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FULL ANALYSIS OF HUMAN REMAINS FROM FIELD 246 OF THE A1 WIDENING SCHEME

Introduction

In 2015, eight features containing burnt bone were identified during excavations by Northern Archaeological Associates in Field 246 (Appendix, Table 1). During analysis, six of these contexts were identified as most likely being burnt animal bone, with two of these contexts being related to a possible oven/hearth. These contexts were therefore excluded from further analysis. The remaining two contexts also contained very small quantities of bone and no distinctly human fragments were identified during analysis, therefore despite their inclusion within the remainder of the report it must be acknowledged that they too may be animal bone assemblages. The extensive evidence within Field 246 for it being a settlement site makes all the contexts being animal bone more likely.

Objectives

The skeletal assessment aimed to determine age and sex, as well as any manifestations of disease from which the individuals may have suffered. Additionally, information was sought regarding the cremation techniques. Summary data for the possible cremated bone can be found in the Appendix, in Table 2.

Methodology

The cremated bone was sieved through a stack of sieves; with 10mm, 5mm and 2mm mesh sizes. The bone recovered from each sieve was weighed and sorted into identifiable and non-identifiable bone. The identifiable bone was divided into five categories: skull, axial (excluding the skull), upper limb, lower limb and long bone (unidentifiable as to the limb). All identifiable groups of bone were weighed and described in detail.

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human remains is assessed subjectively, depending on the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone erosion and very few or no post-

depositional breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The possible cremated bone from Field 246 was in a moderate to poor state of preservation, exhibiting minimal post-mortem breakage, retention of surface detail on larger fragments, and abrasion/blunting of fragment edges.

The fragment size of cremated bone is frequently attributed to post-cremation processes. This is because skeletal elements retrieved from modern crematoria tend to be comparatively large before being ground down for scattering or deposition in the urn. Bone is also prone to fragmentation if it is moved while still hot (McKinley 1994, 340). For both contexts the greatest proportion of the bone was derived from the 10mm and 5mm sieves (Appendix, Table 3). This suggests that the bone was subject to some disturbance while it was still hot.

The amount of bone retrieved from each context weighed significantly less than the average bone weight produced by modern crematoria (Appendix, Table 2), which tends to range from 1,000.5g to 2,422.5g with a mean of 1,625.9g (McKinley 1993). Wahl (1982, 25) found that archaeologically recovered remains of cremated adults tend to weigh less (between 250g and 2,500g) as a result of the commonly practised custom of selecting only some of the cremated bone from the pyre for inclusion in the burial, thereby representing a symbolic, or token, interment. Such a small percentage of the expected quantity of bone suggests that it is highly likely that neither of these contexts were representative of true cremation burials, and may have been residual bone fragments in the fill.

The cremated bone from (Context 15632) was white in colour, indicating that it was very well burnt; causing the complete loss of the organic portion of the bone (Appendix, Table 2). The colouration of (Context 24166) was more mixed, with patches of white, grey, and black. According to McKinley (1989), the body requires a minimum temperature of 500° Celsius over seven to eight hours to achieve complete calcination of the bone. The colouration of the bone in (Context 15632) therefore suggests that the bone had reached sufficient temperatures, and was burnt for long enough, to complete the cremation process, whereas for (Context 24166) the cremation process was less complete/insufficient.

The majority of identifiable bones were derived from unidentified long bone shaft fragments and skull fragments (Appendix, Table 4). However, possible fragments of vertebrae and ribs were also identified in (Context 24166). However, again, these may have been representative of animal bone.

A count of the 'minimum number of individuals' (MNI) recovered from a cemetery is carried out as standard procedure during osteological assessments of inhumations in order to establish how many individuals were represented by the articulated and disarticulated human bones

(without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements, such as the hip joints and cranial elements. It is usually not possible to calculate the MNI for cremation burials, because only a token selection of bone from the pyre tends to be buried. Double burials can be identified only if skeletal elements are duplicated, or if skeletons of different ages are represented in one burial. No duplications, or distinctly human bone fragments were identified in either context, so the MNI could not be calculated.

Due to the inability to reliably identify these two contexts as cremation burials, further osteological analysis, such as the estimation of age and sex, could not be undertaken.

References

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Appendix

Table 1 List of contexts containing burnt bone

Context No.	Burial No.	Feature type	Artefacts and inclusions	Notes
15550	15632	Fill of ditch terminus {15550}	Pot sherds	Very small quantity of bone, difficult to determine if definitely human, but texture and density suggest so
15643	15523	Upper fill of ditch [15643]	Pot sherds, glass, metal	66.4g of unburnt animal bone, and 3.2g of burnt bone that is also likely animal
15954/ 15628	15955	Fill of post hole [15954], abutting post hole [15628]	-	0.1g of burnt bone fragments, can't determine if human or animal, excluded from further analysis
16487	16463	Fill of possible oven/hearth	Charcoal, copper alloy object	At least nine fragments of definite burnt animal bone present, no definite human bone fragments. Likely that the whole assemblage from this context is animal bone
16487	24647	Fill of possible oven/hearth	Charcoal, pot sherds	At least 31 fragments of definite burnt animal bone present, no definite human bone fragments. Likely that the whole assemblage from this context is animal bone
16493	16494	Fill of pit [16493]	Charcoal	9.9g of very charred burnt bone and charcoal fragments, can't determine if human or animal, excluded from further analysis
16493	24929	Fill of pit [16493]	Charcoal, possible metal pin	1.3g of burnt bone fragments, can't determine if human or animal, excluded from further analysis
24165	24166	Fill of post hole [24165]	Charcoal, burnt animal bone	-

Table 2 Summary of cremated bone assemblages

Burial No.	Urn?	Bone Colour	Preservation	MNI	Age	Sex	Max frag. (mm)	Weight (g)	Percentage of Expected Quantity of Bone
15632	N	White	Poor	1	-	-	26.9	3.0	0.2
24166	N	White/grey/black	Moderate	1	A?	-	30.1	8.2	0.5

Table 3 Summary of cremated bone fragment size

Burial No.	10mm (g)	10mm (%)	5mm (g)	5mm (%)	2mm (g)	2mm (%)	Residue	Weight (g)
15632	1.3	43.3	1.5	50.0	0.2	6.7	-	3.0
24166	1.6	19.5	6.0	73.2	0.5	6.1	0.1	8.2

Table 4 Summary of identifiable elements in the cremation burials

Burial No.	Skull (g)	Skull (%)	Axial (g)	Axial (%)	UL (g)	UL (%)	LL (g)	LL (%)	UIL (g)	UIL (%)	Total ID (g)	Total ID (%)	Total UID (g)	Total UID (%)
15632	2.2	73.3	-	-	-	-	-	-	0.7	23.3	2.9	96.7	0.1	3.3
24166	3.2	39.0	0.3	3.7	2.9	35.4	-	-	1.5	18.3	7.9	96.3	0.3	3.7