Landscape Evolution in the Middle Thames Valley
Heathrow Terminal 5 Excavations Volume 2

Human Remains

(Section 12)

by Jacqueline I. McKinley and Jonny Geber

SECTION 12

HUMAN REMAINS

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Osteological report on the inhumation burials

by Jonny Geber

Osteological analysis was conducted by Jonny Geber and Peter M. Hacking on the skeletal remains of two adult inhumation burials (skeleton 595073 and skeleton 703006) found during archaeological excavation ahead of the construction of Terminal 5 at London Heathrow airport. Skeleton 595073, a crouched inhumation, was found in the northern part of the excavation area and has been radiocarbon dated to 1420 - 1260 cal BC (OxA-15595), which corresponds to the Middle Bronze Age period (Adkins and Adkins 1998, 45). Skeleton 703006, also found in the northern area, is of possible Iron Age date.

Provenance and burial practice

Skeleton 595073 was found in a NE-SW orientated sub-circular grave cut (595072). The skeleton was articulated and was lying on its right side facing east in a tightly flexed position, perhaps as a result of the individual having been bound. One degraded copper alloy earring was found in association with the skeleton.

The skeleton dates to a period that is characterised by a cremation burial tradition in which urned cremated bone deposits were placed within flat graves in cemeteries and sometimes in barrows (Adkins and Adkins 1998, 49). Urned cremation burial cemeteries started to appear during the second millennium BC in close association with settlement boundaries which were constructed at the same time (Ray 1999, 30-31).

Skeleton 703006 has been provisionally dated to the Iron Age based on its close vicinity and similarity to a pit (712005) which contained middle Iron Age pottery. It had been placed in pit 726001 and orientated north-south. The pit truncated ditch 712009, believed to be of middle to late Bronze Age date. The posture of the skeleton was difficult to determine owing to the poor preservation of the remains, however the arms at least were judged to have been flexed and it is likely that the individual had been buried in a crouched position. A crouched body position was standard practice in Bronze Age and Iron Age inhumations and it persisted as a minority rite throughout the Roman period (Philpott 1991, 71).

Little is known about burial practices during the Iron Age in Britain. Cremation may have been replaced by an inhumation tradition in which the deceased were placed in a crouched position within ditches or pits around the seventh to fifth centuries BC (Roberts and Cox 2003, 90; Wilson 1981, 127). However, few examples have been found, and the fact that disarticulated human bones are frequently found in contexts such as disused storage pits, postholes and ditches, implies that disposal of the dead was primarily undertaken by excarnation and scattering cremated remains (Haselgrove 1999, 123). If this was the case, this form of treatment suggests that, at this time, less emphasis was placed on the graves of ancestors as territory markers, their role as focal points for Iron Age communities becoming less important (Adkins and Adkins 1998, 97-98; Haselgrove 1999, 124; Taylor 2001, 65-66).

Both skeletons were covered by a sterile grave fill which (to a slight extent) was mixed with the natural geology through bioturbation as a result of worm activity. Both sets of skeletal remains were very poorly preserved. Cortices had suffered considerable post-mortem damage and the bones were very fragmented. Skeleton 595073 was particularly fragile and, as such, was blocklifted and excavated under controlled laboratory conditions . Skeleton 703006 was excavated on site.

Osteological methodology

General terminology and equipment used

The anatomical terminology used in this report strictly accords with international nomenclature described by Feneis and Dauber (2000). The descriptive teeth formula used is the Zsigmondy system (Zsigmondy 1861 in Hillson 2003, 8-9).

All skeletal elements were examined macroscopically. Measurements were taken to the nearest 0.01 mm using a digital sliding caliper.

Estimation of age at death

Age at death was estimated by observing the degree of wear on the molar teeth (Brothwell 1981; Miles 1962) and the degree of ectocranial suture obliteration (Meindl and Lovejoy 1985). Poor preservation precluded the application of other methods.

Estimation of sex

Biological sex could not be estimated using reliable methods that relate to morphological characteristics of the pelvis and the skull (Cox and Mays 2000) owing to poor preservation and fragmentation. Instead, osteometric methods were employed that are based on the epicondylar breadth of the right humerus (France in France 1998).

Metrics

Cranial and postcranial elements were measured in accordance with descriptions in Brothwell (1981). These were taken, using a combination of calipers and osteometric board, in the laboratory and, using a tape measure, *in situ* prior to lifting. The data are presented in Tables 1-3.

Estimation of stature

Accurate estimation of stature was impossible owing to fragmentation and the poor state of preservation. However, based on measurements taken *in situ* from skeleton 595073 an approximate stature was calculated by employing the methods developed by Sjøvold (1990) and Trotter and Gleser (Trotter 1970). According to Sjøvold, his

method does not overestimate the stature of short persons and underestimate the stature of tall persons unlike the methods developed by Trotter and Gleser (Sjøvold 1990).

Results

Skeleton 595073

Approximately 75% of this skeleton had survived and was represented by skull, upper and lower appendages, pelvis, vertebral column and ribs, all of varying degrees of preservation. Measurement of the epicondylar breadth of the distal right humerus yielded a result of 52.32 cm and places this individual in the female range (France 1998). This result is corroborated by the overall gracile appearance of the bones. Observations of the degree of wear on the molar teeth and the degree of suture obliteration on the cranium indicated that the individual was between 18 and 35 years of age. However, both observations are based on the least reliable techniques for estimating age and, therefore, this result should be viewed with caution.

Stature was estimated using measurements attained from the skeleton *in situ*. This employed the mean value of the three most equal estimated results, in this case both radii and the left ulna. The estimated stature was approximately 147.80 ± 4.98 cm (4 feet 10 inches) according to Sjøvold's method, and 147.66 ± 4.30 cm (4 feet 10 inches) according to Trotter and Gleser's method. However, because the bones could not be measured in the standard way (i.e. with an osteometric board), these results must be regarded as an approximation at best and should not be used for comparative analysis with other skeletal assemblages.

Skeleton 70300

Fifteen percent of this skeleton had survived which was represented by skull, upper appendage and ribs to some degree. Molar attrition indicated an age of approximately 25 to 35 years but no indicators were available with which to estimate the sex of the individual. A medium sized carious lesion was present on the mesial cervix of the left first mandibular molar. None of the other 25 teeth that had survived were affected by caries. Caries is destruction of the enamel, dentine and cement of the tooth and is

caused by acid attack that occurs when the bacteria in dental plaque acts on carbohydrate (Arcini 2003, 63; Hillson 2003, 269).

Discussion

The skeletons recovered during excavation on the Terminal 5 project at London Heathrow represent one female aged 18-35 years old and one 25 to 35 year-old of unknown sex. Neither skeleton displayed any evidence for pathology on their bones, although one carious cavity was identified on a tooth belonging to skeleton 703006. These results cannot be considered reflective of the overall health status of these individuals. The identification of pathological conditions on bones is dependent on good preservation which, in the present examples, was lacking.

Both burials have been dated to periods about which little is known in terms of funerary practice. Skeleton 595073 is perhaps the most interesting find in this respect because Middle Bronze Age inhumations are rarely identified. This may be because crouched burials have been typologically dated, rather than radiocarbon dated, to the Early Bronze Age, a period that is characterised by a Beaker burial tradition (~ 2300 - 1700 BC) in which males were often placed on their left side and females on their right side, both crouched and facing south, in small bowl barrows and accompanied by beaker vessels (Adkins and Adkins 1998, 47; Ray 1999, 29). It may also be because such burials do not survive or were uncommon, cremation being the predominant practice.

Comparative examples include three inhumation burials dating to the Middle Bronze Age that were found at Fengate in Peterborough. This was an area in which a significant amount of ditched enclosures and droves dating to the second millennium BC were discovered and excavated in the 1970s (Pryor 1980). All three skeletons were found in enclosure ditches. One poorly preserved crouched adult female inhumation, in a NW-SE alignment, had been dumped into a ditch (*ibid.* 1980, 5), while the remaining two had been more carefully buried. One of the more carefully buried skeletons occupied a crouched position the other, a semi-crouched position. The former, a probable young adult female, was orientated NE-SW and was lying near the bottom of a ditch which was a north-south cut along the east side of a

droveway (*ibid.* 1980, 34-40). The latter was a poorly preserved semi-crouched burial of an adolescent female who was also found at the intersection of two ditches. It has been suggested that this burial location was a preferred choice, being an important junction (*ibid.* 1980, 168).

Another example is the unexpectedly early pit burial that was found at Sutton Courtenay in Berkshire which contained the remains of a mature adult female aged between 35 and 45 years of age (Adkins and Adkins 1998). The skeleton was tightly flexed and had been placed in a supine position within an ovoid cut. The feet had been drawn up against the pelvis, the arm bones flexed with the bones of the right hand resting on the right knee and the skull was found underneath the femora, all suggesting that the woman had been tightly bound when buried. The skeleton was radiocarbon dated to 1200 - 900 BC (UB-6031) which corresponds to the Middle and Late Bronze Age (Adkins and Adkins 1998, 45).

It is interesting that all of these examples, and the present example, are crouched inhumations of adult females. This may perhaps reflect an aspect of a specific type of rite during this period.

The pit containing skeleton 703006 was provisionally dated to the Iron Age based on its close vicinity and similarity to another pit (712005) which contained middle Iron Age pottery. If this skeleton is Iron Age in date then it may belong to a burial tradition that was becoming less popular. However, the possibility that this skeleton was much earlier cannot be excluded, as attempted radiocarbon dating failed.

Catalogue

Abbreviations:

1	=	Dental alveolar present
~~1~~	=	Dental alveolar not present
P	=	Tooth present
/	=	Post-mortem tooth loss
B	=	Tooth broken
MCC	=	Mesial cervical caries

Skeleton number: 595073
Completeness: 75%
Preservation: Poor
Period: Middle Bronze Age
Posture: Crouched
Orientation: NE-SW
Age: 18-35 years *(Young-Prime Adult)*
Sex: Female
Stature: ~ 147.80 ± 4.98 cm (Sjøvold); ~ 147.66 ± 4.30 cm (Trotter and Gleser)
Dental inventory:

-	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
~~8~~	~~7~~	6	5	4	~~3~~	~~2~~	~~1~~	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~8~~
8	7	6	5	4	3	2	1	1	2	~~3~~	4	5	6	7	8
P	*P*	*P*	*P*	*P*	*P*	*/*	*P*	*P*	*P*	*X*	*P*	*P*	*P*	*P*	*P*

Dental Pathology: Slight dental attrition, slight to medium calculus deposits.
Skeletal pathology: Not present
Metrical indices:
Platymeric (left): 69.11 *(Platymeria)*
Non-metric traits and anomalies: Not present
Radiocarbon date: 3077 ± 31 BP (OxA-15595)
δ^{13}C value: -20.4
Comments: Analysed by J. Geber

Skeleton number: 703006
Completeness: 15%: Fragments of the skull, the left shoulder, arms and some ribs
Preservation: Poor
Period: Uncertain. Possibly Iron Age?
Posture: Crouched?
Orientation: N-S
Age: ~ 25 years *(Young-Prime Adult)*
Sex: Indeterminable
Stature: Indeterminable
Dental inventory:

											B				
P	-	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	-	*P*	*P*
~~8~~	~~7~~	~~6~~	~~5~~	~~4~~	~~3~~	~~2~~	~~1~~	~~1~~	~~2~~	~~3~~	~~4~~	~~5~~	~~6~~	~~7~~	~~8~~
~~8~~	~~7~~	~~6~~	~~5~~	4	~~3~~	~~2~~	~~1~~	1	2	3	4	~~5~~	~~6~~	~~7~~	~~8~~
-	*P*	-	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	-	-
	B									*B*			*MCC*		

Dental Pathology: Slight dental attrition, slight to medium calculus deposits.
Skeletal pathology: Cervical caries, slight dental attrition, slight calculus deposits.
Metrical indices: Not available
Non-metric traits and anomalies: Not present
Comments: Analysed by P.M. Hacking

APPENDIX 1: Metrical data

Table 1. Craniometrics (mm) of skeleton 595073

Measurement	Left	Right	Unsided
CYL	17.04	-	-

Table 2. Osteometrics (mm) of skeleton 595073

Measurement	Left	Right
FeD_1	20.29	-
FeD_2	29.36	-
HuE_1	-	52.32

Table 3. In situ measurements (mm) of incomplete longbone*s of skeleton 595073*

Element		Incomplete	90% complete	> 90% complete
Humerus	*L*	225.00		
	R			244.00
Radius	*L*			191.00
	R			195.00
Ulna	*L*			215.00
	R			200.00
Femur	*L*	325.00		
	R	205.00		
Tibia	*L*		284.00	
	R	235.00		
Fibula	*L*	230.00		
	R			205.00

APPENDIX 2: Dental data

Table 4. Prevalence of dental data from adult dentitions in inhumations. Abbreviations: AMTL = Ante-mortem tooth loss, PMTL = Post-mortem tooth loss

Skeleton no	Caries		AMTL		PMTL		Periapical abscesses	
595073	0/29	*0.00%*	1/18	*5.56%*	1/18	*5.56%*	0/18	*0.00%*
703006	1/26	*38.46%*	0/3	*0.00%*	0/3	*0.00%*	0/0	*0.00%*

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Cremated bone report

by Jacqueline I. McKinley

Cremated bone from 19 contexts was subject to analysis, including four from PSH02, 12 from LFA05 and three from TEC 05 (Table 5). Most of the material is of Middle-Late Bronze Age date, with one Late Romano-British unurned burial from the southern area of PSH 02. The Bronze Age contexts include the remains of nine unurned burials with redeposited pyre debris, four dated to the Middle Bronze Age (MBA), five to the Middle/Late Bronze Age (M/LBA) and one to the Late Bronze Age (LBA). The two M/LBA burials from TEC 05 were situated *c*. 50m apart and lying to either side of Trackway 6 in the vicinity of Farmstead 10. One of the MBA burials lay *c*. 125m to the north-west in an area of PSH 02 and may have related to the same settlement or group of settlements. The six remaining Bronze Age burials were all from LFA 05 on the northern margins of the area of investigation, forming two small, dispersed groups situated *c*. 90m apart within the field systems to either side of the settlement. One undated context, probably comprising redeposited pyre debris, was recovered from within the confines of the settlement.

Methods

All except one deposit had been excavated as a series of between two and eight sub-contexts (spits and/or quadrants/halves) to allow the detail of the burial formation process to be ascertained. These divisions were maintained throughout analysis (the weights of bone from these contexts are shown together in Table 5 but separately within the archive).

Osteological analysis of the cremated bone followed the writer's standard procedure (McKinley 1994a, 5-21; 2004a). Age was assessed from the stage of tooth and skeletal development (Beek 1983; Scheuer and Black 2000), and the patterns and

degree of age-related changes to the bone (Buikstra and Ubelaker 1994). Sex was ascertained from the sexually dimorphic traits of the skeleton (Gejvall 1981; Buikstra and Ubelaker 1994). The small fraction residues (1mm and 2mm) were scanned by the writer; identifiable fragments were recovered and included within the recorded bone weights.

Results

A summary of the results from analysis is presented in Table 5. Full details are in the archive.

Disturbance and condition

The surviving depth of the graves had a range of 0.09-0.29m, more than half being over 0.20m deep. Two of the shallowest graves were similarly situated to the south of the Bronze Age settlement enclosure in the northern section of the investigated area (LFA 05), and it may be that there was heavier truncation of features here than elsewhere. Some bone may have been lost from the shallower features (<0.10m) as a result of truncation. Several of the deeper deposits had also suffered disturbance either due to the insertion of later features (grave 554566) or root action (grave 591052), and bone may have been lost as a consequence. Two burials, those made within graves 699010 (0.29m deep) and 827119 (0.21m deep), could be confidently identified as undisturbed, the upper 0.09m and 0.06m depths of fill respectively comprising wood fuel ash (probably pyre debris) devoid, or largely so, of any bone.

Much of the bone is slightly worn and chalky in appearance and almost no trabecular bone was recovered from the prehistoric burials. Trabecular bone is subject to preferential destruction in acidic soil conditions such as the gravels and brickearths at Heathrow (McKinley 1997a, 245; Nielsen-Marsh *et al* 2000). Even where bone visually appears in good condition, an extreme scarcity of trabecular fragments is likely to be as, if not more, reflective of poor survival rather than non-inclusion in the original deposit. Numerous fragments of trabecular bone were recovered from the Romano-British burial (591053), suggesting it lay in a different burial environment to that of the earlier deposits. Although none of the burials was urned, there were indications that the Romano-British deposit may originally have been boxed, which, at least in the early stages after burial, would have afforded the

bone some protection from the acidic soil matrix and potentially have been sufficient to ensure the survival of some trabecular bone.

Demography

A minimum of nine individuals were identified from the prehistoric assemblage including one juvenile, one subadult/young adult and five adults; one other individual could not be aged closer than >13 yrs. (Table 5). It was possible to indicate the sex of only two individuals – the subadult/young adult and one other adult – who were both probably female. The Late Romano-British individual was identified as a mature/older adult (Table 5). The apparent dearth of immature individuals cannot be seen as significant; given the shallow depth of some cuts and aggressive burial conditions, such deposits could have been lost and fragile immature bone destroyed. Burials of young immature individuals often contain relatively little bone (see *pyre technology and ritual*) which could render them even more vulnerable to loss, particularly where not protected by deposition in an urn as here.

The prehistoric assemblage adds to the two Middle-Late Bronze Age individuals – adult ?females – identified from Perry Oaks (McKinley 2001), and the small numbers from other cremation grave groups or singletons recovered in the vicinity e.g. Prospect Park (Andrews 1996) and Imperial College (WA 2004).

Pathology

Un-surprisingly, given the very poor condition of the bone and extreme paucity of articular surfaces, few pathological lesions were observed. A variety of lesions were observed in the remains of three prehistoric and the one Romano-British individual (Table 5).

A small area of fine grained periosteal new bone was observed on a fragment of humerus shaft from 554566, indicative of infection of the periosteal membrane covering the bone which was active at the time of death. Such lesions may develop in response to a number of conditions (Manchester 1983, 37) but given the location of this lesion it is most likely that it was related to an infection in the overlying soft tissue, possibly linked to soft tissue trauma.

Porotic hyperostosis, manifest as porotic lesions in the exocranial vault and thickening of the diploe, is indicative of iron-deficiency anaemia, most commonly caused by an inadequate dietary intake of iron and/or a severe intestinal parasitic

infestation (Stuart-Macadam 1991, 101). The condition is rarely observed in the absence of *cribra orbitalia* – pitting in the orbital vaults – and as a result is believed to represent a more sever form of the condition than the latter (Roberts and Manchester 1997, 167). A minimum of four small fragments of skull from the juvenile 699044 have extensive open pitting in the exocranial vault with thinning of the outer plate. No fragments of orbital vault were recovered from this burial so the presence or absence of *cribra orbitalia* cannot be confirmed. The lesions observed do, however, appear most likely to represent a case of porotic hyperostosis and as such present a very rare observation in cremated remains, the condition also rarely being recorded in British populations in general (*ibid.*).

A possible healed sharp-weapon trauma was recorded on a fragment of ?parietal vault from grave 827119. The worn and eroded ?transverse linear lesion is *c*. 8mm long and, although inconclusive given its condition, appears to have one acute and one obtuse edge suggesting a healed cut from a sharp-weapon.

Gross destructive lesions with remodelling of the articular surface in a metatarsal head from the Late Romano-British burial 591053 appear most likely to represent a case of pyogenic arthritis (Rogers and Waldron 1995, 88). The intense pain of infection with the subsequent permanent disability within the joint would have severely limited this individual's ability to move about freely.

Pyre technology and ritual

The bone from most of the prehistoric burials was uniformly white in colour, indicative of full oxidation of the organic components (Holden *et al* 1995a and b). Single fragments of humerus and femur shaft from the Middle Bronze Age grave 554566 are slightly blue inside and one fragment of thoracic vertebra from the Romano-British burial 591053 is blue/grey. Such minor variations are relatively common and do not signify any specific fault in the cremation process (McKinley 1994a, 72-81; 2000). It is possible that the observed degree of oxidation is misleading, however, in that there may have been preferential destruction of the less well oxidised bone in the acidic burial environment (no unburnt bone survives from any of the T5 sites).

The weights of bone recovered are generally low, with a range of 53.3 – 252.8g and an average of only 106g from the prehistoric subadult/adult burials; the maximum

weight representing only *c*. 15.8% of the average weight of bone expected from an adult cremation (McKinley 1993). The slightly higher weight of 300.5g from the Romano-British burial still represent only *c*. 18.7% of the expected average (*ibid.*). The prehistoric weights are particularly low, the average recorded weights for the Bronze Age generally falling in the 300-500g range with a large minority of much greater weights (>900g; McKinley 1997b). The weight of bone from the Romano-British burial also falls below the average commonly recorded in contemporaneous cemeteries (McKinley 2004b, table 6.6). The low weights in both assemblages may, at least in part, reflect taphonomic factors, the implied loss of trabecular bone skewing the recorded bone weights; though the quantity of identifiable axial skeleton (largely trabecular bone) for example, rarely exceeds *c.* 15% by weight in any archaeological cremation burial (e.g. *ibid.* table 6.8). The weights of bone from unurned burials is often, though not consistently, lower than that from urned burials – again, largely due to taphonomic factors (e.g. *ibid.* table 6.5). The bone weights from the Perry Oaks (unurned), Prospect Park and Imperial College (urned and unurned), were, however, higher than recorded here despite similar burial environments (McKinley 2001; 1996; 1998).

The maximum recorded fragment sizes are relatively small with a range of 12-55mm and an average of 33mm, and with two exceptions (graves 699001 and 827119) the majority of the bone (45-73%) from each deposit was recovered from either the 5mm (six cases) or 2mm (one case) sieve fractions. The maximum fragment size was recovered from the undisturbed burial in grave 699010; the other undisturbed burial containing the second largest fragment. A variety of factors can affect the size of cremated bone fragments, most of which are exclusive of any deliberate human action other than that of cremation itself (McKinley 1994b). In this instance the mode of burial (uncontained) and taphonomic factors will undoubtedly been of significance. Similarly high levels of fragmentation were observed in the bone from Imperial College (McKinley 1998), that from Perry Oaks and Prospect Park being close but slightly less fragmented (McKinley 2001; 1996).

Elements of axial skeleton were identified within only three deposits, two prehistoric and the Romano-British burial; the taphonomic reasons for the absence of this highly trabecular bone have already been discussed. Elements of skull, upper and lower limb were identified in all other burials in varying proportions; skull elements –

easily identifiable even as small fragments – were most common (by weight) in six deposits, lower limb (heaviest elements) in three and upper limb in one. There is no obvious link in terms of date, age and/or sex of the individual for the variations and it should be noted that only 14-63% of the bone, average 33%, could be identified to skeletal element. In general there is no clear indication of the recovery of specific skeletal elements for burial, however, there is some evidence suggestive of different methods of recovery of bone from the pyre site being employed both within and between burials.

Hand collection of bone would tend to give a bias towards the recovery of the larger bones, the very small bones (e.g. tooth remains, hand and foot bones) being more difficult to distinguish and more likely to be masked by wood ash. Raking or scrapping-off of the upper levels – where the bone would be concentrated – of the *in situ* pyre debris, with some subsequent form of winnowing (using a basket or water), would be more likely to ensure the random recovery of all bone including the smaller elements (McKinley 1997a, 68). The MBA burial 554568 included seven fragments/complete tooth crowns and eight tooth roots. Fragments of tooth enamel and root were also recovered from the juvenile burial 6990465. A few tooth roots and small hand/foot bones were recovered from the Romano-British burial and prehistoric burials 699047 and 827140. The recovery of enamel from erupted teeth in cremation burials is rare; the tooth crowns expand rapidly in the heat of the pyre and shatter, the usually small fragments rarely being included in the burial; unerupted tooth crowns are shielded from the heat by their position in the crown crypts. The recovery of such relatively large quantities of tooth enamel – including whole crowns – from 554568 suggests two things; the teeth themselves where in some way shielded from the heat of the pyre and, in the absence of small hand and foot bones which would suggest a more consistent collection procedure, a different mode of recovery was applied to collection of skull elements (55% identified elements were skull) compared with the rest of the remains as described above.

Evidence for pyre goods, in the form of a small quantity of animal bone and coloured staining to the bone, were observed in the Late Romano-British burial. Slight blue/green spot staining, suggestive of the presence of a copper-alloy item on the pyre, was observed on a fragment of femur shaft. Fragments of ?red deer skull (J. Grimm *pers. comm.*) were recovered mixed amongst the human bone (Table 5). The

inclusion of animal offerings on the pyre is a common characteristic of the rite with, for example, 3.5-47% of Romano-British burials from a sample of cemeteries contained cremated animal bone (McKinley 2004b, 331-332). The inclusion of wild animals is, however, unusual at this period, where pig and domestic fowl are generally the most commonly occurring species.

All the burials were made unurned and all grave fills included deposits of black fuel ash (pyre debris). During excavation, no distinction in the distribution of archaeological components (i.e. charcoal and cremated bone) could be made, the deposits having a homogenous appearance. The excavation procedure, involving recovery of individual deposits as a series of spits and or quadrants/halves, enabled the distribution of the bone within the grave fill to be more clearly distinguished in analysis. In all the prehistoric burials, the bone could be seen to have been concentrated in one quadrant or one half of the fill. In grave 554566, following an initial small deposit of pyre debris in one side of the cut, the bone was placed in a concentration in the western half of the cut (82% all bone). In the undisturbed grave 699010, the final deposit of fuel ash sealed the bone concentration (83.1%) in the northern and eastern quadrants of the fill, most contained in the lower 0.08m (68.2%). Others showed bone concentrations in the northern (699001, 699046, 830083), eastern (698001) or western (699044, 827119) quadrants of the grave cuts. In two cases – 699048 and 6990061 – the distinct area of concentration was difficult to discern but almost no bone was recovered from the southern quadrants. In each case, the bone was probably deposited as a separate entity either contained within an organic container or possibly as a heap within the grave cut, with subsequent deposits of pyre debris prior to sealing the grave. Over time, the debris would infiltrate between the bone fragments masking the original distinction between the two deposits. In two cases, grave 554566 (mentioned above) and 827119, there also appeared to have been an initial deposit of pyre debris in the base of the grave prior to the burial itself being made. No analysis of the formation process of the Romano-British deposit could be undertaken due to the loss of site records.

By the Late Roman period cremation had largely been superseded by inhumation of the unburnt corpse across much of Britain other than in the Northern Frontier Forts. Philpott recorded a scatter of late cremation burials in south-east and central-southern England (1991, 50-52), and further burials of this date have recently been found in

London (Barber and Bowsher 2000) and Winchester (Birbeck and Moore 2004). Persistence of the rite was, however, clearly more widespread than was once thought, and the find from T5 joins a still small but growing number of recent finds from rural sites – often culturally indistinct burials dated by radiocarbon analysis – which have proved to be of 3rd or 4th century date (e.g. Bellamy 2000).

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Table 5: Summary of result from analysis of cremated bone

context	cut	deposit type	date	weight	age/sex	pathology	pyre goods
PSH02							
554567	554566	rpd	MBA	3.9g	subadult/adult >13 yr.		
554568	554566	?un. burial + rpd	MBA	105.2g	subadult/adult c. 13-25 yr. ?female	periosteal new bone – humerus	
554569	554570	redep.	MBA	<0.1g	=554568		
591053	591052	un. burial + rpd	LRB	300.5g	adult >35 yr.	?pyogenic arthritis – prox. metatarsal; enthesophytes – ilium; non-metric trait – wormian bone	4.4g sheep/goat/ deer (?red deer)
LFA05							
698002/3	698001	?un. burial + rpd	MBA	54.2g	subadult/adult >13 yr.		
699002/6	699001	?un. burial + rpd	MBA	65.9g	adult > 18 yr.		
*699011-13	699010	un. b. + rpd	M/LBA	103.7g	subadult/adult >13 yr.		
699045	699044	?un. burial + rpd	M/LBA	5.2g	juvenile c. 5-7 yr.	porotic hyperostosis	
699047	699046	?un. burial + rpd	M/LBA	53.3g	adult >18 yr.		
699049	699048	?rpd	?	5.8g	subadult/adult >13yr.		
699061	699060	un. burial + rpd	LBA	123.9g	adult >18 yr.		
TEC 05							
*827140 inc. 827139	827119	un. burial + rpd	M/LBA	252.8g	adult *c*. 20-45 yr. ??female		
830084	830083	un. burial + rpd	M/LBA	85.2g	adult *c*. 18-40 yr.		

KEY: * undisturbed; un – unurned; rpd - redeposited pyre debris

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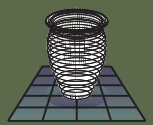

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