those who were buried in rural cemeteries has been very little studied in comparison to their urban or even prehistoric or early medieval counterparts. The predominance of C4 cereals (e.g. millet or sorghum) in the plant diet of a 4th century individual from Gravesend, Kent, suggesting a life spent on the southern shores of the Mediterranean, though the strontium and oxygen stable isotope ratios were compatible with southern Britain, suggests the surprises that may await among such data (Pollard et al. 2011). The more recent application of high resolution isotope analysis of tooth dentine allows up to ten samples to be taken from a single tooth, thus providing biographical information pertaining to dietary shifts and/or mobility for the sampled individual. This technique facilitates the construction of osteobiographical data, allowing longitudinal data to be retrieved from individuals (Beaumont et al., 2013, 2015a, b; Montgomery et al., 2013).

4.4 While the utility of oxygen and strontium isotopes for studies of the Roman world have been well established, studies by Montgomery et al. (2010) and Shaw et al. (2016) on skeletons from Roman London have demonstrated the importance of lead isotopes. Although expensive and complex to interpret, the analysis of lead provides complementary and additional information for establishing likely place of origin. Lead concentrations within teeth may also be retrieved, providing data on childhood levels in relation to questions such as lifestyle, diet and health.

4.5 Recent work by Brettell and her collaborators (2015) applying gas chromatography-mass spectrometry has identified evidence for the use of aromatic resins in cremation and inhumation rituals from Britain in the 2nd to 4th centuries AD. This analysis allows new insights into previously ‘invisible’ aspects of funerary ritual. Such analysis is much more likely to be effective if allowed for in advance in relation to the recovery, and especially cleaning, of skeletal material.

4.6 Finally we comment on dissemination. Guidelines for the excavation and post-excavation analysis and publication of skeletal remains are well established (Buikstra and Ubelaker 1994; Brickley and McKinley 2004; Roberts 2009). Yet despite the growing dataset, the incompatibilities in the publication of summary skeletal data have inhibited a direct and detailed comparison of urban-rural health through osteological indicators. This is particularly problematic with aspects of osteological analysis such as age estimation and the recording and calculation of prevalence of pathological lesions. The continuing dependence on print publication or on digital publication in print-like modes (e.g. pdf) makes it very difficult to exploit the potential of ‘big data’ to study the health and life experiences of those in the countryside. Open access data-bases of skeletal information (e.g., similar to the Wellcome Osteological Research Database (WORD) at the Museum of London) would be highly beneficial to studies of health in Roman Britain. As uptake of the WORD database demonstrates, it would undoubtedly result in a proliferation of analyses of Roman demography, health and funerary ritual.

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