Chapter 10: The environmental evidence

THE HUMAN SKELETAL REMAINS

by Angela Boyle

Introduction

The human skeletal assemblage comprised the remains of only 17 individuals. It is likely that the cemetery was not revealed in its entirety since the excavation area was defined by the limits of the proposed development. Further graves may lie beyond the limits of the excavated area, particularly to the NW and the SW. The distribution of graves strongly suggests that some may have been destroyed or obscured by modern activity. Staining and chemical pollution of the soil in the form of large mounds of pulverised fuel ash (PFA) may well have obscured the location of further graves.

It is entirely plausible that the NE and SE extent of the cemetery was delimited by the Roman ditches 3 and 39. This does however fail to explain the spread of graves either side of the R-B ditch 87. (For a discussion of the extent of the cemetery see chapter 11.)

The sample of burials cannot be considered to be representative and it is extremely unlikely to constitute the entire population of any related settlement. It is particularly important to emphasise that neither the spatial nor the chronological extent of the cemetery can be closely defined (Stirland 1989, 62). In the case of Didcot we are almost certainly looking at a time span of somewhere between 50 and 100 years (see Chronology, Chapter 11 below).

The state of preservation of the skeletal assemblage was generally poor, the only exception being skeleton 5 which had one surviving complete long bone. This is unsurprising given the industrial environment in which the bones were located. The height of the water table was also a factor, and particularly affected skeletons 1 and 9. Water in these graves had to be pumped out constantly in order that excavation might proceed and this had obvious implications for the level of preservation (Henderson 1987, 46). (The osteological details are summarised in Table 40.)

Age

Two of the subadults could be aged quite precisely by a combination of methods. The methods used were based on evidence of epiphyseal fusion (Workshop 1980; Brothwell 1981; Bass 1987) and dental development, encompassing eruption, crown development and root closure (Van Beek 1983). Diaphyseal lengths could not be assessed as there were no complete subadult long bones. The age of skeleton 12 was based on the general size and appearance of the long bones, none of which were complete

No attempt was made to apply closely defined age ranges to any of the adult individuals. Instead the following classificatory system has been employed:

young adult — probably 20s

adult — probably 30–50

old adult - 50+

This classification seems particularly appropriate given the poor preservation of the sample. The only ageing method that could be applied was the classification of the level of dental attrition (Brothwell 1981, 72). No complete auricular surfaces survived. Skulls were always badly damaged and this precluded the use of any composite methods for the assessment of suture closure. Processes of degenerative change were also considered. The reliability of an assessment of attrition and subsequently age must be questionable when based on less than the full set of molars. Skeleton 4 had only one surviving molar tooth. The dentition of skeleton 2 exhibited very heavy attrition as well as vertebral change in the form of osteo-arthritis of the facet joints and osteophytes. Both are comparable in degree to that of skeleton 4.

Sex

The sexing of adult individuals was based on pelvic and skull morphology and where possible limited metric data (Workshop 1980). No attempt was made to sex subadults. Adults were sexed independently of grave good evidence although in no case was there disagreement. The sample comprises four subadults (6, 7, 9, 12), four females (2, 4, 5, 11), three males (1, 3, 8), and six unsexed adults (10, 13, 14, 15, 16, 17).

Stature

The stature of only one individual could be calculated using the regression equation for the female humerus of Trotter and Gleser (1952, 1958; reproduced in Brothwell 1981, 101). The stature of skeleton 5 based on the formula for the left humerus was calculated at 1.54 m.

Discontinuous traits

Discontinuous traits were uncommon though there were a few cases in which it was possible to actually score their presence or absence. Skeleton 8 had a posterior bridge on the right side of the atlas vertebra and two large bones were present, one on either side of the lambda.

Pathology

Two individuals exhibited some vertebral degeneration. Osteophytes were present on the inferior left articular facet of the axis vertebrae and the superior articular facet of the third cervical vertebra of skeleton 2. Areas of both dense and porous bone were present in conjunction with marginal osteophytes. The latter had caused an increase in surface area of the facets though they still seemed to have been articulating efficiently. Osteophytes were also present on an unidentified articular facet and a probable lower thoracic vertebral body. The osteophyte on the latter projected up to 5 mm. All these features appear to be the result of straightforward degenerative processes, acceptable given the estimated age of this individual (45+ years). The second cervical vertebra through to the first thoracic were certainly identified. In the case of skeleton 4 all vertebrae were very fragmentary. The inferior articular facets of one incomplete ?upper cervical vertebrae showed eburnation, limited porosity and intermittent osteophytic lipping. The poor condition of all surviving vertebrae may have caused an under representation of degenerative osteo-arthritis.

An area of porotic bone measuring 5.8 x 4 mm was present in the left orbit of skeleton 2. Similar pathology was noted on the left and right orbits of skeleton 9. There was no associated *cribra parietalia* in either case. The etiology of pitting of the roof of the orbits is not fully understood but it has been considered to be representative of childhood iron deficiency anaemia (Angel 1966; Stuart-MacAdam 1991).

A probable osteoma was present towards the posterior portion of the left parietal of skeleton 1. This appeared as a rounded mound of bone which protruded approximately 3–4 mm, and had a diameter of 23 mm. This is the most common form of simple or benign tumour and it is usually found on the external vault of the cranium.

The dentition of nine individuals had survived. Attrition was common among the adults. At least three of the molar crowns belonging to skeleton 2 had worn away completely on one side. An abscess was associated with the lower left first mandibular molar. This is a common occurrence alongside advanced decay. Calculus recorded on the dentition of skeleton 14 was severe in the case of a possible maxillary third molar. It obscured the entire crown and extended almost to the root tip on one side. The angle of deposition suggests considerable attrition had already occurred. The only instance of caries was an interstitial cavity apparent on a premolar belonging to skeleton 2. Enamel hypoplasia was present on the dentition of skeletons 2 and 8. This occurs as a result of metabolic disturbance which is caused by either illness or malnutrition during childhood.

Conclusion

This group is a small one and preservation is extremely poor. This makes it impossible to come to any conclusions regarding population structure, general health and mortality.

ORGANIC REMAINS

by Esther Cameron

Methodology

The iron small finds from the site were examined for organic remains and traces of mineralised wood, horn and textile were discovered on 12 of them. Their level of preservation is generally poor: no detail of weaving technology could be recovered from the textile material and only two woods were identifiable.

A binocular microscope was used to study the finds initially and samples from Graves 4, 5, 8 and 14 were further examined by scanning electron microscopy.

Results

Horn handled knives

Graves 1, 2, 4, 5, 7, 8, 11, 13 and 14
There were nine horn handled knives. The grain direction of the horn runs with the blade direction in all cases. No joins are visible and the handles are all very worn.

Textile remains

Graves 1, 5, 13, 14
Yarn fragments representing textile remains were found on knife blades. Impressions of textile remains are commonly found on knives of this period due to the practice of carrying them tucked into or attached to the waistband.

Grave 5
Yarn fragments representing textile remains were found on a pair of girdle hangers, or chatelaine components. As with the knives, this material probably derives from an item of costume.

Table 41 Environmental species identification

Taxa identified	Common name	sample 1	sample 2
Polygonum sp.	bistort	1	–
Vicia/Lathyrus sp.	vetch/vetchling	6	3
Hordeum vulgare (hulled)	hulled barley	3	2
H. vulgare (hulled, median grain)	hulled barley	1	–
H. vulgare ssp.hexastictium (hulled, lateral grain)	6–row hulled barley	2	–
Triticum dicoccum/spelta	emmer/spelt wheat	1	1
Triticum/hordeum sp.		7	4
cereal indeterminate		7	6

Wood remains

Grave 1
Wood upon two iron fittings with rivets is probably *Quercus sp.* (oak). Both longitudinal and transverse grain directions are visible on one side of each fitting, suggesting dovetail jointing, possibly from a small box.

Grave 8
Remains of a haft in a spear socket were identified as *Alnus sp.* (alder).

ANALYSIS OF SUSPECTED GOLD AND SILVER TEXTILE FRAGMENTS

by Elisabeth Crowfoot with Penelope Walton Rogers

Grave 12
Samples of damp soil believed to contain textile fragments appeared to have possible impressions of threads, but on examination nothing of a textile nature was identifiable; brushing removed only earth, but with very bright sand grains, which may have caught sunlight and suggested gold. A small lump was dissolved in water, with the same result. In a few places small areas with the appearance of shiny red-gold and blue metal flecks were noted. These were sent to the Textile Research Associates at York for analysis.

Penelope Walton Rogers reported:

Under the microscope the area identified by the excavators as 'gold' was visible, this was seen to be a thin layer which was reddish bronze in colour and looked like the surface patina from an object. Ian Panter to whom it was shown, has seen material like this on the surface of Anglo-Saxon copper alloys, when they have been preserved in anoxic conditions (eg. waterlogged). The blue which the excavators described was not clear but anoxic soil can include blue deposits such as the vivanite found at Coppergate, York. The entire cemetery need not be waterlogged as a poorly drained pocket within a single grave can suffice. In conclusion, then, the material is suggestive of a corrosion layer from the surface of a copper alloy object

THE CHARRED PLANT REMAINS (Table 41)

By John Letts

Two samples containing charcoal and charred seeds were examined in the Environmental Archaeology Unit of the University Museum, Oxford. Both derive from the pit or hearth 80 within the sunken featured building 38.

In general the samples were very similar in composition and contained a small amount of poorly preserved cereal — primarily hulled barley (*Hordeum vulgare*) and hulled wheat (probably *Triticum spelta*). Two definite lateral grains of hulled barley confirm the presence of the 6-row subspecies (*H.vulgare. ssp. hexastictium*). Most of the cereal grains and grain fragments could not be identified to genus. Barley was a staple grain in Saxon Britain, and although spelt was cultivated in the early Saxon period, it was quickly superseded by bread wheat (*Triticum aestivum s.l.*) as the staple wheat crop.

Both samples contained relatively large-seeded specimens of a vetch/tare or vetchling (Vicia/Lathyrus sp.) — but apparently not the cultivated form of the common vetch (Vicia sativa ssp. sativa). Tares and vetchlings are ubiquitous weeds of cultivated fields, grassland and waste places.

One fragment of a bistort (Polygonum sp.) represents the only other weed seed recovered from either sample, but provides little botanical information.

THE ANIMAL BONES (Table 42)

by Sheila Hamilton-Dyer

A small quantity of bone material was presented for analysis. The assemblage comprised 51 animal bone fragments. The bone was generally in good condition although some was slightly eroded. The majority of fragments were of cattle with some sheep or goat and pig. There was also a horse first phalanx. A few fragments could be identified only as being of cow or horse size (Lar) or sheep or pig size (Sar). Canid gnawing was evident on six bones. Butchery using knives and cleavers was observed on five fragments including a cattle horn core which had been severed from the skull and had further chop marks, perhaps as a result of the removal of the horn. The butchery, gnawing and modern breaks prevented measurement of most bones. The few cattle measurements were comparable with those from Wessex Saxon sites such as Melbourne Street, Southampton (Bourdillon and Coy, 1980, 108). The horse toe bone was larger than that of a modern New Forest pony, but not as large as a modern race horse.

Table 42 Species and anatomy catalogue of animal bone fragments

Context	Species	Anatomy
4/-/1	cattle	acetabulum, horn core, jaw,
		upper 1st molar, rib, 2 scapulae
		(from different individuals)
	sheep/goat	metacarpus, 2 metatarsi, scapula, tibia
4/A/1	cattle	jaw, first phalanx, upper premolar
	horse	first phalanx
7/-/-	lar	2 fragments
9/A/1	lar	4 fragments
18/A/2	cattle	radius
	pig	jaw
24/A/1	cattle	lower 3rd molar
38/1	cattle	calcaneum, metatarsus, 5 rib, 2 vertebrae
	sheep/goat	metatarsus, tibia
	pig	ischium
	sar	4 fragments
38/2	lar	1 fragment
38/C/1	cattle	rib
38/D/1	cattle	ilium, upper 4th premolar,
		upper 1st molar, upper 2nd molar
45/A/1	cattle	humerus
88/A/1	lar	3 fragments