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BRONZE AGE SHORT CISTS NEAR DUNFERMLINE, FIFE. BY J. GRAHAM CALLANDER, F.S.A.SCOT., DIRECTOR OF THE NATIONAL MUSEUM OF ANTIQUITIES. WITH A REPORT ON THE BONES FOUND, BY PROFESSOR THOMAS H. BRYCE M.D., F.R.S., F.S.A.SCOT.

Towards the end of last year (1922) a small group of slab-lined graves was discovered in Ferniehill sand-pit, which lies on Primrose Farm, about $\frac{1}{4}$ mile east of the hamlet of Pettymuir and about $2\frac{1}{2}$ miles south-south-east of Dunfermline. The site lies on the summit of a sandy ridge rising slightly above the 100-foot contour-line, and from it a glimpse of the Firth of Forth beyond the naval base at Rosyth is obtained. The immediate surroundings consist of fertile undulating country rising gradually to the north.

When the first grave was discovered the character of the structure was not recognised, as there were no relics or traces of human remains, and the slabs of which the cist was formed were removed as they came to light: the workman who was digging the sand thought he had come on an old drain. But when the second cist was encountered, fragments of a human skull having been observed after the removal of the cover-stones and of some of the sand in the chamber, it was realised that the structure was a grave. Further work about the cist was suspended, and the discovery was reported to Mr William Black, Charlestown, and Mr Peter Paterson, Dunfermline, the chief proprietors of the sand-pit. Mr Black having notified the discovery to the Museum, it was arranged that no further digging should take place until I could be present. On the 4th November I visited the site and had the grave cleared out.

The first grave had been formed of two side slabs measuring 3 feet 6 inches and 3 feet 3 inches in length by 1 foot 3 inches in breadth, and two smaller end slabs which had been broken up. The approximate position of the cist was pointed out, but no further details regarding it were obtainable. It was evident, however, that the grave had been about 3 feet in length and about 15 inches in depth.

The second cist lay about 12 feet south-east by south of the first in fine yellow stratified sand. The tops of the side and end slabs were 4 feet below the surface of the ground, there being about 2 feet 9 inches of sand and 1 foot 3 inches of soil above them. This grave, like the first, was formed of rough slabs of yellow sandstone set on edge, the stones varying from 3 inches to 5 inches in thickness. The ends and the north-eastern side were each formed by a single slab, but the south-western

side consisted of two. Internally the chamber measured 3 feet 2 inches along the north-eastern side, 3 feet 1 inch along the south-western side, 1 foot 10 inches across the north-western end, and 1 foot 9 inches across the south-eastern end, the depth being 1 foot 9 inches. The slabs fitted closely together at the corners, and a small prismatic stone had been inserted at the southern corner. There were three cover-stones about 4 inches thick; the largest, which almost covered the mouth of the grave, measured 3 feet 1 inch in length by 1 foot 11 inches in breadth, and the other two, which overlapped the ends of the central slab, measured 2 feet 3 inches by 14 inches and 1 foot 8 inches by 1 foot 7 inches respectively. The bottom of the grave was not paved in any way, and the longer axis lay 35° west of north magnetic, nearly north-west and south-east.

When opened, the cist was packed full of sand, which was of darker colour than the undisturbed sand of the pit. Portions of a human skull and lower jaw were found near the centre of the north-western end of the grave, and a left humerus and rib bones near the northern corner. Close to the middle of the south-western side were part of the lower jaw of another individual, and fragments of long bones, which included a left femur and tibia. Dr Robert C. Wallace of Charlestown, who was present while the grave was being examined, remarked that the two latter bones as they lay side by side, cleared of sand, seemed to have been disarticulated when deposited. Fragments of bone were found near the centre of the cist but none towards the south-eastern end. Most of the bones were much decayed and very friable.

From the report on the bones by Professor Bryce it will be seen that two persons had been buried in this grave, one probably a woman of full adult age and the other a young person of whom the sex could not be determined. It would appear that the elder individual had been placed on her right side with the head in the north-west end of the cist, and the knees flexed, possibly disarticulated, against the south-western side, and that the left arm had fallen behind the spine as the body decayed. The skull of the younger person lay near the centre of the south-western side, but as the position of the other parts of this skeleton could not be ascertained it was impossible to determine its original position.

An unworked chip of flint and a few fragments of charred wood were the only other relics found in the grave.

Ten days later I was called out to examine a third cist, which had been found about 5 feet south-east of that last described. When I arrived at the spot the cover-stones had been exposed, but no further

disturbance of the deposit had been permitted. The tops of the covers of this grave were 1 foot nearer the surface than those of the last, there being only 2 feet 6 inches of sand and soil above them. The mouth of the cist was closed with four irregular rough slabs covering a pentagonal-shaped area measuring 4 feet 9 inches from east to west and 3 feet 11 inches from north to south, the two on the north side being only about 10 inches in breadth. A gap between these and the larger two on the southern side was closed by two smaller stones superimposed on the four below, and near the north-eastern corner was a block of shale measuring 12 inches by 9 inches by 4 inches. The removal of the cover-stones revealed a beautifully constructed cist, of almost rectangular shape, formed by four slabs set on edge. The longer axis of the grave lay 62° east of north magnetic, almost north-east and south-west, and it measured internally 3 feet in length along both sides, 2 feet in breadth across both ends, and 1 foot 3 inches in depth: like the last, it was neither paved nor causeyed except for a flat triangular stone, about 1 foot across, which lay near the centre of the western side. All the stones of this cist, except the block of shale, were of yellow sandstone, and the side and end slabs varied from 2 inches to 6 inches in thickness.

This cist was also chock-full of dark-coloured sand, which was carefully removed. To our disappointment not a trace of osseous remains was revealed and no relics were found, but several specks of charred wood were seen amongst the sand in the cist.

Although no pottery or other humanly fashioned relics were found in any of the three graves, there is little doubt that they belong to the early part of the Bronze Age. It would not be surprising if further cists should be found in the same sandy ridge.

REPORT ON THE BONES FROM THE SECOND CIST.

By Professor THOMAS H. BRYCE.

The bones from Ferniehill cist represent the fragmentary remains of the skeletons of two individuals, the one of full adult age, the other a young person. The deposit consists of some fragments of the bones of the skull, portions of two lower jaws, pieces of a few vertebræ and ribs, and detached parts of the articular ends and shafts of the long bones. The number of long bones represented falls far short of the full complement of bones even of one skeleton, and no part of the pelvis is present. The fragments of the long bones that do exist are all rather delicate, so that it is not possible to say to which of the two skeletons they belong, except in cases where the articular ends are attached.

The majority of the fragments can be assigned to the elder individual. The two largest pieces of skull belong to a right parietal bone and the right side of a frontal bone. The sagittal suture has entirely disappeared on the inner aspect of the parietal fragment. This fact and the thickness of the bones indicate that the skull belonged to the elder of the two persons. A small portion of the alveolar process of the upper jaw with the last molar tooth in its socket, and a fragment of the lower jaw with the molar teeth in position, must also be referred to this individual, because the teeth show a good deal of wear, the crowns being ground flat.

A portion of the shaft of the humerus with the head attached, fragments of the articular ends of the femur and tibia, which show no signs of the epiphyseal junction, also represent a person of full adult age. The left tibia of this individual consists of two portions, a proximal and a distal, which fit one another, and when the two fragments are conjoined the reconstructed bone measures 36 cm. or 14.2 inches. This figure, according to Pearson's formula, would correspond to a stature of 5 feet 2 inches in a woman and 5 feet 4 inches in a man. The relatively low stature and the comparatively delicate character of the bones justify the supposition that the person was a woman, although in the absence of any part of the hip bones it is not possible to determine the sex absolutely. The lower end of this tibia shows a well-marked facet on its anterior aspect, produced presumably by pressure on the neck of the astragalus in acute flexion of the ankle. This occurs regularly among the races of mankind who adopt the attitude of "squatting," but is sometimes seen even in modern European bones. The femora are too imperfect to yield any data regarding stature, and none of the other fragments that can be assigned to this skeleton furnish any further information.

In the case of the skeleton of the younger person, the decisive fragments are the detached proximal epiphysis of the right humerus and portions of the lower jaw. The upper humeral epiphysis unites with the shaft of the bone between the twentieth and the twenty-second year of life, so that this is the upper limit of the age of the individual. The lower jaw is small and its body is shallow. The third molar or wisdom teeth have not erupted; this fact further determines the age of the individual, or would determine it were the dentition normal. As a matter of fact, the crown of the third molar, which at this stage should be present but still inclosed within the alveolus, is absent on both sides. Notwithstanding this circumstance, the general character of the jaw and the fact that the teeth show no signs of wear indicate that the person was still young. The jaw, in short, may very well have belonged to an individual in whom the ossification of the long bones was not complete.