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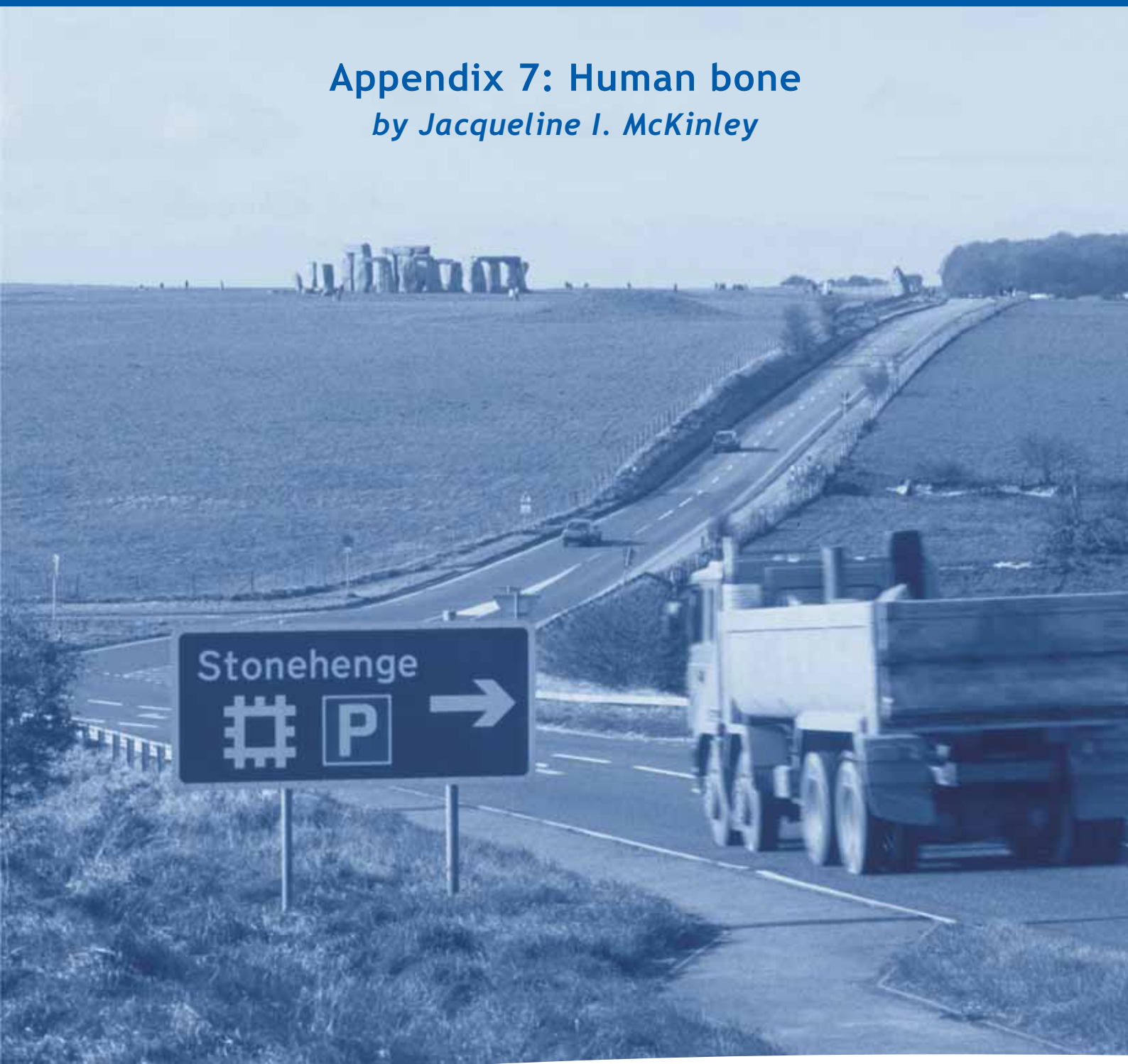
Archaeology on the A303 Stonehenge Improvement

Appendix 7: Human bone

by Jacqueline I. McKinley



Wessex Archaeology

Archaeology on the A303 Stonehenge Improvement

By Matt Leivers and Chris Moore

With contributions from
Michael J. Allen, Catherine Barnett, Philippa Bradley, Nicholas Cooke, John Crowther, Michael Grant, Jessica M. Grimm, Phil Harding, Richard I. Macphail, Jacqueline I. McKinley, David Norcott, Sylvia Peglar, Chris J. Stevens, and Sarah F. Wyles

and illustrations by

Rob Goller, S. E. James and Elaine Wakefield

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Appendix 7: human bone

Jacqueline I. McKinley

Human bone was recovered from two sites: two Beaker period inhumations (WA50538) and an Iron Age–Romano-British settlement (WA50157)

Introduction

Human bone from two Early Bronze Age (Beaker) contexts from WA50538 was received for analysis, including the remains of at least one inhumation burial (1515, grave 1502). The nature of the second deposit (1507) is uncertain due to disturbance and poor bone preservation, but it too may represent the remains of a burial. Both deposits were made in features situated immediately north of the Wilsford G1 barrow.

Human bone from four contexts from WA50157, three Early/Middle Iron Age (E/MIA) and one Romano-British (RB), was received for analysis, including the remains of one E/MIA inhumation burial (Table 1). The bone from other contexts all represented redeposited material. The human remains were recovered from features excavated within three of the six test trenches (2, 5 and 6) located across the Iron Age settlement revealed through aerial photography and geophysical survey to the west of Winterbourne Stoke.

Methods

The degree of erosion to the bone was recorded using the writer's system of grading (McKinley 2004, fig. 7.1–7). 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 (Bass 1987; Buikstra and Ubelaker 1994). Measurement were taken (Brothwell and Zakrzewski 2004) and skeletal indices calculated where possible (Trotter and Gleser 1952; 1958; Bass 1987). Non-metric traits were recorded in accordance with Berry and Berry (1967) and Finnegan (1978). Details of the results are held in the archive.

Results

WA50538

The remains from grave 1502 represent those of an adult male, *c*. 23–27 years of age at death (*c*. 86% skeletal recovery) and those from pit/grave 1506 a neonate *c*. 2–5 months old (*c*. 5% recovery; upper and lower limb elements).

The deposits were recovered from cuts which had survived to 0.55 m and 0.23 m, and there was some suggestion of post-depositional disturbance to the shallower of the two (1506), though it is unclear by what mechanism. The bone from 1506 is in very poor condition, being heavily eroded (grade 4–5); that from 1502 is better preserved (grades 2–4) with the bones of the left upper limb showing poorer preservation than those elsewhere and there was almost total loss of the vertebral bodies. The skull is heavily fragmented (mostly fresh breaks) and slightly warped as a result of soil pressure. Dry longitudinal cracks, suggestive of exposure to the elements, were observed in the frontal vault, clavicles, and right scapula.

Most of the bone loss from grave 1502 was clearly the result of poor preservation due to the action of the burial micro-environment. The absence of any parts of the right innominate and the sacrum is, however, unexpected given the depth of the deposit, and the condition and survival of the rest of the bone. The body had been laid on its left side and it is generally this lower-most side of

the skeleton which shows poorer preservation. Some parts of all areas of the spine were recovered with the exclusion of the sacrum, and the left innominate is almost complete and in a good state of preservation. It appears possible, therefore, that the grave was revisited at some time following decomposition of the soft tissues, at which time the right innominate and sacrum were deliberately removed. There is some stratigraphic evidence to suggest that the grave may have been sealed by some form of 'temporary' cover rather than backfilled after the burial was made, which would have facilitated later access without causing any apparent disturbance to the grave. A number of graves at Boscombe Down can be shown to have been revisited, sometimes resulting in significant disturbance to the original burial. In each case the corpse must have been at least almost fully decomposed, a process which could take from as little as a few months to *c*. 5 years dependent on a number factors (Evans 1963; Henderson 1987).

With an estimate stature of 1.81 m (*c*. 5' 11 ¼") the young adult male 1515 would have presented an unusually tall figure amongst his contemporaries. Data from recently excavated graves of this date at Boscombe Down, Wiltshire, show a range of 1.74–1.78 m (*c*. 5' 8 ½"–5' 10"), with an average 1.77 m for the adult males (McKinley in prep.). Data from five other Beaker period sites in southern England (13 males):– Barnack, Cambridgeshire (Wells 1977); Amesbury, Wiltshire (Brothwell *et al.* 1978); Stonehenge, Wilshire (O'Connor 1984); Chilbolton, Hampshire (Stirland 1990); and Fordington Farm, Dorset (Jenkins 1991), show a slightly broader range of 1.63–1.78 m, with a mean of 1.73 m. In their 2003 survey of 61 Bronze Age males Roberts and Cox calculated a range of 1.67–1.77 m, with a mean of mean 1.72 m (86); a similar mean being recorded by Brothwell (1973, *c.* 1.74 m ; 1973, table 149).

The platymeric index (demonstrating the degree of anterior-posterior flattening of the proximal femur) for 1515 fell within the platymeric range (77.0/82.8); while the platycnemic index (degree of medio-lateral flattening of the tibia shaft) fell in the eurycnemic range (72.6/74.3). The platymeric index mean from the contemporaneous Boscombe Down material fell in the eurymeric range and that for the platycnemic index within mesocnemic range, but there is evidenec to suggest most of these six individuals comprised a homogeneous group from outside the region; ie, the two groups of material derived from very different populations.

Although the muscle attachments were not strongly developed in this relatively young male (1515), his general skeletal morphology was very large and relatively robust, as reflected in his estimated stature.

Few pathological lesions were observed. Slight dental calculus (calcified plaque/tartar) was seen on most teeth within the adult dentition. Very slight dental caries, resulting from destruction of the tooth by acids produced by oral bacteria, were recorded in the occlusal fissures of four mandibular molar teeth giving a rate of 12.5% (4/32 teeth). Very slight dental hypoplasia was observed in one molar crown (maxillary M2); such developmental defects in the tooth enamel are formed in response to growth arrest in the immature individual, the predominant causes of which are believed to include periods of illness or nutritional stress (Hillson 1979). Comparison of rates from a single individual with larger groups may present a misleading view and is of limited value. The caries rate here is considerably higher than the 2.2% from the Boscombe Down Beaker graves (McKinley in prep.) and the 4.8% for the Bronze Age in general given by Roberts and Cox (2003, table 2.28 respectively). While this may imply some variation in diet between this individuals and those within the comparative samples, it may also be that this individual had a distinctive oral chemistry or an un-detected enamel defect which rendered him particularly susceptible to caries formation.

WA50157

The bone is generally in fairly good condition (grades 0–1), displaying mostly old breaks. The neonatal bone from the fill of pit 285 is slightly abraded, but generally none of the remains appear to have been subject to exposure or repeated episodes of disturbance and redeposition. The skull from grave 610 is heavily fragmented, and several other bones show fresh breaks with no adjoining fragments. The grave had survived to a depth of only 0.20 m. The few fragments of missing skeletal

element are chiefly from the right side and, the body having been laid in a crouched position on its left side, the loss is probably the result of truncation of the upper levels of the fill in antiquity and/or during machine stripping of the site.

Some slight dark patchy staining observed to some of the long bones shafts and the exocranial vault of 609 may be indicative of the body having been wrapped/covered by some form of organic material (eg, leather/skins) at the time of burial.

A minimum of three E/MIA and one RB individual are represented within this small assemblage. The remains of three other burials were recorded in the evaluation but left *in situ*, including; two RB graves cut into ditch 114 in Trench 1, and one undated but probably prehistoric grave situated close to 610 in Trench 6. Only a very small proportion of the settlement was subject to intrusive excavation and it is highly likely that further burials from both periods remain *in situ* on the site. Consequently, any comment on the demographic data recovered would be in appropriate. It may, however, be pertinent to observe that the neonatal remains of Iron Age date were recovered from a different part of the site to those of older individuals, which may reflect differential mortuary treatment of such very young members of the population.

Few pathological lesions were observed. Very slight dental calculus (calcified plaque/tartar) was seen on three of the eight surviving teeth in the one dentition recovered. Slight, porotic *cribra orbitalia* was observed in the one orbit recovered (Table 1; Robledo *et al.* 1995). The condition is generally believed to result from a metabolic disorder connected with childhood iron deficiency anaemia, although Molleson (1993) argues that vitamin C deficiency and intestinal parasites – leading to iron loss – may also have played a contributory role.

Table 1. Summary of results from analysis of human remains

Context	*Cut*	*Deposit type*	*Quantification*	*Age/sex*	*Pathology*
			Early/Middle Iron Age		
285	287	redep.	*c*. 5% l.	neonate *c*. 0–1 mth	
617	617	redep.	*c*. 1% u.	adult *c.* 18–45 yr	
609	610	inh. burial	*c*. 96%	juvenile/subadult *c*. 11–14 yr ??male	calculus; *cribra orbitalia*; surface defect – distal tibia
			Romano-British		
562	554	redep.	*c*. 5% l.	adult >25 yr ??male	enthesophytes – femur shaft

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This volume reports on the archaeological works undertaken between 1998 and 2003 as part of the A303 Stonehenge Improvement highway scheme promoted by the Highways Agency.

The A303 trunk road and the A344 which pass Stonehenge are widely agreed to have a detrimental effect on its setting and on other archaeological features within the World Heritage Site. Around Stonehenge there is noise and visual intrusion from traffic and also air pollution. Each year nearly one million people visit the World Heritage Site and surroundings, using visitor facilities intended to cater for a much smaller number.

Many plans that might improve this situation have been examined, involving partnership working across many organisations. Common to all these has been the aim of removing traffic from the area of Stonehenge and at the same time addressing highways issues with regard to road capacity and safety.

This volume sets out the objectives of the extensive programme of archaeological work that was undertaken to inform the planning of the highway scheme, the methods used, the results obtained, and to explain something of the significance of works which provided a 12 km transect across the WHS and beyond: the first of its kind ever undertaken.

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