Cambourne New Settlement

Iron Age and Romano-British settlement on the clay uplands of west Cambridgeshire

Volume 2: Specialist Appendices

Web Report 10

Human bone, *by Jacqueline I. McKinley*

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Iron Age and Romano-British Settlement on the Clay Uplands of West Cambridgeshire

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with contributions from
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Volume 2: Specialist Appendices
Part 1. Artefacts
Part 2. Ecofacts

Wessex Archaeology Report No. 23

Wessex Archaeology 2009

Published 2009 by Wessex Archaeology Ltd
Portway House, Old Sarum Park, Salisbury, SP4 6EB

http://www.wessexarch.co.uk

ISBN 978-1-874350-49-1

Project website

http://www.wessexarch.co.uk/projects/cambridgeshire/cambourne

WA reports web pages

http://www.wessexarch.co.uk/projects/cambridgeshire/cambourne/reports

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Human Bone

By Jacqueline I. McKinley

Human bone was recovered from 16 contexts on four sites: Lower Cambourne (LC; eight contexts), Jeavons Lane (JL; 5), Knapwell Plantation (KP; 2), and Little Common Farm (LCF; 1). These are described and discussed together below. Deposit types included the *in situ* remains of 11 inhumation burials; three Middle Iron Age, one Late Iron Age, three Romano-British, and four late Romano-British. One other deposit may represent the *in situ* remains of an undated burial (Obj. no. 749). Redeposited human bone was recovered from four contexts (ditch or pit fills), one ?Iron Age, two Romano-British and one undated.

Methods

The degree of erosion to the bone was recorded following McKinley (2004a, fig. 6). Age was assessed from the stage of skeletal development (Bass 1987; 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 (Buikstra and Ubelaker 1994). A standard set of measurement were taken where possible (Brothwell and Zakrzewski 2004); stature was estimated in accordance with Trotter and Gleser (1952; 1958) and other indices were calculated according with Bass (1987, 214, 233). Non-metric traits were recorded (Berry and Berry 1967; Finnegan 1978).

Results

A summary of the results are presented in **Table Human Bone 1** (at end of report), full details are in the archive.

Disturbance and condition

The depth of the surviving grave cuts ranged from 0.09 m (5142) to 0.45 m (80299) with an average of 0.23 m. There are indications of a temporal variation in grave depths in that all the late Romano-British graves from Jeavons Lane were over 0.20 m deep (average 0.36 m), and a clear locational variation in that all the graves from the west side of Lower Cambourne (Iron Age and Romano-British) were less than 0.11 m deep (average 0.10 m). Most graves showed evidence of some degree of plough damage.

Whilst surviving grave depth was a major factor in skeletal survival it was clearly not the only one. There was 75–97% skeletal recovery from the relatively deep late Romano-British graves, however, 85% of the skeleton was recovered from grave 1018 which survived to a depth of only 0.11 m. Several graves of over 0.10 m depth contained 50% or less of the skeleton and grave 1698, of almost commensurate depth to 1018, held only a few bones from one foot.

The bone was in relatively good condition suggesting that the natural of redeposited boulder clay was less acidic than most clays having derived from more calcareous Triassic marls; although the trabecular bone often appears to have suffered preferential loss this was not to the extent commonly seen in the acidic burial environment generally associated with clays. The majority of the bone is moderately root marked/eroded (graded 2–3) with the notable exception of that from burial 80424, which is only root stained with no erosion, and burial 5143 which is heavily eroded (grade 3–5+). Both represent singletons, the former from the north end of Jeavons Lane (late Romano-British) and the latter from Lower Cambourne (Middle Iron Age), though there were other burials in the general vicinity of 5143.

Fragmentation levels were high, the skull being particularly badly affected in all graves, irrespective of depth. This suggests heavy compaction of the grave fills putting pressure on the bone.

The low skeletal recovery from many of the graves in part reflects the less than excellent bone survival and in part loss of bone from the burial environment due to plough damage. In some cases, grave 1698 for example, the great paucity of surviving bone is not easily explained by either of these factors and may reflect more extreme disturbance than was apparent in excavation, possibly even deliberate.

The redeposited femur shaft from 80493, which is in good condition, has a semi-fossilised internal cortical appearance and both ends of the shaft show evidence of canid gnawing. This indicates that the bone had been subject to surface exposure for at least a short while before its final deposition.

Three right proximal finger phalanges from context 1017 are heavily stained green, with slighter, more patchy staining at the proximal ends of two right middle finger phalanges. The staining relates to a copper alloy ring the individual was wearing, apparently on the right index finger, at the time of burial.

Demographic data

A minimum of 16 individuals are represented within the assemblage including five Iron Age, nine Romano-British, and two undated (**Tables Human Bone 1** and **2**). Each of the graves contained the remains of one individual. The redeposited bone from the ?Iron Age context 7379 derived from a ditch fill at the south end of Lower Cambourne and clearly did not originate from any extant grave within the vicinity. The bone (fragments of ulna) is amongst the most heavily eroded and may have been subject to several deposition episodes prior to its final deposition. While it may have derived from a grave cut into an earlier fill of the ditch – like its near neighbour 7386 – it could relate to a much earlier period of activity on the site. The single fragment of tibia from context 5130 represents the only neonatal remains recovered from the site. The femur shaft (80493) redeposited in Romano-British pit 80421 at the north end of Jeavons Lane could not have originated from any excavated burial in the area. Similarly, the fragment of undated skull vault from Little Common Farm must have derived from an individual not otherwise represented within the assemblage. The undated infant remains, probably from a very shallow grave at the west end of Little Cambourne Green, represent the only individual of this age from the site.

Comment on demographic make-up is limited by the small size of the overall assemblage, the even smaller number within individual phases, and the probability of the graves not being representative of the various temporal communities as a whole. At Knapwell and Jeavons Lane, most of the excavated graves were close to or on the margins of the sites and more graves may have existed beyond the limits of excavation. Graves could have been removed from the archaeological record as a result of extensive plough damage, especially those of Iron Age date, and particularly in the Lower Cambourne area where the surviving graves are all of shallow depths. The infant remains ON 749 were apparently recovered as a surface find, but the skeletal elements present suggest the remains may have been articulated and the grave cut so shallow it was not evident under the prevailing excavation conditions. Were other immature graves to be as, possibly preferentially, shallow as the two recovered, the remains of such young individuals may have been lost as a result of agricultural activity. The immature bone was no more poorly preserved than that of the adults and there is no reason to suppose, in this instance, that preferential destruction of such bone had occurred due to an aggressive burial environment. While the overall proportion of males to females shows a bias towards the former, this balance would be almost fully redressed if the unsexed adults both proved to be female, consequently, comment on sexual distribution must be given with caution.

Table Human Bone 2. Summary of demographic data by phase

	Middle Iron Age	*Late Iron Age*	*?Iron Age*	*Romano-British*	*Late Romano-British*	*undated*	*total*
Immature							
neonate	-	-	-	1	-	-	1
infant	-	-	-	-	-	1	1
juvenile	1	-	-	-	-	-	1
total	1	-	-	1	-	1	3
Adult							
adult >18 yr	1	-	1	1 ??♂	-	1 ??♂	4 (2 ♂)
adult *c.* 25–30 yr	-	-	-	-	1♀	-	1♀
adult *c.* 35–45 yr	-	-	-	1♂	1♂	-	2♂
adult *c.* 35–55 yr	-	1♀	-	2♀	1♂	-	4 (3♀ 1♂)
adult >45 yr	1 ♂	-	-	-	-	-	1♂
adult >55 yr	-	-	-	-	1♂	-	1♂
total	2 (1♂)	1♀	1	4 (2♀ 2♂)	4 (1♀ 3♂)	1 (1♂)	13 (4♀ 7♂)

The apparent dearth of immature individuals is common both within archaeological assemblages as a whole and particularly in those comprising small grave groups or singletons such as represented here. Both of the latter forms include males and females suggesting neither differential treatment on the basis of sex or that the burials represent the remains of individuals from other than 'normal domestic' communities.

Small grave groups and isolated burials, often made in ditch fills or simple earth-cut graves, form the most common representation of the inhumation rite in this area of England in the Iron Age (Whimster 1981, 5, 18, 25, and 227–35). Whilst the Romano-British period saw the inception of, often quite large, formal cemeteries in association with towns, for example those around Baldock, Hertfordshire (Burleigh 1993), *c.* 24km to the south of Cambourne, the location and distribution of many rural Romano-British burials remained similar to that seen in the Iron Age; small groups of burials and singletons, associated with farmsteads or villas, often located close to boundaries (Esmonde Cleary 2000, 132–3, 137–8).

Skeletal indices and non-metric traits

Heavy fragmentation, particularly of skulls, and incomplete skeletal recovery severely limited the number of measurements it was possible to take from the surviving bones and the number of non-metric traits it was possible to record. A summary of the indices it was possible to calculate is given here (**Table Human Bone 3**) and some non-metric traits/morphological variations are indicated in **Table Human Bone 1**, all other detail is held in the archive.

No skulls survived sufficiently intact to allow for the calculation of the cranial or other indices. Stature was estimated for two of the late Romano-British individuals (**Table Human Bone 3**). The male is above the mean of 1.69 m for the 68 Romano-British males from the Baldock Area 15 cemetery (McKinley 1993), falling within the upper range from the latter (1.51–1.81.m). The female is below the average of 1.58m for the 43 females from Baldock (*ibid.*), falling towards the bottom of the recorded range (1.50–1.69 m).

Table Human Bone 3. Summary of metric data by phase

context	*stature*	*platymeric*	*platycnemic*	*sex*
Middle Iron Age				
5143	-	/74.2	-	male
Late Iron Age				
7379	-		/79.4	female
Romano-British				
1017	-	77.7/88.7	/81.4	female
60294	-	87.4	87.5	female
60302	-	85.1/77.4	-	male
80493	-	73.5	-	??male
Late Romano-British				
80365	1.51m (4' 11 ½ ")	87.8/83.4	84.8	female
80407	-	73.5	66.1	male
80424	1.78m (5' 10 ½")	73.3/74.5	-	male
80468	-	86.8/85.4	-	male

KEY: (left/right)

The platymeric index (demonstrating the degree of anterior-posterior flattening of the proximal femur) was calculated for nine individuals. The Middle Iron Age individual is in the platymeric range; the non-specific and late Romano-British are divided between the platymeric and eurymeric ranges. The mean and standard deviation (SD) for the whole group is 80.6 SD 6.0, the greatest homogeneity being seen amongst the three females with a mean of 85.0 and a SD of 4.1. The platycnemic index (illustrating the degree of meso-lateral flattening of the tibia) was calculated for five individuals (**Table Human Bone 3**). The four females all fall within the eurycnemic range and the one male in the mesocnemic (73.3/72.2). Platycnemia has been linked with plastic changes to the bone as a result of the frequent adoption of a squatting posture. The distal end of the tibia survived for examination in only three of the five individuals, two of the females showing the presence and the one male an absence of squatting facets. This suggests there was no link in this instance between the two conditions.

Variations in the skeletal morphology may, with other predisposing factors, indicate broad genetic relationships within a population, however, the heritability of some traits is open to question and some have been attributed to developmental abnormalities (e.g. Molleson 1993, 156). One late Romano-British female had numerous dental anomalies, including a badly impacted mandibular M3 – which at times must have caused great discomfort - and non-eruption of the mandibular 1st incisor, but none were shared with other individuals. Two of the Romano-British females had uni-lateral (one left, one right) *os acromialie* (non-fusion of the tip of the acromion process of the scapula). The acromion process was recovered from only two other burials, only one side surviving in each case, so it is not possible to calculate a meaningful prevalence rate for the condition, which is reported to occur in *c*. 3–6% of individuals (Stirland 1984; Knüsel 2000, 115–6).

Pathology

Pathological changes were observed in the remains of ten individuals; **Table Human Bone 1** contains a summary of the pathological lesions observed and the bones affected.

Dental disease

All or parts of five erupted permanent dentitions were recovered including three female (one Late Iron Age, one general Romano-British, one late Romano-British) and two male (late Romano-British). Given the small numbers involved the assemblage will largely be considered as a whole (**Table 4**) with period based comment where appropriate.

Table Human Bone 4. Summary of dentitions (late Iron Age and all Romano-British) by sex

	teeth	*socket positions*	ante mortem *tooth loss*	*caries*	*abscesses*
Female	84	67	-	5 (5.9%)	1 (1.5%)
Male	30	59	16 (27.1%)	2 (6.7%)	6 (10.2%)
Total	114	126	16 (12.7%)	7 (6.1%)	7 (5.5%)

Dental calculus (calcified plaque/tartar) was observed in all five permanent dentitions and in the one deciduous dentition. There was a clear increase in severity with age, the deciduous and young adult (80365) dentition showing slight deposits, and the older adult (80468) dentition heavy deposits, with mild-moderate deposits in all the other dentitions. Anterior and distal teeth were generally equally affected.

Ante mortem tooth loss was limited to two of the late Romano-British adult male dentitions, the age-related link being demonstrated by the loss of 13 teeth (48%) from the older male 80468. There was predominant loss of the distal teeth. The overall Romano-British rate for Cambourne is 16.2%, which is close to that of 14.1% given for the Romano-British sample (29 sites) in Roberts and Cox (2003, table 3.12). The maxillary alveolus from 80468 was much reduced as a consequence of the extensive tooth loss and was almost level with the palate.

Dental caries, resulting from destruction of the tooth by acids produced by oral bacteria present in dental plaque, was recorded in three adult dentitions; two female (Late Iron Age and unspecified Romano-British) and one male (late Romano-British). The overall Romano-British rate is 5.8%, which is slightly lower than the 7.5% given by Roberts and Cox for the period (2003, table 3.10). Where the origins of lesions were apparent they were equally divided between occlusal and contact area, although distal teeth were predominantly affected lesions were also seen in the anterior teeth.

Infection from several gross carious lesions had tracked into the supportive structure resulting in dental abscesses in two dentitions. Abscesses were seen in three of the Romano-British dentitions (rate 7%) and there are indications of an age-related increase in prevalence, the older adult male having four lesions, mostly in the extant anterior sockets. The male and overall Romano-British rates are greater than the mean of 3.9% from Roberts' and Cox's sample, but similar or higher rates have been recorded from other contemporary cemeteries in the sample (2003, table 3.13).

Very slight dental hypoplasia (developmental defects in the tooth enamel reflective of periods of illness or nutritional stress in the immature individual; Hillson 1979) was observed in one late Romano-British male dentition (2.3% Romano-British teeth). The rate is well below the 9.1% for the period (Roberts and Cox 2003, table 3.16).

Trauma

Evidence for minor trauma was recorded in the remains of all three late Romano-British males. The left 5th metacarpal shaft from 80407 has a well-healed fracture in the distal-mid shaft with slight medio-dorsal displacement. Such fractures most commonly result from a blow on the knuckles, such as may be sustained by punching someone/thing, or a fall on the hand (Adams 1987, 188). The displacement is slightly and is unlikely to have had any long-term consequences.

Disruption in the dorsal surface of the left scapula from 80468, in and around the glenoid neck/lateral border area, is likely to reflect either a fracture and/or soft tissue injury involving muscle luxation. The surviving fragment of scapula is small and the extent of the lesion is unclear. There are a smooth, uneven depressions and disorganised, smooth new bone around the base of the spine/lateral border, possibly associated with damage to the attachment for the long head of the triceps. This individual has bi-lateral strongly marked attachments in the proximal and mid-shaft humeri suggesting extensive use of the upper body for heavy work. The injury is clearly old and healed, and does not appear to have had a detrimental effect on the individual's ability to use his upper limb.

The right fibula shaft from 80424 has a smooth bony callus in the anterior border at the head of the *peroneus tertius* muscle attachment. The x-radiograph shows no evidence for fracture and the lesion is likely to reflect a well-healed tear to the muscle, which dorsiflexes and everts the foot.

Spondylolysis involves the loss of bony continuity between the superior and inferior articular processes, most commonly in the 5th lumbar vertebra (Adams 1987, 224; Roberts and Manchester 1997, 78; Aufderheide and Rodríguez-Martín 1998, 63–4). Some researchers believe there is an underlying congenital weakness to the condition, which is likely to represent a stress fracture, arguably in the immature individual (Adams 1986, 224). The condition is often symptomless but may cause deep lumbar back pain (*ibid.*). A single case was observed in a Romano-British male (60302).

Periosteal new bone

Infection of the periosteal membrane covering bone may lead to the formation of periosteal new bone. Infection may be introduced directly to the bone as a result of trauma, develop in response to an adjacent soft tissue infection, or spread via the blood stream from foci elsewhere in the body. It is frequently impossible to detect the causative factors involved in individual cases and the lesions are generally classified as indicative of a non-specific infection. Lesions were observed in between one and six skeletal elements from two individuals, one Late Iron Age adult female and one late Romano-British adult male.

The adult female 7379 has extensive areas of relatively thick, fined-grained periosteal new bone on the visceral surface of the dorsal shafts of a minimum of five left and one right rib. The location of the lesions indicates they developed in response to some form of lung infection which could include pleurisy, bronchitis or tuberculosis. There is an area of fine grained periosteal new bone on the medial side of the left tibia distal shaft from 80468. There is no indication of direct trauma to the bone. It has been observed that the long bones of the lower limb are more prone to infection via transmission for other foci than others and that usually only one bone is involved (Manchester 1983, 37; Roberts and Manchester 1997, 129–30). Lesions in the tibia in particular have also been linked with minor shin trauma, varicose veins and ulceration (Manchester 1983, 37; Roberts and Manchester 1997, 129–30).

Joint disease

Similar lesions – osteophytes and other forms of new bone development, and micro- and macro-pitting – may be formed as a consequence of one of several different disease processes, some also occurring as lone lesions largely reflective of age-related wear-and-tear (Rogers and Waldron 1995). Parts of nine spines were recovered and extra-spinal joints from 11 individuals (**Table Human Bone 5**).

Table Human Bone 5. Summary of joints recovered by phase

	Middle Iron Age	*Late Iron Age*	*Romano-British*
spinal joints		7 vertebral bodies	97 vertebral bodies
	12 dorsal portions	14 dorsal portions	90 dorsal portions
extra-spinal joints	32	75	542

Schmorl's nodes (a pressure defect resulting from a rupture in the intervertebral disc; Rogers and Waldron 1995, 27; Roberts and Manchester 1997, 107), commonly affect young adult spines. Lesions were observed in between one and eight vertebrae from four Romano-British individuals (two females and two males). The Romano-British rate of 18.5% is similar to that of 17.7% for the period shown by Roberts and Cox (2003, table 3.21). Most lesions were in the lower thoracic and lumbar vertebrae; none of the lesions were extensive or heavy; the rate was considerably higher for the males compared with the females (22.9% and 14.3% respectively). Degenerative disc disease results from the breakdown of the intervertebral disc and reflects age-related wear-and-tear (Rogers and Waldron 1995, 27). Lesions were observed in between one and six vertebrae from two Romano-British male spines; overall Romano-British rate 7.2%, males only 14.6%.

Lesions indicative of osteoarthritis (Rogers and Waldron 1995, 43–4) were seen in the remains of one Middle Iron Age and three Romano-British individuals; spinal lesion in three individuals (rate for Romano-British 4.4%) and extra-spinal lesion in a further three (Romano-British rate 1.7%). Between one and nine joints were affected in each case and although there is some indication of an age-related increase in the number of sites (and certainly in severity), the young adult female 80365 has lesions at three sites.

Post-mortem damage has masked the full extent and possibly the form of the lesions, but the left 1st metatarsal distal articular surface and the 1st proximal phalanx proximal articular surface from the elderly male 80468 have suffered gross, disorganised destruction of the articular surfaces. None of the original surfaces remains only an uneven, very roughly concave area of exposed trabecular bone with some sclerosis but no associated proliferate new bone formation. One proximal phalanx head (?2nd) shows similar destruction of the lateral half and planter side of the head with no new bone formation, leaving uneven surface with slightly 'melted' appearance. The bones of the right foot did not survive so it is unknown if the condition was uni- or bi-lateral. The lesions have a very different appearance to those seen in association with osteoarthritis in this individual and the most likely diagnosis in this case appears to be rheumatoid arthritis (Rogers and Waldron 1995, 55–63).

Lone osteophytes (new bone growth on joint surface margins) often appear to be a 'normal accompaniment of age' (Rogers and Waldron 1995, 25–6). Lesions were seen in the spines of seven individuals (one Middle/Late Iron Age and six Romano-British) and at extra-spinal sites in six Romano-British individuals. Between one and 13 spinal sites were affected in each individual, and between one and four extra-spinal sites. Some of the lesions may be reflective of the early stages of osteoarthritis. As with osteophytes, macro- and micro-pitting in the surfaces of synovial joints may develop in response to a number of conditions and it is not always possible to ascertain the specific cause of individual lesions, though it is probable that they are most commonly reflective of the early stage of osteoarthritis. Lone lesions were seen in the remains of four individuals with lesions in between one and three joint surfaces in each case. Exostoses are bony growths which may develop at tendon and ligament insertions on the bone. Causative factors include advancing age, traumatic stress, or various diseases (Rogers and Waldron 1994, 24–5). It is not always possible to be conclusive with respect to the aetiology of particular lesions, but they are commonly seen in the anterior surface of the patella and posterior surface of calcanea where they reflect activity related stress. Lesions were observed at one or both of these locations in four individuals.

Discussion

Small quantities of Iron Age material were recovered from the Romano-British pit 80421 at the north end Jeavons Lane. The fragment of canid gnawed human femur

(80493) from the pit was in different condition to most of the other human bone from the site and it is possible that this too is residual Iron Age. While it may have been exposed to canid activity due to accidental disturbance of an *in situ* grave, its presence and singular condition do highlight to possibility of the mortuary rites of exhumation and/or exposure having been practiced in the area in the Iron Age.

Cambridgeshire lies within the northern margins of the area of south-east England where cremation formed the predominant mortuary in the Late Iron Age, Whimster listing 19 sites in the county with cremation graves of this date (1981, 359–62; Philpott 1991, 6–7). Cremation formed the major mortuary rite in the early Romano-British period, with relatively substantial cemeteries being recovered both in association with towns (eg, Baldock, Burleigh 1993) and in more 'rural' areas (eg, Stansted, Essex, Havis and Brooks 2003). Yet despite the recovery of the remains, albeit few, of inhumation burials of both Iron Age and Romano-British date – suggesting continuity in habitation of the area – no cremated remains were discovered in the extensive archaeological investigations at Cambourne. This absence may be due to fortuitous placing of trenches but may also reflect a broader archaeological significance; for example, a break in occupation or an adherence to the practice of inhumation despite the widespread adoption of cremation.

The late Romano-British burial 80424, a mature adult male, was made supine and extended in a lone grave cut (surviving depth 0.41 m) at the north end of Jeavons Lane. The grave was just long enough to accommodate the body, minus the head. All the lumbar and thoracic vertebrae were recovered together with two of the lower (between C5 and C7) cervical; the remaining four cervical vertebrae were absent, together with the entirety of the skull. There is no surviving osteological evidence to indicate severing of the neck, but the mid-cervical region represents the most common vicinity for removal of the head in decapitation (Harman *et al.* 1981; Manchester 1983, 63), and such a point of severance would correspond with the missing cervical vertebrae.

There is a well recognised tradition in the Romano-British period for decapitation – sometimes apparently *peri-mortem* and under coercion but more frequently 'ritual' and probably *post-mortem* – with subsequent placement of the head either in its normal anatomical position, or between or to one side of the legs (Harman *et al.* 1981; Philpott 1991, 77–83; McKinley 1993a and b; Boylston 2000, 367–8). Burial of the headless corpse minus deposition of the head within the grave has also been recorded and it has been suggested that such depositions represent the result of executions or battle trauma (Philpott 1991, 77–83). Philpott records five Romano-British sites in Cambridgeshire with decapitations, including one from King's Dyke, Whittlesey where, as here, no skull was recovered (*ibid*., fig. 23). The remains of a probable five (2.7% of the cemetery population) decapitated burials were recorded in the Baldock Area 15 cemetery, the skull being deposited in the grave with the rest of the corpse in each instance (McKinley 1993a; 1993b).

The absence of the skull from the relatively deep grave 80423 places this late Romano-British male in the first of Philpott's three categories (1991, 77), possibly as a victim of an execution or violent death. There is no evidence of *peri-mortem* trauma to the skeleton such as may have resulted if he had died in a battle or skirmish. His lone burial away from the other individuals of this date, buried together in the southern half of Jeavons Lane, may indicate a deliberate ‘distancing’ of this individual from his contemporaries. Whether such an action may relate to him representing an executed outcast from the community or an individual ritually separated both geographically in terms of his placement and by the distinction of having his head removed, is largely a matter of conjecture. Rural burials in this period often comprised singletons or small groups and the location of 80424’s grave may be of no unusual significance.

Context/site	*cut*	*deposit type*	*quantification*	*age/sex*	*pathology*
Middle Iron Age					
1694 (LC)	1695	inh. burial	c. 30%	juvenile c. 5–6 yr	calculus
1697 (LC)	1698	inh. burial	7 frags. l.	adult >18 yr	
5143 (LC)	5142	inh. burial	c. 25%	adult >45 yr male	osteoarthritis – 2L; pitting - auricular surfaces; osteophytes - auricular surfaces; exostoses – patella
Late Iron Age					
7379 (LC)	7386	inh. burial	c. 80%	adult c. 35–50 yr female	caries; calculus; periosteal new bone – visceral ribs (bi-lateral); mv – all M3 absent
?Iron Age					
7346 (LC)	7345	redeposited	2 frags. u.	adult >18 yr	
Romano-British					
1017 (LC)	1018	inh. burial	c. 85%	adult c. 35–55 yr female	osteoarthritis – 1 left costo-vertebral; Schmorl's node – T12; osteophytes – left proximal ulna, left carpal, right acetabulum, left auricular surface, C2, T7-8 bsm, L3-4 bsm; pitting – right acetabulum, auricular surfaces; exostoses – calcanea; mv – non-fusion C1 posterior synchondrosis, *os acromialie*
5130 (LC)	5101	redeposited	1 frag. l.	neonate	
60294 (KP)	60292	inh. burial	c. 50%	adult c. 40–50 yr female	caries; abscess; calculus; osteophytes – C1-2; mv – mandibular M3 5 cusp
60302 (KP)	60300	inh. burial	c. 45% a.u.l.	adult c. 35–45 yr male	osteophytes – right hip; spondylolysis – L5
80493 (JL)	80421	redeposited	c. 5% l.	adult >18 yr ??male	
Late Romano-British					
80365 (JL)	80299	inh. burial	c. 97%	adult c. 25–30 yr female	calculus; osteoarthritis – right hip, 1T, 1L; Schmorl's node – T7-12; osteophytes – left hip, 2 left rib facets, T8 bsm; mv – maxillary M3 multi-fissured, enamel pearl, mandibular left M3 impacted, mandibular left I1 unerupted, mandibular M3 5-cusp, maxillary incisors shovelled, *os acromialie*
80407 (JL)	80406	inh. burial	c. 96%	adult c. 35–45 yr male	*ante mortem* tooth loss; caries; abscess; hypoplasia; calculus; fracture – left 5th metacarpal; Schmorl's node – T3, T6-L5; osteophytes – left navicular, left 1st prox. IP (foot), right prox. IP , 1 left rib head, 1 right rib facet, C1, C5-7 bsm, T1 bsm, T5-8 bsm, T12-L4 bsm; exostoses – calcanea; mv – metopic suture
80424 (JL)	80423	inh. burial	c. 75% a.u.l.	adult c. 40–50 yr male	ddd – T6-8, T11-12, L4; Schmorl's node – T6, T8-L2; periosteal new bone – right distal femur; bony callus – right fibula; exostoses – calcanea; articular surface defect – left 1st proximal phalanx (foot); pitting – left acromio-clavicular, right sterno-clavicular; osteophytes – right glenoid, left proximal ulna, right acetabulum, left patella, 1T ap
80468 (JL)	80467	inh. burial	c. 80%	adult >55 yr male	*ante mortem* tooth loss; abscess; calculus; osteoarthritis – hips, knees, right scaphoid, right 3rd Mtc-P, 1st prox. IP (hand, unsided), C3, 1L; ddd – S1; ?fracture/dislocation – left scapula; periosteal new bone – left tibia shaft; ?rheumatoid arthritis – left 1st Mt-P joint (foot); pitting – right temporo-mandibular, right glenoid, left sacro-iliac; osteophytes – right glenoid, left distal humerus, 1st prox. IP (hand), left prox. IP (foot), C1-2, 1L bsm, S1 bsm
Undated					
900026 (LCF)	u/s	redeposited	1 frag. s.	adult >18 yr ??male	
ON749 (LC)	u/s	?	c. 5% s.a.	infant c. 1–4 yr	

KEY: ddd - degenerative disc disease; mv - morphological variation; C – cervical; T – thoracic; L – lu mbar; bsm - body surface margins; ap - articular process; skeletal elements stated in quantification only where all areas not represented: s. – skull, a. – axial skeleton, u. – upper limb, l. – lower limb

Table Human Bone 1. Summary of results from analysis of human bone

Twelve excavations were carried out by Wessex Archaeology within the Cambourne Development Area. Situated on the clay uplands west of Cambridge, which have seen little previous archaeological investigation, the results presented here are important in demonstrating the ebb and flow of occupation according to population or agricultural pressure.

Short-lived Bronze Age occupation was followed in the Middle Iron Age by small farming communities with an economy based on stock-raising and some arable cultivation. The Late Iron Age seems to have seen a recession, perhaps partly due to increased waterlogging making farming less viable.

From the mid-1st century AD new settlements began to emerge, possibly partly stimulated by the presence of Ermine Street, and within a century the area was relatively densely occupied. Several farmsteads were remodelled in the later Romano-British period, though none seems to have been very prosperous.

Dispersed occupation may have continued into the early 5th century at least, followed by a hiatus until the 12th/13th century when the entire area was taken into arable cultivation, leaving the ubiquitous traces of medieval ridge and furrow agriculture.

ISBN 978-1-874350-49-1

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