

## III.

NOTICE OF THE EXAMINATION OF A CAIRN AND INTERMENTS OF THE EARLY IRON AGE AT THE BLACK ROCKS, GULLANE, HADDINGTONSHIRE, ON 14TH MARCH 1908. BY EDWARD EWART, M.D., GULLANE, AND ALEX. O. CURLE, SECRETARY.

An imaginary line following the direction of the west wall of Muirfield golf-course northwards would reach the seashore at a spot known as the Black Rocks. It is a desolate region of ranges of sand-hills alternating with hollows swept out by the prevailing westerly winds. A high ridge of sand running landward affords a situation for a tall mast or beacon which indicates the eastern extremity of a measured mile for the use of steamers doing their steam trials in the adjacent waters. To the north-east of this ridge lies a hollow more expansive than its neighbours, from whose surface in recent years the sand has been blown away, leaving exposed several large cairns, of which that under description was one.

Its position lay near the base of the sand ridge  $63\frac{1}{2}$  yards or so above high-water mark, and about 34 yards below the line of the 20-foot beach. Composed of large black whinstone boulders gathered from the shore, many of them in weight as much as a man could lift, it lay with its longest axis north and south and formed in outline an irregular oval. Its extreme length and breadth were 20 feet and 13 feet respectively, and at its apex it attained a height of about 4 feet 6 inches, falling gradually away towards either extremity. The large boulders forming its foundation were regularly laid in transverse lines, and had sunk deep in the surface of red tenacious loam on which they had been placed (fig. 1 shows the cairn denuded of sand and before excavation). The removal of one or two stones from the top brought to light a collection of human bones enveloped in a newspaper, while a number of others lay immediately adjacent. These bones were in a condition similar to the others in the cairn, and were undoubtedly from an ancient interment



Fig. 1. View of the Cairn.

recently disturbed. At a slightly deeper level to the northward, and separated from the last by small stones, were disclosed the remains of another skeleton. It lay east and west on the right side, facing north, in a contracted position, and with the skull closely confined between two large boulders. One hand lay under the head and the other under the pelvis. The body had apparently been covered with soil, and the presence of sand thickly intermingled with comminuted shells was observed about it. The skull, though recovered complete, subsequently fell to pieces. There was no sign of a cist, though a flat stone set on edge stood immediately to the east of the spot where the skull lay. An area sufficient for the interment appeared to have been left in building the cairn or afterwards prepared by the removal of boulders. Slightly to the

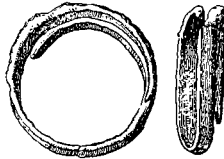


Fig. 2. Spiral Ring of bronze. (†.)

north-west, and partially underneath the second interment, lay the remains of a third skeleton. The skull, which was broken, lay on its side, and the bones around it had been much disarranged. Still further to the north of the last, and on the same level, the remains of a fourth skeleton came to light. The skull lay in a vertical position, with some bones of a hand directly in front, while behind lay several vertebræ and the shoulder blades. Immediately to the south was a large flat stone, and between it and the bones was found a small spiral ring of bronze very much decayed and broken (fig. 2). Slightly to the westward of the third skeleton, but at a lower level and on the natural surface, in a much disturbed condition, lay the remains of a fifth skeleton. Here also were apparent the shells and sand previously observed. At 11 feet from the southern extremity of the cairn, and slightly to the east of the centre, lying on the natural surface, which had not been disturbed, and sur-

rounded by large boulders, a sixth skeleton was discovered. In the neighbourhood of the skull, which was in perfect preservation, the presence of the coarse sand and broken shells was again noted, while the



Fig. 3. Showing Skull and part of Skeleton in position.

rest of the body appeared to have been covered with soil. There was no indication of a built cist. The skeleton lay in a contracted position, with the legs drawn up, on its right side, and facing north. The left hand covered the left cheek, and the right lay in front of the breast (fig. 3 shows the skeleton in position). Beneath the skeleton was found the

iron knife-dagger (fig. 4), which was very fragile and was unfortunately broken. It is dirk-shaped, tapering to a point, and has one sharpened edge with the back apparently straight. The length over all, including a tang of  $1\frac{3}{4}$  inches or thereby, is 7 inches. The breadth of the blade is  $\frac{5}{8}$  of an inch. The tang, which is quadrangular in section, showed on the corrosion which covered it a distinct impress of the wood into which it had been inserted. The only other object found was a disc or whorl of sandstone  $2\frac{3}{8}$  inches in diameter and  $\frac{1}{2}$  inch in thickness, with a perforation in the centre of  $\frac{1}{2}$  inch in diameter, bored from both sides, and slightly wider on one side than on the other. It was picked up

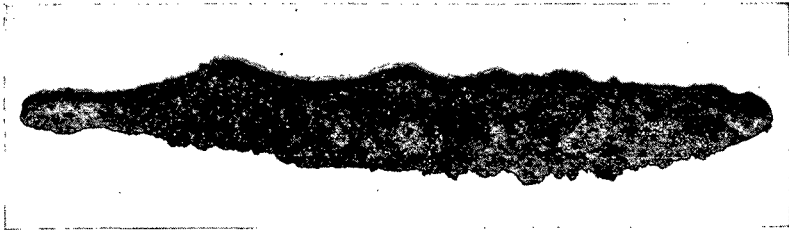


Fig. 4. Knife-dagger of iron.

near the base of the cairn to the south of the sixth interment, with which it did not appear to have been associated.

Seaward of the cairn, and about  $51\frac{1}{2}$  yards above high-water mark, are observable the remains of a low wall of medium-sized black boulders. It extends apparently for a distance of about 65 yards, curving slightly landwards. The base of the wall rests on the natural surface of red loam. A short distance to seaward of this wall lies a large cairn composed of medium-sized boulders. It is somewhat oval in form, and its longest axis points more towards the east than that of the cairn excavated.

Passing round the end of the ridge of sand on the west of the excavated cairn, one enters a gully running in a south-easterly direction. About 50 or 60 yards above high-water mark, at the seaward end of the

gully, are three cairns of the type similar to that excavated, one about the same size and the other two somewhat smaller. The upper part of the larger cairn was destroyed by the crowd on the day following the excavation of the cairn previously described. It is said that the remains of five skeletons were found in it. The lower portion of the cairn is believed not to have been disturbed. The two smaller cairns were probably interfered with only at the surface. Throughout the gully and below the line of the 20-foot beach which is here 181 yards distant from high-water mark, are to be counted as many as forty other small round cairns, many of them lying so closely together as to impinge on one another. The greater number of these cairns were likewise opened by the crowd, who found at a shallow depth bones and skulls of which a quantity have been recovered. They were all single burials. It is stated where observed that the skeletons lay east and west on the left side, facing southward. The diameter of these cairns appears to have varied from about 4 feet 6 inches to 7 feet 6 inches. As seen before they were destroyed, a depression in the centre suggested that some of them had been previously examined. It is said that most of the bodies were in a contracted position, but also that some were more or less extended. Only in one of these cairns does a cist appear to have been found. It was in a small heap of stones with an angular flat block of sandstone on the top. This was removed, and sand excavated for the depth of 1 foot, when another block of water-worn sandstone, broken at one end and rectangular at the other, was reached. It was 3 feet in length by  $1\frac{1}{2}$  feet in breadth. A subsequent examination showed that other slabs forming the sides and ends of the cist were apparently in position, and that it contained a skeleton lying on its left side, with the head towards the east, and facing southwards.

It is greatly to be regretted that, roused to excitement by the first excavation, a mob should, on the following day, have applied their ill-directed energy to the exploration of these cairns. It is believed that a considerable number of skeletons were disinterred; and though many

of the bones have been recovered and examined, much valuable information has been lost.

A similar group of cairns near Gullaneness was noted by Dr Jas. T. Richardson and Mr J. S. Richardson, North Berwick, some years ago, and duly reported in the *Proceedings* of the Society, vol. xxxvi. p. 654. Many of these cairns on excavation were found to contain cists, and one of circular form, containing a large oval cist, is particularly described. The presence in this cist of the coarse sand and comminuted shell, as found in the burials at the Black Rocks, is also noted. There was in it an entire absence of relics either metal or fictile. With reference to the other "cists," it is stated that, although they "were carefully searched no relics of any kind were met with beyond the broken pottery and an oval implement of sandstone." As the only pottery previously mentioned was apparently found on the surface, the inference from the statement quoted, that it was found in the cists, is probably not intended.

It is a pleasure to learn that a careful archæological survey of this portion of the coast is in course of being carried out by Mr James S. Richardson, wherein all these cairns are being carefully noted. A copy of this survey will, it is understood, be duly presented to the Society.

Our thanks are due to Mr Hamilton, Gullane, for drawing attention to the cairn, and for the photographs of it which illustrate this paper; also to Mr Henry Borthwick of Borthwick Castle for assistance in the work of excavation. To Professor D. J. Cunningham and Dr Waterston, we are indebted for the valuable reports on the bones which follow. Professor Cunningham, in a letter, says:—

"The Gullane bones were given to my senior assistant, Dr Waterston, and he has been working at them in my laboratory. I have just gone over his report with him, and have discussed with him several of the points which the specimens suggest.

"The crania throw little light on the period and race. They are well formed, and must have belonged to an intelligent people. There is little on the anatomical side which separates them from the people of the present day.

"The leg bones are interesting, but their characters will be dealt with by Dr Waterston."

REPORT ON PREHISTORIC CRANIA AND OTHER HUMAN REMAINS FROM  
GULLANE. By DR D. WATERSTON.

Through the kindness of Dr Ewart and Mr Curle, the opportunity was given to me of examining the prehistoric crania and other bones which were discovered at Gullane.

The material submitted to me consisted of the following:—

(1) Human left parietal and occipital bones, articulated, and showing no features of special interest in configuration or in suture.

(2) The greater part of the cranial vault of a human skull, of insufficient size for the determination of measurements and indices. The coronal suture was obliterated, but the bones otherwise showed no special features, but in general contour resembled corresponding portions of the other crania which were more complete.

(3) The crowns of some temporary human teeth, principally molars.

(4) An adult male skull, from which the lower jaw and the nasal bones were absent, and the upper part of the squamous portion of the left temporal bone had been recently broken across.

This cranium showed traces of the clay in which it was found, and was stained a deep brown colour.

The skull was undoubtedly that of an adult male individual, and presented a well-developed, rather rounded vault, and a facial region of good proportions. The cranial sutures were complex, and were not obliterated.

Examining the individual bones, the frontal bone showed a prominent frontal curve, and the parietal eminences were distinct, the general contour of the vault being therefore rounded and uniform. The mastoid processes were short and blunted, and the occipital condyles were prominent.

The cephalic index was 76·5 and the vertical index 74·9. The other measurements and indices are appended.

In its general contour, in the prominent cheek-bones and in the deep nasal notch and receding outer margin of the orbits, this skull bears a close resemblance to the skulls described by Barnard Davis and belonging to the Bronze Age. This resemblance is not found, however, in the cephalic index, which is that of a mesaticephalic individual. From the size of the skull one would conclude that it belonged to an individual of rather small stature.

(5) This was a female skull found embedded in sand, of which the lower jaw and the right maxilla were absent.

A prominent character of the skull was the persistence of the metopic suture, which was open from end to end, although the skull was that of an adult. Both of the squamous temporal bones showed a recent fracture similar to that found on one side of the former skull.

The skull was of a light and delicate pattern, with slight muscular impressions, and to the eye appeared to be longer and less rounded in outline than the former specimen.

The cephalic index was 72·3 and the vertical index 71·7, both of which are smaller than the corresponding indices in the former skull. These differences would not be inconsistent with the theory advanced from other reasons, that the individuals may have belonged to different periods.



The incisor and canine teeth were worn flat, and were on the same level as the crowns of the molars, which were also worn flat, showing the condition which is found in the teeth of those individuals who have required to grind food with care, and who have been supposed to have lived upon raw or half-cooked grain, and such-like gritty substances.

(6) This specimen consisted of the cranial part of the skull of an adult, and was of considerable interest, since it showed practically a complete obliteration of the coronal, sagittal, and lambdoidal sutures, and a considerable degree of elongation, so that the skull showed a sub-scapocephalic appearance. The cephalic index was 67.3 and the vertical index 64.9.

The texture of the bone over the vault was considerably roughened. Owing to this slight degree of cranial deformity, it is not possible to discuss it from the racial point of view.

The crania were too fragile to permit of the estimation of the cranial capacity, but from the external measurements and the general shape and contour of the skulls, there is no reason to believe that the active capacity of any of them was less than the average capacity of the present inhabitants.

(7) A lower jaw, which is said to have been found in the same cist as the skull No. 6, but the jaw does not correspond, and must have formed a portion of another skull not examined.

The incisor canine and premolar teeth were present and one left molar tooth. The socket of the second right molar tooth had been absorbed, and the alveolar margin was smooth and rounded, suggesting that the tooth had been absent for some time.

The crowns of all the teeth which were present showed the same flattening and wearing down that was exhibited by the teeth in the skull described above. The molar was only partially worn down.

(8) A lower jaw showing general features similar to those in the former.

The limb bones, which I had the opportunity of examining, comprised an entire femur and tibia belonging to one skeleton, and the upper thirds of two other femora also of the left side.

These bones showed characteristic and distinctive features by which they were readily distinguishable from similar bones of recent races of man in Scotland.

The femur showed the following characters:—

The posterior part of the head was somewhat eroded. The neck of the bone was of moderate length, and the anterior intertrochanteric line was indistinct.

The shaft of the bone showed considerable antero-posterior curvature, and it was flattened from before backwards in its upper third. A strong ridge ran from the lower and back part of the neck to the lesser trochanter, and the great trochanter was not of great size. Below the great trochanter was a strong gluteal ridge, and on the outer side of this ridge was a vertical hollow almost 50 mills. in length, limited externally by a strong ridge in its middle part. The inner border of the bone at this level was thinned out, and the bone presented a strong degree of the condition known as platymery—a character frequently seen in prehistoric bones.

The external condyle was somewhat eroded, and the transverse width of the lower end of the bone was 79 mills.

Above the back part of the internal condyle a small articular facet for the

tibia was found, such as occurs in races who habitually adopt the squatting attitude.

The maximum length of the bone was 445 mills., and the oblique length 444 mills. The maximum diameter of the head measured 47 mills.

The diameters of the shaft were as follows:—In the upper third, transverse width was 37 and the antero-posterior 23 mills.

At the centre of the shaft the transverse width was 28 and the antero-posterior width 27, while at the junction of the middle and lower thirds the measurements were 30 and 30 mills, respectively.

*Tibia.*—The maximum length of the tibia was 382 mills., while without the spine and the malleolus it measured 365 mills.

The head of the bone was somewhat retroverted, but the upper articular surface was horizontal.

The diameters of the shaft were as follows:—At the junction of the upper and middle thirds the transverse width was 25 and the antero-posterior 40 mills, and in the centre of the shaft the figures were 24 and 36 respectively.

On the anterior surface of the lower end of the bone there was an oval articular area for contact with the neck of the astragalus, in positions of extreme flexion of the ankle joint. This is the lower squatting facet, and its origin is similar to that found on the back of the lower end of the femur.

The other portions of femora and also the upper end of a humerus of right side were not sufficiently large to permit of detailed examination.

*Stature.*—Estimating the stature from the length of the femur and tibia, the result shows that the individual to whom they belonged was of about 5 feet 3 inches in height.

Topinard's method gives the stature as 1·66 metres, Humphrey's as 1·61, and Rollet's as 1·62, while from the combined length of the femur and tibia the result works out as 1·67 metres.