Osteological Analysis of the Cremated Bone from Roman Road, near Stretton Sugwas, Herefordshire

A report for Worcestershire Historic Environment and Archaeology Service

May 2005
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Project: PJ 140
1. Introduction

This report contains the results of the osteological analysis of the cremated bone recovered during the excavation of an evaluation trench, conducted as part of a programme of archaeological investigations at Roman Road, Herefordshire (Site Code HSM 37314). The excavation was carried out by Worcestershire Historic Environment and Archaeology Service as part of an ongoing evaluation project, for which a report is under construction (Vaughan et al., forthcoming).

Three deposits of cremated bone, referred to as contexts [1008], [1010] and [1012] were excavated, each from a small, irregular depression or pit cut into the silted over Roman Road surface. Some of the deposits appear to have been disturbed by post-depositional activity. Neither any evidence of associated urns nor substantial evidence of pyre debris was recovered, although the fill of the three deposits contained a concentration of charcoal flecking. No direct dating evidence was recovered.

The osteological analysis aims to provide a detailed description of the nature of the cremated bone present, to quantify and differentiate, where possible, between animal and human cremated bone, to assess the age, sex and presence of pathological changes and to identify any evidence of pyre technology used during the cremation process.

1. Methods and Process

The cremated material was analysed according to the standards laid out in the guidelines recommended by the British Association of Biological Anthropologists and Osteologists in conjunction with the IFA (Guidelines to the Standards for Recording Human Remains, Brickley and McKinley (eds) 2004) as well as by English Heritage (Human Bones from Archaeological Sites: Guidelines for producing assessment documents and analytical reports, Centre for Archaeology Guidelines, 2002).

- The material was analysed macroscopically and where necessary with the aid of a magnifying glass for identification purposes.
- The material was sorted into three fractions of 10mm, 5mm and 2mm using UKAS accredited calibrated sieves.
- The material was weighed using calibrated digital scales to an accuracy of 0.1g.
- The material was analysed without prior knowledge of associated artefacts.
- The material was recorded on sheets provided in Appendix A.
2.1. **Reasons for the Analysis**

Osteological analysis was carried out to ascertain:

- The type of deposit
- Total weight of the bone
- Identification and quantification of human bone
- Demographic data
- Pathology data
- Degree of fragmentation
- Efficiency of the cremation
- Presence and type of pyre goods
- Presence and type of pyre debris

1. **Type of Deposit and Disturbance**

3.1. **Introduction**

Recording of the type of deposit of cremated bone is necessary to make fair comparisons between different deposits from across a site, between one site and another and between cremated bone deposits from different historical contexts. Recording the type of deposit allows inferences to be made about the state of preservation of the material interred and how this may have affected bone content and fragmentation. This information is essential for accurate analysis of cremation processes due to diagnostic analytical techniques being based upon the weight and size of bone fragments present.

3.2. **Observations**

The nature of the deposit of the cremated bone was assessed during field excavation and recorded on the relevant context sheets. This information was subsequently classified according to the categories suggested by McKinley (2004) and recorded on the sheets contained in Appendix A.

3.3. **Results**

The features containing the cremated bone from contexts [1008] and [1010] was observed to have been badly disturbed through plough damage or machining.

Context [1012] was recorded as having been slightly disturbed although the topsoil sealing the feature was relatively deep.
No evidence from any of the excavated deposits was recovered suggesting that the interred bone had been originally contained in an urn. All the contexts were described as having been irregular and shallow. Context [1008] is recorded as having contained a concentration of charcoal flecking and that only occasional flecking was observed in the vicinity of this feature. This suggests that the features containing the cremated bone were originally excavated intentionally for the purpose of depositing the bone but that post-depositional activity, such as ploughing, has heavily truncated and disturbed these features.

4. Identification and Quantification of Cremated Bone

4.1 Introduction

Cremated bone deposits have been found on frequent occasions to contain both human and animal bone remains. Often, particularly if the bone fragments are very small, it is not possible to identify whether bone is categorically human or animal. However, it is clear from the analysis of cremated bone deposits that the deposition of both types of bone together is intentional and, therefore, it is imperative to approach the assessment of the cremated bone present holistically, as well as to attempt to identify human and animal elements.

An assessment of the quantity of bone recovered may give an indication of the state of preservation of the associated feature in which the bone was interred or, if recovered from relatively undisturbed context, may provide valuable information regarding cremation processes. This may relate not only to the actual pyre technology itself but also to the collection and ritual deposition of bone after the process was complete. McKinley (1993) found that modern cremation processes resulted in the production of between 1227.4g and 3001.3g of bone. From this she inferred that the cremation of a whole body and deposition of the remains in an archaeological context would realistically produce between 1001.5g and 2422g of cremated human bone.

Identification of particular elements of the human body serve to confirm the presence of human material and also may give an insight into any particular areas of the body which may have been purposefully collected following cremation. The absence of elements, especially those that are smaller, may be due to the lack of their survival as a result of fragmentation during the cremation, post-depositional preservation conditions or may be due to their loss during the cremation itself.

4.2 Observations

The total amount of bone present in each context was weighed and subsequently analysed for identifiable fragments. These fragments were then weighed and recorded separately according the area of the body they originated from. Full quantification of bone is given in the recording sheets in Appendix A.
4.3 Results

The table below summarises the results of the quantification analysis:

<table>
<thead>
<tr>
<th>Context</th>
<th>1008</th>
<th>1010</th>
<th>1012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Weight of Cremated Materials (g)</td>
<td>80.6</td>
<td>0.5</td>
<td>112.8</td>
</tr>
<tr>
<td>Total Weight of Identifiable Human Fragments (g)</td>
<td>2.0 + 2.2?</td>
<td>0</td>
<td>1.3?</td>
</tr>
<tr>
<td>Minimum Number of Individuals</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

The content of the bone from each context varied but was consistently well below (a maximum of approximately 10%) the amount that would be expected had the cremated bone of a whole body been deposited. This is especially true when considering the amount of animal bone present (see Section 9 – Presence and Type of Pyre Goods). It is likely that this is due to the badly disturbed nature of the deposits of contexts [1008] and [1010]. This may also be the case of context [1012]; although there were no obvious signs of disturbance of the feature, it was felt that the irregular nature of the cut of the feature may have been the result of post-depositional disturbance.

Only context [1008] produced bone fragments that could be identified as definitely being human. Context [1008] contained one mastoid process, two rib fragments, one probable radial head. In addition, two fragments of unfused long bone diaphysis weighing 2.2g were recovered and from their trabecular structure it was deduced that these were probably human.

Context [1012] contained fragments that were considered to be probably human: one fragment of cervical vertebra and five fragments of joint surfaces, including that of a distal end of a proximal phalanx, either foot or hand, one proximal end of a proximal foot phalanx. The others joint surface fragments are unidentifiable but may belong to the larger joint surfaces of the long bones. In addition, one other possibly human bone was found – a complete neonate 1st metatarsal. This bone was unburnt and it is unclear due to the post-depositional disturbance of the feature if this bone is intrusive to the original deposit. If it is not, the nature of the possible human skeletal material recovered suggests that the remains of at least two individuals were contained in this pit. Overall, the very small proportion of identifiable human fragments may reflect the recovery the post-depositional disturbance to these contexts or bone fragmentation (see Section 7).

No identifiable human fragments, definite or probable, were recovered from context [1010].
4. Demographic Data

5.1 Introduction

Demographic data recorded from human cremated bone gives an indication as to the age and sex of the individual. This information is derived from the macroscopic examination and metric assessment sexually dimorphic elements (e.g. Gejvall 1981, Van Vark (1975) and Whal (1982) as well as analysis of dental and bone development recommended by Buikstra and Ubelaker (1994). A large sample of well-preserved cremated bone deposits can provide a valuable insight into the demographic structure of the archaeological population and also into any ethnocentric funerary practices associated with the age and sex of the individual cremated.

5.2 Observations

Observations of material present and any indicators of age and sex were noted on the recording sheets contained in Appendix A. No fragments present were large enough to allow metric assessments to be undertaken so any observations were based upon morphological features.

5.3 Results

Age

Context [1008] contained two fragments of unidentified long bone diaphysis that was unfused as well as the distal portion of the left mastoid process. This appeared to be quite gracile in morphology. The unfused diaphysis indicates that the individual represented by these remains was either an older juvenile or adolescent (approximately 10 -18). The gracile nature of the mastoid process may reflect the younger age of the individual represented by these remains.

No definite conclusions could be drawn from the evidence presented by context [1012] since it was not possible to positively identify the remains as definitely human. However, those that were possibly human were contained one neonate (36-42 weeks) element (1st metatarsal unburnt) as well as material that would have belonged to a considerably older individual.

Contexts [1010] contained no elements that could be analysed macroscopically to ascertain the age of this individual.

Sex

Context [1008] contained remains that were likely to be juvenile and, therefore, no sex could be ascribed to this individual.

No elements were present in contexts [1010] or [1012] that could be assessed for indications of the sex of these individuals.
5. Pathology Data

6.1 Introduction

Palaeopathology is the study of diseases of past peoples and can be used to infer the health status of groups of individuals within a population as well as indicate the overall success of the adaptation of a population to its surrounding environment. Pathologies are categorised according to their aetiologies; e.g. congenital, metabolic, infectious, traumatic, neoplastic etc. Any pathological modifications to the bone are described. The size and location of any lesion is also noted. Pathology data is usually restricted, however, by intrinsic nature of cremated bone, although if fragment size is large enough, pathological changes may be observed.

6.2 Observations

Observations were recorded on the sheets provided in Appendix A.

6.3 Results

No pathological changes were observed in any of the contexts. This is mainly due to the small size of the fragments recovered from the deposits (see Section 7 – Bone Fragmentation).

7. Bone Fragmentation

7.1 Introduction

The observation and quantification of bone fragmentation is essential in assessing its impact on the quality of the overall data retrieved from the analysis of cremated bone. It may also be an indicator of practices carried out during the cremation process and give insight into pyre technology. Fragmentation of bone is assessed by sorting all bone fragments into three sieve fractions (10mm, 5mm and 2mm) and comparing the proportion of bone in each fraction (McKinley 2004). Measurement of the maximum bone fragment length is also recorded.

The fragmentation of bone can occur for several reasons, i.e. from the raking of the remains during the cremation process, the collection and the subsequent interment of the remains, making it difficult to assess whether bone was deliberately fragmented as part of the cremation ritual (McKinley 1994b). It is, however, generally believed that both the excavation and post-excavation processes can lead to the largest amount of damage caused to the remains (Lange et al 1997, McKinley 1994b).

7.2 Observations

Observations of the weight of bone present in each sieve fraction and the percentage of each fraction of the total weight of bone were recorded on the sheets provided in Appendix A.
7.3 Results

The tables below summarises the results of the quantification of cremated bone present by sieve fraction weight and percentage of total weight:

<table>
<thead>
<tr>
<th>Context</th>
<th>1008</th>
<th>1010</th>
<th>1012</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;10mm Weight (g)</td>
<td>12.6</td>
<td>0</td>
<td>23.2</td>
</tr>
<tr>
<td>&gt;10mm Percentage of Total</td>
<td>15.6%</td>
<td>0</td>
<td>21%</td>
</tr>
<tr>
<td>&gt;5mm Weight (g)</td>
<td>44.6</td>
<td>0.2</td>
<td>62.4</td>
</tr>
<tr>
<td>&gt;5mm Percentage of Total</td>
<td>55.3%</td>
<td>40</td>
<td>55.3%</td>
</tr>
<tr>
<td>&gt;2mm Weight (g)</td>
<td>21.9</td>
<td>0.2</td>
<td>25.5</td>
</tr>
<tr>
<td>&gt;2mm Percentage of Total</td>
<td>27.2%</td>
<td>40</td>
<td>22.6%</td>
</tr>
<tr>
<td>Assessment of Bone Content Percentage &lt;2mm residue</td>
<td>98%</td>
<td>90%</td>
<td>80%</td>
</tr>
</tbody>
</table>

These results indicate that between 77.9% and 82.5% of the cremated bone recovered from contexts [1008], [1010] and [1012] was less than 10mm in size. Although the maximum fragment size was between 30.4mm and 55.9mm, only a small percentage of the bone present was of this size. There was evidence of post-depositional fragmentation of one piece of bone, as two pieces were identified as originally having been one piece and the break was of the bone was sharp. The vast majority of the bone, however, was rounded and indicated that the degree of bone fragmentation observed may have been present at the time of deposition. This may, therefore, have been the result of the cremation processed employed. However, it must be remembered that these deposits have been truncated and it is difficult to assess the impact of ancient post-depositional disturbance on the fragmentation of bone in-situ.

8. Efficiency of the Cremation

8.1 Introduction

Effective cremation of a human body requires basically two elements: burning at high temperatures and a sufficient length of time of the application of this heat. Differences in temperature and length of time of exposure will result in variation in how the bone is burned. Complete burning will result in complete oxidation of the organic element of bone, leaving the mineral portion remaining (McKinley 1994a, Lange et al 1987).

Holden et al. (1995a and 1995b) reports that generally, the range of colours seen in burnt bone relates to the temperature to which the bone was exposed:

- Brown/Orange = Unburnt
- Black = Charred (c.300°C)
Blue/Grey  = Incompletey Oxidised (c.600°)
White   = Completely Oxidised (>600°)

The colour may vary from bone to bone as different elements of the body may be exposed to different temperatures for different lengths of time. It is, therefore, essential to record any differences in colouration according to skeletal elements affected and to the aspect of the element (i.e. interior, exterior) affected. The extent of the burning or oxidation of the bone represents the relative success of the cremation processed applied and contemporary knowledge of pyre technology.

Observations of dehydration of the bone should also be recorded. Shrinkage of bone due to dehydration can amount to a 25-30% decrease in cross-section width and accordingly approximately a 5% decrease in length (Lange et al. 1987). Evidence of dehydration presents itself on the bone fragments in the form of fissuring, transverse, concentric and parabolic cracking, especially on articular surfaces of long bones and cranial vault fragments (Lange et al. 1987, McKinley 1994a). These are generally interpreted as occurring due to the result of cremating the bone when soft tissue was still present on the bone.

8.2 Observations

Observations were noted on the recording sheets contained in Appendix A. Generally, the bone was observed to be white in colour but some variation was noted. Contexts [1008] and [1012] were found to contain unburnt bone, context [1012] contained some black, charred bone whilst all the contexts contained some blue-grey, incompletely oxidised bone fragments. Observations regarding dehydration of the bone were also noted.

8.3 Results

The results of the analysis of colour variation in the fragments of bone indicate that all three deposits contained bone that had been exposed to heat at a sufficient temperature (i.e. above 600°) for a sustained amount of time in order to completely oxidise the bone. The presence of blue/grey bone amongst completely oxidised bone is common. This was generally present along the internal surface, or in the cancellous bone, of long bones that were identified as being animal bones, generally denser than human bones. This may indicate that this more robust bone was exposed to high enough temperatures to oxidise the outside of the bone (or cortical bone) but not for long enough for the internal surface of the bone to oxidise (Murray et al. 1993). This may well also be the case of the back, charred animal remains found in context [1012], some of which were observed to also exhibit blue/grey shades of colour.

The presence of both unburnt bone in contexts [1008] and [1012] may well represent an event separate to the main cremation process. Analysis of this bone indicates that the vast majority of this bone is animal and is discussed below in Section 9 – Presence and Type of Pyre Goods.

The lack of the presence of unburnt bone contained in context [1010] is due to the relative lack of recovery of bone overall. It is, of course, possible that this deposit may originally have contained unburnt bone also.

Fissuring and transverse cracking was present on several of the elements contained in all contexts. This indicates that soft tissue was present on the bone when it was cremated.
9. Presence and Type of Pyre Goods

9.1 Introduction

Pyre goods are those items that were placed on the pyre and have been deliberately included for interment along with the cremated human bone. These can consist of objects manufactured from glass, ivory or metal, for example, which may have formed items of personal adornment. Metal items may only leave a trace of their presence in the form of staining on the bone, especially those manufactured from copper alloys.

It is most common for animal bone to be included with deposits of human bone (e.g. Wells, C 1960). It is generally perceived that these represent animal sacrifice or food offerings to the dead (McKinley 1994, Bond 1994). Williams (2005) has suggested, furthermore, that the deliberate admixture of animal and human cremated remains is deeply significant and may be associated with shamanistic rituals often observed ethnographically whereby not only can animals symbolically represent totemic ancestor lineages and but also both human and animal beings are seen to dynamically and mutually co-exist: “Animals were more than symbols of identity but agents of transformation, enabling the dead to be reconstituted into a new social status in death.” (Williams 2005).

9.2 Observations

Observations regarding the identification, quantification and percentage of identifiable animal bone present were recorded on sheets contained in Appendix A. Context [1008] contained a small piece of possibly worked quartz stone or glass. Contexts [1008] and [1012] both contained significant quantities of animal bone (25.8% and 50% respectively).

9.3 Results

The identifiable animal bone that was present in contexts [1008] and [1012] was demonstrated to compose a significant part of the total amount of bone present.

Context [1008] contained the remains of a bovid premolar, the long bone and vertebrae of a bird (possibly chicken), a rib fragment that belonged either to a small mammal or bird and a rib fragment, possibly sheep/goat, exhibiting butchery marks. Several unidentified animal bone fragments were also recovered.

Context [1010] contained no identifiable animal bone due to the very small amount of bone recovered from this context.

Context [1012] contained a fragment of scapula, rib fragments and a complete carpal from a medium sized dog as well as several unidentified fragments of animal bone.

The fragment of oxidised animal bone rib (possibly sheep/goat) from context [1008] was observed to exhibit two peri-mortem chop marks and two parallel slicing marks, indicating that at least some of the bone included in the cremation ritual had been butchered (see Figure 1 below). It is, therefore, likely that at least some of the bones have been placed on the pyre after the bone was stripped of meat. Ibn Fadlan’s contemporary account of Viking cremations (Broendsted 1965), for example, reveals that the dead were often cremated with their pets and that pieces of meat from sheep, goats or pigs were placed by the head as a food offering. This
may be the explanation for the presence of this bone in this deposit. Alternatively, the bone may have been the remnants of funeral feasting.

From contexts [1008] and [1012], the animal bone also consisted of two different types – burnt and unburnt. The presence of unburnt bone in both contexts [1008] and [1012] may well represent an event separate to the main cremation process. It is a possibility that the bone has become unintentionally redeposited through post-depositional disturbance or that unburnt remains were placed deliberately in the pit with the burnt remains as part of an inhumation rite. It is also true that these bones may have been present on the cremation pyre but did not get burnt.

The lack of the presence of unburnt bone contained in context [1010] is due to the relative lack of recovery of bone overall. Originally, this deposit may also have contained unburnt bone.

![Figure 1: Cremated animal rib fragment from context [1008] exhibiting butchery marks (scale cm).](image)

**10. Presence and Type of Pyre Debris**

**10.1 Introduction**

The presence and type of pyre debris is analysed in order to ascertain the nature of pyre technology and can be used to provide an insight into the type of deposit. Recent experimental reconstructions of pyre sites have determined that distinct features and types of debris can be
left by former pyre sites and in particular that the use of different materials alters the type and form of deposit (Marshall 2005).

### 10.2 Observations

Observations regarding presence, quantity and type of pyre debris were made and recorded on sheets contained in Appendix A.

### 10.3 Results

Only one the contexts, [1008] produced any pyre debris. This was a very small amount of debris that was likely to have been fragments of fuel ash slag. The relative lack of pyre debris allowed no inferences to be made regarding pyre technology. However, it confirms the notion that these features contained deliberate inhumation of cremated bone rather than being used to redeposit pyre debris.

### 11. Conclusion

*The table below summarises the findings of the osteological analysis of cremated bone deposits [1008], [1010] and [1012]:*

<table>
<thead>
<tr>
<th></th>
<th>[1008]</th>
<th>[1010]</th>
<th>[1012]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of deposit</strong></td>
<td>Unurned Burial</td>
<td>Unurned Burial</td>
<td>Unurned Burial</td>
</tr>
<tr>
<td></td>
<td>Badly Disturbed</td>
<td>Badly Disturbed</td>
<td>Slightly Disturbed</td>
</tr>
<tr>
<td><strong>Total weight of cremated materials</strong></td>
<td>80.6g</td>
<td>0.5g</td>
<td>112.8g</td>
</tr>
<tr>
<td><strong>Quantification of bone</strong></td>
<td>Cremated Bone: 59.8g</td>
<td>Cremated Bone:0.5g</td>
<td>Cremated Bone:56.3g</td>
</tr>
<tr>
<td></td>
<td>2g Definite Human, 2.2g Possible Human</td>
<td>0g Definite Human</td>
<td>1.3g Possible Human</td>
</tr>
<tr>
<td><strong>Minimum Number of Individuals</strong></td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Demographic data: Age</strong></td>
<td>Older Juvenile/Adolescent</td>
<td>Unobservable</td>
<td>Possible Neonate + Possible Adult</td>
</tr>
<tr>
<td><strong>Demographic data: Sex</strong></td>
<td>Unobservable</td>
<td>Unobservable</td>
<td>Unobservable</td>
</tr>
<tr>
<td>Pathology data</td>
<td>Unobservable</td>
<td>Unobservable</td>
<td>Unobservable</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Maximum Fragment Size</strong></td>
<td>30.4mm</td>
<td>8.8mm</td>
<td>55.9mm</td>
</tr>
<tr>
<td><strong>Degree of fragmentation – average fragment size</strong></td>
<td>10mm</td>
<td>2mm</td>
<td>10mm</td>
</tr>
<tr>
<td><strong>Efficiency of the cremation</strong></td>
<td>Overall colour: White Brown Orange &amp; Blue Grey (10%)</td>
<td>Overall colour: White Blue/Grey (10%)</td>
<td>Overall Colour: White Black &amp; Orange Brown (20%)</td>
</tr>
<tr>
<td><strong>Presence and type of pyre goods</strong></td>
<td>Pyre Goods: 20.8g Small fragment of worked quartz/glass. Chicken(?), butchered sheep/goat (?) and other animal bone</td>
<td>Pyre Goods:&lt;0.1g Animal Bone</td>
<td>Pyre Goods: 56.5g Medium-sized Dog and other animal bone</td>
</tr>
<tr>
<td><strong>Presence and type of pyre debris</strong></td>
<td>Fuel Ash Slag? &lt;1mm</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

The osteoarchaeological analysis of the cremated bone recovered from three contexts [1008], [1010] and [1012] revealed that one of the deposits contained definite human skeletal remains, one contained remains that were likely to be human and the other contained insufficient material for firm conclusions to be drawn. All three deposits were considered to have been disturbed and as a result only a very small amount of bone was recovered from each deposit. The lack of pyre material present in each deposit indicated that these features contained intentional deposits of cremated bone rather than redeposited material. If this is the case, then the material present appears to have been well sorted and carefully collected. In all three cases the majority of the bone has been fully oxidised and therefore appears to have been burnt to a temperature of at least 600°. Unburnt material was also present in two of the contexts and it is unclear whether this material is intrusive.

Context [1008] contains the remains of an older juvenile or adolescent human whose cremated remains were interred with a fragment of worked glass or quartz and the remains of a cremated bird, possibly a chicken, as well as a butchered animal, likely to have been a sheep or goat. Other cremated and unburnt material was present, including an unburnt fragment of a bovid premolar.

Context [1010] contains very little bone, prohibiting any detailed analysis of the remains.

Context [1012] appears to contain material that is possibly human. These remains are those of at least two individuals, one being neonate. Again, a relatively substantial amount of
animal remains were recovered from this feature including several skeletal elements belonging to a medium-sized dog.

Although the analysis of the bone has been limited by the relative lack of material, the material that is present raises many questions regarding the nature of these deposits and funerary rites in Worcestershire:

- What is the date of these cremated human bone deposits? Are they post-Roman?
- Are these deposits part of a larger cemetery that would be revealed by further excavation?
- What is the significance of the relatively large quantity of animal bone placed in with the human material?
- Why is some of the bone fully oxidised and yet some not burnt at all? Can we be sure this material is not intrusive? If some of the unburnt material is human Does this give us an insight into contemporary funerary practices; is this the result incomplete cremation of the body or does it represent intrusive interred (i.e. uncremated) material?
- How do the finds from this evaluation compare with other cremated bone deposits in the area?

The evidence presented by this analysis suggests that pyre technology used in the cremation of these remains was well understood and the deposition of both human and animal remains without any pyre debris was a careful process of deep symbolic significance. It is possible that the presence of specific animal species is especially meaningful in their cultural context (for example, it is though that more dog remains are more commonly found in cremated Anglo-Saxon deposits though the reasons for this are not yet clear (McKinley 2005, pers. comm.) and that the presence of butchered remains and unburnt bone possibly represents different aspects of funerary rites accompanying the deposition of cremated human bone. It is clear that further research and the recovery of more comparable material would allow a deeper understanding and greater insight into burial practices in Worcestershire of this nature to be reached.

12. Acknowledgements

Mercian Archaeology would like to thank Gaynor Western and Tania Kausmally for carrying out the osteological analysis. Thanks are also due to Liz Pearson and Tom Vaughan of Worcestershire Archaeological Service.
### REFERENCES

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### THE ARCHIVE

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<td>Bone Fragment Analysis Recording Form</td>
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