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2005

Ancient Monuments Laboratory
Report 33/88

REDCASTLE FURZE- THE HUMAN BONE

Gillian Stroud

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Summary

A minimum number of 11 individuals recovered from discrete burials and miscellaneous bone from Redcastle Furze were examined. Poor preservation meant that information was limited, with ageing only possible for subadults, and sexing virtually impossible. Dental pathology was limited to severe enamel hypoplasia in one individual, while skeletal pathology consisted of degenerative changes to the spine, a fractured spinous process and spondylolysis, all in the same individual, and a case of periosteal new bone on the lower leg bones of a second individual.

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REDCASTLE FURZE - HUMAN BONE

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The human bone from excavations at Redcastle Furze consisted of 5 discrete inhumations and a small amount of miscellaneous bone recovered from various pits. Preservation was generally very poor, with frequent loss of vertebral bodies, long bone ends and much of the outer surface of long bone shafts. The burials were examined for details of age, sex, stature, dental and skeletal anomalies and pathology. However, the poor preservation considerably reduced the amount of information which could be recorded. Individual summaries are listed at the end of the report, with complete inventories being kept in the archives. The miscellaneous bone was also examined, in order to see whether any could be matched with the discrete burials, and also to obtain a minimum number of individuals from the site as a whole. When the miscellaneous material was compared with the discrete burials, a further 6 individuals were found to be represented. In addition it was possible that the ulna and femur from F32 could belong to the skeleton F33, although post-mortem damage did not permit a definite assignment. A full list of the miscellaneous bone is kept in the archives.

Demographic results

Age: The inhumations consisted of 2 adults and 3 subadults, one subadult (F1) being aged ca 10-14 years and two (F18 and F41) between 14-18 years. The two adults could not be aged with any accuracy, although one (F25) appeared to be a young adult and the other (F33) in middle or old age. A further 4 adults, 1 subadult aged 8-12 years, and 1 infant, were represented by the miscellaneous material recovered from pits.

Sex and stature: One of the adults (F33) was sexed as ?female; poor preservation of the second adult did not permit even a tentative assignment of sex. Stature of the former was estimated to be 1.64m (5'4").

Skeletal Anomalies

F18, one of the subadults, had Wormian bones in the lambdoid and sagittal sutures, and retention of the metopic suture. This individual was the only one for whom any cranial non-metric traits could be recorded.

Dentition

Three individuals (F1,F18 and F25) had partial dentitions present and there were in addition a further two from the miscellaneous bone. A total of 44 permanent teeth and 4 deciduous teeth were examined. No carious cavities were visible; however the majority of teeth were in poor condition, often speckled or covered with a black deposit and sometimes with postmortem chipping of the enamel. This made the recording of enamel hypoplasia impossible in most cases, with the exception of a subadult from the miscellaneous bone (F212), whose permanent teeth showed marked hypoplasia, 5 or 6 clear lines being visible on each of the anterior teeth. This individual had clearly suffered repeated periods of stress, such as malnutrition or illness, during the development of the tooth enamel.

Pathology

F18, a subadult, had evidence of cribra orbitalia, suggestive of iron deficiency anemia, present as an area of pitting in the damaged right orbital roof. F33 had degenerative changes to the intervertebral facets of 4 upper/mid thoracic vertebrae, with lipping, pitting and eburnation. The lowest of these 4 vertebrae had a healed fracture of the spinous process, with slight inferior displacement of the terminal half of the process. Such a fracture would probably have been caused by a direct blow from a hard object while the individual was in the flexed position. In addition, the same individual had spondylolysis of the 4th lumbar vertebra, where non-union of the posterior part of the neural arch had occurred at the pars interarticulares. There were changes to the inferior articular processes of the third lumbar vertebra in the form of flattening and eburnation inferiorly which suggested that some posterior slippage of the detached L4 arch fragment had occurred.

Finally, despite the generally poor preservation of the outer surface of the bone, a right tibia and right fibula from the miscellaneous material, F184, showed considerable amounts of periosteal new bone over their entire shafts, probably as an inflammatory response to some sort of infection.

Summary

A minimum number of 11 individuals recovered from discrete burials and miscellaneous bone from Redcastle Furze were examined. Poor preservation meant that information was limited, with ageing only possible for subadults, and sexing virtually impossible. Dental pathology was limited to severe enamel hypoplasia in one individual, while skeletal pathology consisted of degenerative changes to the spine, a fractured spinous process and spondylolysis, all in the same individual, and a case of periosteal new bone on the lower leg bones of a second individual.

REDCASTLE FURZE - HUMAN BONE

INDIVIDUAL SUMMARIES

F1: Part of maxilla plus postcranial skeleton, excluding shoulder area, lower arms, one lower leg and both feet. Poor preservation. Subadult, therefore unsexed. Age: 10-14 years, based on state of dental eruption, epiphyseal fusion and long bone length.

F18: Relatively complete skeleton, missing lower right arm, both hands and most of feet. Skull relatively well preserved, otherwise in poor condition. Subadult, therefore unsexed. Age: 15-18 years, based on state of dental eruption, epiphyseal fusion and long bone length.

F25: Postcranial skeleton, hands and feet missing. Very poor preservation. Sex: uncertain, due to postmortem damage. Age: adult, based on complete fusion of long bones and total eruption of teeth. Little wear on 2nd and 3rd molars suggests possibly young adult.

F33: Postcranial skeleton, excluding mandible, left arm, both hands, right femur and most of feet. Very poor preservation. Sex: ??female, based only on an apparently wide sciatic notch. Stature: 1.64m ± 3.72cm, using femur. Age: adult, based on complete fusion of those bones present. Degenerative changes to spine suggest possibly old rather than young adult. Other pathology present: healed fracture of spinous process of one thoracic vertebra; spondylolysis, 4th lumbar vertebra.

F41: Incomplete postcranial skeleton, consisting of right shoulder and arm, ribs, 5 vertebrae and right femur. Relatively good preservation. Subadult, therefore unsexed. Age: 14-17 years, based on epiphyseal fusion and long bone length.

REDCASTLE FURZE - MISCELLANEOUS HUMAN BONE

(K25) F15

Part of occipital bone and posterior right parietal

(M25) F32

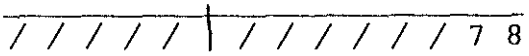
Virtually complete left ulna
Badly damaged right femur, distal end missing

(K23) F37

Infant left femur, ca 71mm long

(M25) F38

2 left and 1 right rib
Badly damaged thoracic vertebra, Schmorl's node inferiorly
Badly damaged incomplete mandible (2 pieces, from 2671 and 2150, that fit together):



Badly damaged proximal half of shaft of subadult right femur
Shaft of left clavicle
Very badly damaged right and left tibiae, distal ends missing

(L20) F40

Shaft of left humerus

(M24) F50

Left 3rd metacarpal fragment
Unidentified metacarpal fragment

(M25) F57

Proximal half of left femur
Distal half of right femur
Complete right tibia
Proximal half of left tibia
Right 5th metatarsal
Animal bone fragment

(L24) F61

Fragment of proximal right femur, head missing

(K23) F70

Incomplete left innominate, unsexable
Proximal two-thirds of left femur
Distal half of right femur, very poor condition
Proximal half of right tibia, very poor condition
Distal fragment of right tibia
Distal half of left tibia, very poor condition
Badly damaged and incomplete left talus

(M26) F102

Distal end of right fibula

(Area N21) F184

Right side of frontal bone, including supraorbital margin and nasion, possibly male
Right and left nasal bones
Left zygomatic bone
Fragment of right temporal
Fragment of right scapula
1 vertebral fragment
2 badly damaged hand phalanges
Upper third of right femoral shaft
3 fragments of femoral condyles
Incomplete right and left tibia, both ends damaged
Damaged shafts of right and left fibulae.
(Right tibia and right fibula both show considerable amounts of periosteal new bone over their entire shafts)
+ numerous long bone splinters

(M25) F212

Part of maxilla and mandible, subadult, estimated age 10 years ± 30 months:

6 e / / / / /	/ 2 /
6 / / 3 2 1	1 2

Permanent teeth show marked enamel hypoplasia, with 5 or 6 clear lines on each tooth.
Proximal half of left femur, subadult
Shaft of right tibia, subadult

REDCASTLE FURZE - METHODS

Sexing

Both morphological and metrical variables are normally considered when attempting to sex individuals. However, the poor condition of the Redcastle Furze bone precluded the use of bone measurements for sexing. For the pelvis, the main morphological features recorded are the width of the sciatic notch, presence or absence of a preauricular sulcus, the sub-pubic angle, ischiopubic morphology and ventral arc (Phenice 1969), together with the width of the first sacral vertebra in relation to the sacral alae and the length of the auricular surface on the sacrum. For the skull, the features considered are the size of the mastoid processes, the size of the supraorbital ridges, the extent to which the posterior root of the zygomatic process continues over and beyond the external auditory meatus, and the development of the nuchal crest. In cases where the sexing criteria of pelvis and skull tend to contradict one another, the characteristics of the pelvis are preferred.

Ageing

Age at death for subadult individuals is assessed from the state of tooth eruption (Ubelaker 1978), of epiphyseal fusion of the bones (Gray's Anatomy 1980) and from the diaphyseal length of long bones (Workshop of European Anthropologists 1980). For the Redcastle Furze adults, the poor condition of the material did not permit ageing.

Stature

Stature is calculated for adults only, using the formulae developed by Trotter (1970).

Gray's Anatomy 1980 36th ed., eds P L Williams & R Warwick. Edinburgh: Churchill Livingstone.

Phenice, T W 1969 A newly developed visual method of sexing the Os Pubis. Am J Phys Anthrop 30: 297-302.

Trotter, M 1970 Estimation of stature from intact long limb bones. In Stewart, T D (ed), Personal Identification in Mass Disasters, 71-83. Washington, National Museum of Natural History.

Workshop of European Anthropologists 1980 Recommendations for age and sex diagnoses of skeletons. J Hum Evol 9: 517-549.