

Notes on a Skull, in the University Museum, Oxford, from Aveline's Hole

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REPORT ON CALVARIA FROM BUCKLAND'S COLLECTION.

The calvaria on which this report is written appears to have an interesting history. It has been for some time in the collection of crania in the Department of Human Anatomy in Oxford. When I first saw it only the top of the cranial vault was visible, the rest being covered with stalactite. A hole had been made in one of the parietal bones, probably by the pick of the excavator, and into this hole a bit of paper had been inserted with the statement that the specimen had been discovered in a cave in "Burrington Combe," and a reference to Buckland's *Reliquiæ Diluvianæ* was added. I cleaned away some of the stalactite, sufficient to shew that only the calvaria remained, that the base was entirely destroyed, practically from the opisthion to the nasion, exclusive, but that the upper part of the orbits had been preserved. None of the face unfortunately remained. The destruction appeared to have been done before the concretion was formed.

The matter rested thus, and I had laid aside the calvaria for some years always hoping to get more data, but despairing, until Mr. Tratman came down to Oxford to lecture and I casually mentioned to him at dinner that I had this specimen in my care. He visited my laboratory next day and declared that the cranium was undoubtedly one of the specimens excavated by Buckland in Aveline's Hole, and lost sight of for so many years. I state these facts as I have no data to offer about the archaeology of the specimen, but I hope that Tratman's identification may prove to be correct. I am also adding some further notes about other skulls in the collection which he may be able to identify.

The material is as follows, first a calvaria partly fossilized and covered with stalactite, the specimen identified by Tratman as being one of the missing skulls from Aveline's Hole.

Secondly there is a calvaria from "Mr. Long's Cave, Cheddar, 1838." Little remains of this specimen, and unfortunately the anterior part of the frontal bone has been broken off, so that it is impossible even to obtain the cephalic index. I am inclined to believe that this calvaria belongs to the same type as the first, but from such a fragment I do not like to draw any definite conclusions.

Thirdly there is a single skull from Ryhope Cave, Sunderland. Other specimens from the same Cave are said to be in the Sunderland Museum.

Fourthly there are specimens which came from Grimthorpe and Arras near Market Weighton, and are alleged to be early Iron Age.¹

Fifthly there are fragments from several caves near Weston-super-Mare. One of these is said to have been found near fragments of pottery, and to be "Neolithic."² I do not know which specimen this is. The remainder have no labels beyond the place of origin. We have in the Department of Geology in Oxford a series of specimens from these same caves, and I am indebted to Professor Sollas for a promise to study the date of the deposits. It must be borne in mind that there is no reason necessarily to associate the deposits with the crania; it is only possible that they may belong to the same stratum. I have included them here because it seems of importance to collect all the data possible on early man in England.

In the description which follows I have made very great use of Sir Arthur Keith's description of the crania found in Aveline's Hole, published in this journal (Vol. II, No. 1, p. 16), but have added one or two other measurements. The cranium which belongs to the same type as my specimen is called "A" by Keith. To facilitate reference and to avoid breaking the series I have called my specimen "O" (Oxford specimen).

"O" appears to be male in sex. This conclusion is based on the form of the forehead, and on the absolute dimensions. The mastoid processes are too damaged to be of service, but I do not think that taking all the features into consideration it need be doubted that the cranium really is that of a man. (Plate VII, Nos. 2, 3 and 4).

The sagittal suture is nearly obliterated, the coronal is half obliterated, while the lambdoid, at least externally is still open and easily traceable. The calvaria therefore, although that of an adult, is younger than "A," which Keith describes as probably in the 5th or 6th decade.

When viewed from the side "O" appears to differ in many respects from "A." Although the bony ridges are not very marked there is a massing of bone in the region of the glabella, but this ridge is not continued further than about half way across the orbit. There is no forward bulge of the forehead. The projection of the brow is conveniently measured by taking the glabello-occipital length, and

1 Greenwell & Rolleston. *British Barrows*, Oxford, 1877, pp. 50n, 454.

2 Boyd Dawkins. *Cave Hunting*, London, 1874, p. 194.

comparing this with the ophryo-occipital length and the naso-occipital lengths. The first is 188 mm. (I have taken all measurements in millimetres) the second 187 and the third 186. "O" is therefore 4 mm. shorter than "A," and the glabello-occipital length is the greatest length, as the forehead is slightly receding. The very slight differences between the other two measurements I have given shew that the projection of the glabella, although slight, is sufficient to give the forehead its characteristic shape.

The form of the forehead is of great importance for several reasons. On my first examination I concluded from it that the skull was probably that of a male, but the forehead is often an untrustworthy guide when taken by itself, as we are compelled to do in this case. The forehead of "A" is, as Keith has pointed out very feminine in appearance. That of "O" is on the whole masculine in appearance, but it is always possible that it may represent not a weakly developed forehead of a man, but the comparatively strongly marked feminine supraorbital region of a woman. In those races where the men have a well developed supraorbital torus the female forehead is often not unlike the male forehead in those races where this torus is less developed. The dimensions of the head may possibly be of service, "O" is shorter than "A," but this shortness is by no means inconsistent with the normal variation, the head breadth is also less, but here again quite consistent with normal variation. I should therefore be inclined to suggest that while the dimensions of the calvaria are small, sufficiently small to be consistent with the feminine sex, the form of the forehead suggests a male. If this sex be correct it belonged to a small man.

The head-breadth is actually 134, suggesting an undoubtedly narrow skull, and one four millimetres narrower than "A." Thus while the length falls within the upper range of Keith's medium group the breadth falls within his absolutely narrow group. The cephalic index is 71, a unit narrower than "A." I could not measure the bi-mastoid width.

The curve of the vault, without being high, is not flattened, and there is a very slight approach to the penthouse form. The anterior mastoid width is 125, and the posterior 109, almost identical with "A." The minimum frontal width is only 93, 7 mm. less than "A," which however has a wide forehead, the maximum width is also small, 115, four millimetres less than "A," and therefore, making allowances for the size of the two, exactly comparable.

The width of the supraorbital part of the forehead, measured between the external angular processes cannot be measured, but

again, as in "A" we find that there are but "mild manifestations of muscular development."

Owing to the stalactite I am not certain of the auricular measurement, but it is probably about 116 or even a little greater. This is the same as "A," and size for size suggests a higher skull. The capacity would therefore be low, if the skull is that of a male the Lee-Pearson formula would give a capacity of 1426.

Owing to its fragmentary condition I cannot orient the calvaria, and the facial bones have long disappeared. It is difficult therefore to make any further deductions. The calvaria from Long's Cave in Cheddar is even more fragmentary; I could only measure the width 137-5. It is however of interest to note that it appears to be of the same form. The skull from Ryhope belongs to a very different type. The principal differences are that, while the length is about the same, the breadth is much greater (144), and the height is also considerable, 127, as measured from the basion to the bregma. One of the skulls from Arras which I was able to measure, and which it will be remembered is said by Rolleston probably to belong to the Early Iron Age is extremely comparable to "O," the cephalic index is 72, this unit of difference being due to a shorter glabello-occipital length, the dimensions are 185 by 133. I should class it in the same group, but the minimum frontal diameter is in this case great (102).

The skulls from Weston-super-Mare are of importance. At present it is not possible to make any definite statement as to their date, but it is to be hoped that when the collections in Oxford have been examined some further light may be thrown on them. I am not able to identify the one measured by Dawkins, but it does not appear to be any of those which I examined, he compares it with one from Llandebi, but this specimen seems to be no longer in the Oxford University Museum. The specimens need repair, the only one which I succeeded in measuring is an adult male which closely approximates to "O" in its measurements, except for the minimum frontal diameter which is 100. The cephalic index is 71 (189 by 135). The other specimens appear to belong to the same type.

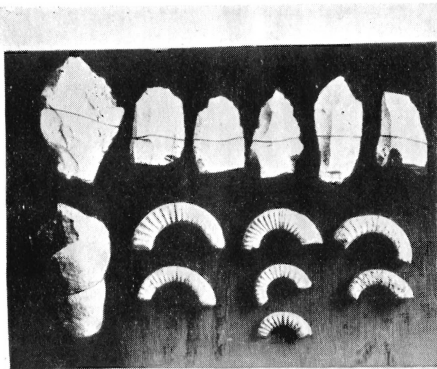
We have then a group of five skulls which can be measured. Two, those from Yorkshire are probably of Early Iron Age date, and were excavated from barrows. The remainder are from caves, the archæology of the cave specimens is doubtful, except for "O." There is one additional calvaria from Cheddar which can not be measured. All this group which I selected because they were labelled in Rolleston's old catalogue as from caves, (although he was proved later to have withdrawn the inclusion of the Market Weighton

specimens), belong with one exception to the same type, the exception being the Ryhope skull. I compared these with the Long and Round Barrow skulls in Oxford which have been measured and described by Schuster (*Biometrika* IV 351). Although there appear to be certain minor points of difference, especially in the form of the forehead, and in the height of the skull, it became apparent immediately that the real difference between the series lay in the head breadth, which is 142 in the Long Barrow specimens and 145 in the Round Barrow skulls (mean value). This coincides closely with the Ryhope value, but not with the others. It is not safe to express any opinion on so short a series, but from an examination of the specimens in Oxford, it would seem as if the cave specimens and the two Early Iron Age skulls, if that is their correct dating, differ from the Barrow series as a whole, although some specimens, especially from the Long Barrows, resemble them closely. The Ryhope skulls on the other hand could not be distinguished from the Round Barrow series.

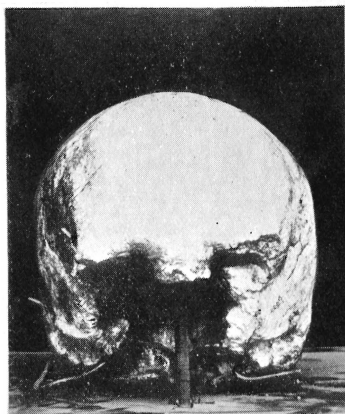
Sir Arthur Keith has drawn attention to the resemblance of his "A" type to the Neolithic specimens from Malta. "O" has almost identical measurements with the series from that island which I examined when I was there. It is interesting to note that in Malta where Long-heads have been succeeded by Round-heads, the difference has been brought about in exactly the opposite way to what seems to have happened among our English specimens, for, although there has been an increase in the breadth, the real difference between the two series is due to the decreased length of the later crania, suggesting that the later comers belonged to a different type altogether from the Round Barrow type in England.

In conclusion I should like to state that in this paper I have relied entirely on physical characters. The archæology of my specimens is unfortunately too doubtful to allow any conclusions to be drawn from them.

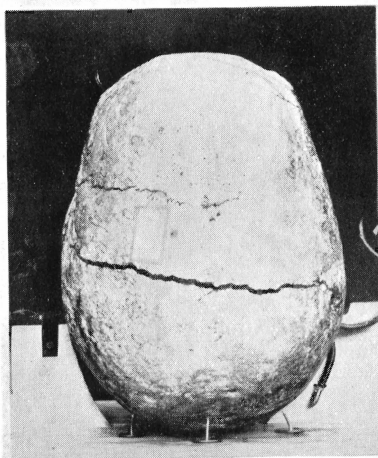
For purposes of reference it may be convenient to record the catalogue numbers of the crania:—Burrington Combe E11/3HA. Mr. Long's Cave Cheddar 250, Ryhope Cave Sunderland 248, Grimthorpe Arras 245, Market Weighton 246, Uphill Cave Weston-super-Mare 251, 252, 253, 254. Numbers from Rolleston's catalogue, (mss 1881), in the Department of Comparative Anatomy Oxford: I am indebted to Professor Goodrich for permission to examine the skulls in his Department, and to Mr. Gray, Assistant in the Department, for help in identifying the specimens.



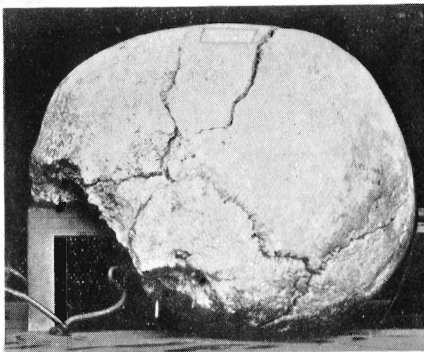
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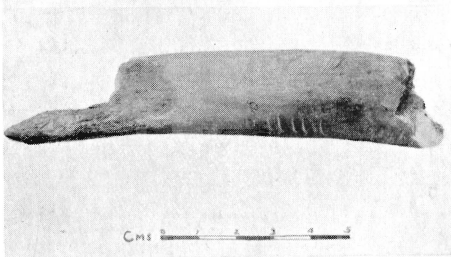
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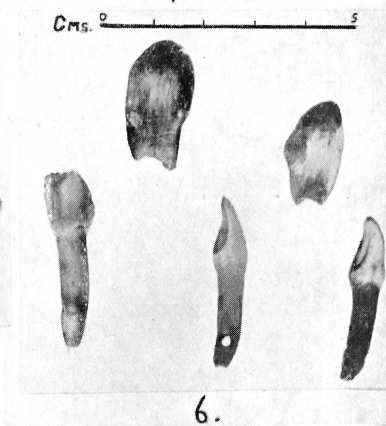


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