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GRAINFOOT

DALLAND

CONTENTS

Human bones

Daphne Home Lorimer

1:02

Report on the human bones from a cist at Grainfoot, Longniddry,
East Lothian

by

Daphne Home Lorimer

Report

Examination of the bones from the cist at Grainfoot, using the right humerus as marker, showed that they represented a minimum number of two individuals. The apportionment of bone to skeleton is only made with confidence where two fragments fit together or two bones articulate, but the difference in size, in this case, was so great, that an allocation was tentatively made for bones in bags labelled Find no 3. (The bones from Finds 1 and 2 were only allocated if they actually fitted). The two skeletons have been called A and B.

Skeleton A was represented from the skull, by bones of the base, fragments of the supraorbital margin and mandible and a lachrymal bone; from the vertebrae, by parts of the 1st and 2nd cervical, 1st, 2nd, th and 4 other thoracic and 5 lumbar vertebrae and a small fragment of sacrum; from the upper extremity by the sternal ends of both clavicles and parts of the right humerus, radius and ulna, but only by fragments of the left tibia from the lower limb. In the thorax, ribs were few and there were only small fragments of scapula and sternum; The bones of the hands and feet were missing except for 3 phalanges from the upper extremity.

With such scanty skeletal material, sexing and aging could only be tentative, but the skeleton was thought to be that of an adult male with a minimum age of 25 at death (but possibly

between 35 to 40) and about 5ft 10in in height.

Sex The criteria for sexing were few but all available were used: in the skull, the supraorbital margin was rounded and the glabella and mastoids large, while the symphysis mentis was square (Krogman and Iscan 1986); the maximum diameter of the abraded, loose head of the humerus was still within the male range (Bass 1987).

Age The sternal epiphyses were united with the shaft in both clavicles, so the age must be over 25 (Gray 1977). Osteophytic lipping was noted on the margins of three thoracic vertebrae (erosion of the margin prevented examination of many vertebral bodies). Stewart (1958) considered that osteophytosis, while not permitting a close estimation of age, could provide an upper or lower limit (its complete absence in the vertebral column, for example, would indicate an age under 30). In Skeleton A the lipping indicated an age at death of 35 to 40. Stewart, however, was working with American whites and he stressed that there must be an absence of pathogenic conditions. There were indications of lesions in the inter-vertebral thoracic discs which might make the cause of the condition to be disease rather than age.

Stature Since no entire long bones were available for measurement, the length of the bone (in this case the only one available was the humerus) had to be calculated from the formula devised by Muller and given by Krogman and Iscan (1986). (This estimates the full length from segments which are in proportion to the length of of the bone). Two segments from the

lower end of the humerus were used and a total length of 326.55 mm was calculated with a standard deviation of 0.88. Then, using the formula of Trotter and Gleser given by Brothwell, (1981) a stature of about 5ft 10in (172.3 cm with a standard error of 4.05) was calculated. (Since the errors were compounded, this height can only be an approximation).

Pathology There was evidence of a degenerative condition in the skeleton: gross osteophytosis was noted on one reconstructed thoracic vertebra (3IIii / iii) and slight on two others (3Iii and 3Iiii) The associated Schmorle's nodes on both superior and inferior surfaces of these vertebrae indicated that there had been herniation of the intervertebral disc with resulting pressure on the surfaces of the vertebral bodies (Ortner and Putschar 1987). The appearance of (3IIii / iii) is more suggestive of a pathogenic condition than age. Slight eburnation was also noted at the lower end of the right ulna (3IVv).

Most of the teeth had been lost post mortem but the lower right premolars were heavily worn, the pulp being exposed. The enlarged and smoothed appearance of the sockets in the region of the lower right incisors and first two molars indicated the presence of dental abscesses in these regions.

No non-metrical variations were noted on the extant fragments of bone.

Skeleton B was represented by bones of the extremities and a small fragment of the right acetabulum only: from the upper extremity there were fragments of both humeri and the right radius and ulna; from the lower extremity, there were parts

of both femora and the right fibula but the left tibia and talus were worn but complete. It is tentatively suggested that the skeleton was that of an adult female whose age at death might possibly have been between 44.8 and 59.8, with a height of about 5ft 5in.

Sex All available criteria were used to determine the sex (female): the diameter of the lower end of the tibia (37.6mm) and the circumference at the nutrient foramen (80.0mm) both lay within the female range (Bass 1987). The maximum length of the left talus (49.6 mms.) lay well within the female range (Steele 1976) as did the diameter of the head of the left humerus which was, however, very abraded.

Age The skeleton was that of an adult as the epiphyses were completely united, but an estimate of age at death could only be made within a wide range since, in the absence of other markers, the degree of demineralization was utilized as seen in an x-ray of the head, neck and upper shaft of the left humerus. Bone mass increases until the age of 30, remains stable for several years and is then followed by gradual loss of cortical and cellular bone. There are many variables (including the possibility of premature osteoporosis) and the method must be treated with caution in evaluating skeletal age. When using the table of phases given by Sorg et al. (1989) from work by Acsadi and Nemeskeri, examination showed that the Medullar canal extended proximally so that its apex lay just above the surgical neck and one small part exhibited an ogival structure. This conformed to Phase II where the calculated range of of the sample used to construct the table was 44.8 to 59.8 with a

standard deviation of 3. (The actual range was 24 - 68).

Note This very recent and somewhat complicated concept might perhaps require further experimental work. It is normally used with live subjects of known age to determine the degree of bone loss.

Stature The stature was calculated from the length of the left tibia using the formula of Trotter and Gleser given by Brothwell (1981) and was about 5ft 5in.

Possible small medial and lateral squatting facets were noted at the lower end of the tibia. There was no platycnemia and no pathology noted.

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