

IV.

REPORT ON HUMAN REMAINS FOUND WITHIN A CIST AT MOREDUN,
MIDLOTHIAN. BY T. H. BRYCE, M.D., F.S.A. Scot.

The bones submitted to me for examination by Mr Coles belong to two individuals. An examination of the photograph with the remains *in situ*, shows that they had been placed in the bent up position one above the other, the heads being directed to the opposite ends of the cist, but the faces in the same direction.

The remains are those of a young adult person and of an adolescent about twenty-one years of age. The sex cannot be determined with certainty in either case, owing to the fragmentary condition of the bones, and the great superficial erosion of such as are entire. The slenderness of the long bones of the younger person indicates that probably the individual was a female, and though the matter is more doubtful in the case of the older person, certain characters of the skull point in the same direction.

The skeleton of the adult is represented by one half of the skull, a clavicle, the long bones of the extremities, some odd bones of the hand and foot—as well as fragments of several vertebræ, of the sternum, the scapulæ and ossa innominata.

Owing to the erosion of the surface, the muscular markings on the long bones are in great part obliterated.

The following are the chief measurements:—The *Humerus* measures 315 mm. in length. The *Femur* has a maximum length of 458 mm., and an oblique length of 455 mm. The transverse diameter of the shaft below the trochanters is 33·3 mm., the antero-posterior 26 mm., giving a platymeric index of 78·1. There is thus a certain amount of flattening of this region of the shaft of the bone. At the middle of the shaft the transverse diameter is 26 mm., the antero-posterior is 26·5, yielding a plasteric index of 98·4.

The *Tibia* measures 363 mm. in length. In the upper third of the

shaft opposite the nutrient foramen the antero-posterior diameter is 37 mm., the transverse 28 mm. on the left bone, and the corresponding diameters on the right are 35 mm. and 27 mm. The platycnemic of the right bone is therefore 77, while that of the left is 75.6.

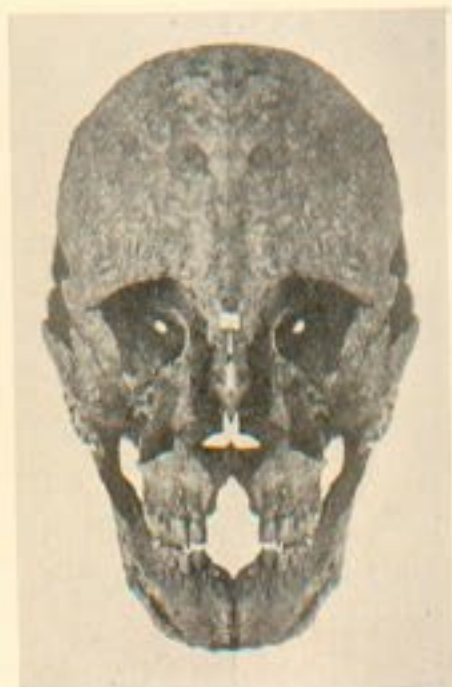
The stature, calculated from the length of the femur, is about 5 feet 5½ inches.

The skull is unfortunately much damaged. The whole of the left side (fig. 1), which was uppermost and exposed, had decayed away; and even on the intact side (fig. 2) the greater part of the side wall of the cranium, the upper part of the face, and the zygomatic arch have been broken away.

The accompanying table gives such of the chief measurements as it has been possible to take.

The transverse diameters have been arrived at by doubling the measurements taken from an artificial mesial plane, and are therefore only approximate. The photographs representing the reconstructed *norma verticalis* (fig. 2), and *norma facialis* (fig. 4), have been prepared by exposing two negatives, one of which was reversed. The positives obtained from these, being also reversed, when mounted side by side give the appearance of a complete skull.

Glabello-occipital length	192
Glabello-Inial length	189
Ophryo-occipital length	189
Basi-bregmatic height	140
<i>Vertical Index</i>	72.8
Minimum frontal diameter	52 × 2 = 104
Stephanic diameter	64 × 2 = 128
Asterionic diameter	66 × 2 = 132
Maximum breadth	72 × 2 = 144
<i>Cephalic Index</i>	75
Horizontal circumference	265 × 2 = 530
Vertical transverse arc	160 × 2 = 320
Longitudinal arc { Frontal segment	133
{ Parietal segment	145
{ Occipital segment	115
{ Total	393
Length of foramen magnum	34
Basi-nasal length	100



Figs. 1-4. Skull from the Cist at Moredun.

<i>Proportion of vault to base</i>		2.93	
Basi-alveolar length	. . . . .	93	
<i>Gnathic Index</i>		93	
Nasio-mental length	. . . . .	115	
Nasio-alveolar length	. . . . .	71	
Lower Jaw	{	Symphysial height	28
		Coronoid height	58
		Condylloid height	68
		Gonio-symphysial length	89
		Breadth of ramus	31

The radii measured on the mesial sagittal section are given in the following table. The Basion has been selected as a centre according to the method adopted by Sir William Turner in his "Memoir on the Craniology of the People of Scotland."¹ Owing to the imperfect state of the specimen it has not been possible to arrive at all the measurements given by him.

Basion to occipital point	. . . . .	113 mm.
" " Lambda	. . . . .	122 "
" " mid-parietal point	. . . . .	140 "
Perpendicular (at right angles to plane of foramen magnum)	. . . . .	138 "
Basion to Bregma	. . . . .	140 "
" " mid-frontal point	. . . . .	136 "
" " Glabella	. . . . .	110 "
" " Nasion	. . . . .	100 "
" " alveolar point	. . . . .	93 "
Basi-occipito-sphenoid axis or basal cranial axis	. . . . .	64 "
Distance from perpendicular to anterior pole of cranial cavity	. . . . .	80 "
Distance from perpendicular to posterior pole of cranial cavity	. . . . .	93 "

An examination of the skull shows that all the sutures are patent, and that the teeth, which are present in their complete number, show no signs of attrition. It must therefore have belonged to a young adult. The glabella and supraciliary ridges are very slightly developed.

In the norma lateralis (fig. 3) the frontal bone rises nearly vertically, then arches with a very full curve back to the bregma. This character, associated with the flatness of the glabella and supraciliary ridges, and with a somewhat thin orbital rim, points to the conclusion that the

¹ *Trans. Roy. Soc. Edin.*, vol. xl. part. iii. No. 24.

skull may have been that of a young woman—but the general characters do not seem to me to be sufficiently distinct to warrant a positive assertion as to the sex.

The whole frontal bone is remarkably full and rounded. The vertex is flat, and shows no sagittal elevation: the curve of the arch begins to fall away about the middle of the parietal bone, and from this point passes gradually down to the slightly marked occipital protuberance. The cerebellar fossa is flat. The sides of the skull are well rounded out; and viewed from behind, therefore, it appears "well filled," the flat vertex forming a uniform curve with the rounded sides. The shape of the skull, as viewed in the *norma verticalis* (fig. 2), is ellipsoidal, and the breadth and fulness of the frontal bone is a marked feature. The same character is well seen in the sagittal section (fig. 1), as is also the flatness of the vertex. The straightness of the mesial section from the inion to the posterior border of the foramen magnum is another feature of note. This is due to the flatness of the *conceptacula cerebelli*, and it is an indication of the youth of the individual to whom the skull belonged.

There is a pterygo-spinous foramen due to the ossification of the ligamentous band extending between these processes.

The facial characters can only be conjectured owing to the absence of the Malar bones, and the greater part of the Maxilla. The absolute measurements of the height of the face indicate, however, that in all probability the skull would fall into the *lepto-prosopic* group, while the gnathic index places it low down in the *orthognathous* category.

The cephalic index being about 75, the skull comes into the *mesati-cephalic* group, and the vertical index being 72·8, it falls into the *metrio-* or *orthocephalic* class. As in the more modern Scottish skulls described by Sir William Turner,¹ the height index falls below the length-breadth index.

The skeleton of the younger person is represented by some fragments of the cranial bones, a portion of the mandible, a humerus, and parts of the femora and tibiae—as well as a portion of the sacrum.

¹ *Loc. cit.*

The bones are so fragmentary that no measurements could be made, but the condition of the epiphyses is such as to fix the age of the individual.

All the epiphyses of the long bones have united with the shafts, but the epiphysial line is still visible superficially at the upper end of the humerus, and at the upper end of the tibia. The bodies of the upper three segments of the sacrum have not yet united together. The mandible is small and delicate, and the third molar has not erupted.

The indications are, therefore, that the individual was about twenty-one years of age—and, as mentioned earlier, the slenderness and delicacy of the bones point to the conclusion that the skeleton is that of a young woman.

An analysis of the data yielded by the examination of the skull of the young adult yields certain conclusions of interest. The fact that it is very probably a female skull must be borne in mind, for the race characters are masked to some extent by the sexual characters in female crania.

Though all the measurements and the indices deduced from them are such as might belong to a skull from the chambered cairns, the general characters are markedly different. The fulness of the frontal bone—the flat vertex without any indication of a sagittal ridge—and the rounded character of the side walls, serve to distinguish to the eye the skull from any of the specimens I have examined from the chambered cairns. The absence of the attrition of the teeth so marked in the earlier skulls even in young persons, points to a higher civilization in the matter of food.

Again, though skulls resembling it in their measurements have been found in short cists, associated with objects belonging to the period of bronze culture, the cranium differs from the *typical* short cist cranium in its low cephalic index, and in the general smoothness of its outlines. It further resembles in general proportions certain of the skulls from the "Danes' Graves," Driffild, Yorkshire, recently described by Dr W. Wright,¹ and referred to the early Iron Age, but in form it does not fall in with any of his types.

¹ *Jour. Anthropological Institute*, vol. xxxiii.

If, on the other hand, it be compared with the skulls collected by Sir William Turner¹ from different parts of Midlothian, which belong to more modern days, it will be seen that there is little to distinguish it from the majority of the crania embraced in his series from the rural and coast districts of the county.

Though the fact that a considerable degree of individual variation is found in all groups of prehistoric skulls, forbids one from making any categorical statement in regard to a single specimen, it may yet be stated that the skull shows rather closer affinities with the modern than with any ancient type of cranium, and that at the time of this interment the general type which prevails at the present time had possibly already been established.