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Presidential Address.

Report on material found at "The Cave," Burrington.

By Professor E. FAWCETT, M.D., C.M.

The finding of a part or parts of the human skeleton in the floor of a cave is a source of excitement and speculation to those who find them and to many others. The thoughts of the speculator naturally turn towards the possible period in time occupied by the former owner of these bones, but from the very outset the question is beset with difficulties, many of which have been created for him by the enthusiasm of those who have gone before. In the light of more sober judgment of the present day many of the fantasies of the past may be finally set aside. With the human material at our disposal in this cave we are fortunate in having in association, evidence of man's culture, and this, too, is augmented by the remains of contemporary animals—and there can be no reasonable doubt but that the fauna were contemporary, as all were found together on the same cave floor stratum. The evidence of man's culture lay in the presence of flint tools, some of which are of especial interest as they seem to conform almost precisely with those found at Ofnet, near Munich. Should our interpretation of these flint tools be correct then, following Osborn, "*Men of the Old Stone Age*," p. 475, "This last is exceptionally important because it is the only station where skeletons have been found buried with Azilian-Tardenoisian flints, thereby enabling us positively to determine the contemporary human races." No pottery of any description was found in the cave. The remains of a gigantic undetermined extinct form of red deer, those of cat—presumably wild cat—and the teeth of the brown bear are all important collateral evidence as to the material being of the period just suggested. Further, we have direct evidence that the human skulls conformed with those of two racial types, viz.: the long-headed (Dolichocephalic) resembling the Mediterranean type of Serge, and the broad-head (Brachycephalic) resembling the modern Alpine or Celtic stock, and Osborn informs us that the burials at Ofnet are the first observed in Western Europe which present a mingling of races.

Notes on the human skeletal material found.

Fragments of many skulls were collected, some of which could be fitted together, others which could not be placed. But one skull was practically complete so far as brain-case was concerned, the only parts lacking being the greater part of the basi-occipitals, the whole of the basi-sphenoid and the ethmoid. The bones of the face, save the right malar and a small adjoining part of the maxilla were all wanting, and more unfortunately no specimen of mandible was forthcoming. Several fragments of maxillæ were found, and in these teeth were present, but they presented nothing out of common in their appearance save perhaps that they were very well preserved, and the first molars were of large size.

In another case the bones of the left half of the brain-case could be fitted together, and in another part of the occipital bone, together with most of the two parietals could be articulated, and from them one could adjudge the complete head to have been of the broad-headed type.

Of the most complete skull (Figs. 1, 2, 3 and 4), the following remarks can be made. It was dolicho-cephalic, i.e., long-headed, its length being 192 m.m., its breadth 138 m.m., its breadth index being therefore 70.3. Its height index is practically 74. The auriculo-bregmatic height is 117 m.m. The matter of cranial capacity is one of some difficulty, and varies with the method of determination should that of Manouvrier be followed, which is:

$$\text{Capacity} = \frac{\text{length} \times \text{breadth} \times \text{basi-bregmatic height}}{2 \times 1108} \text{ then the}$$

$$\text{capacity works out at } \frac{192 \times 138 \times 142}{2 \times 1108} = 1697 \text{ c.c., and is absurd.}$$

Should the Pearson-Lee formula, as used by Keith, be adopted, which implies deduction from the height, length and breadth measurements to allow for the thickness of the skull, the capacity is considerably reduced, being in fact reduced to 1209 c.c., which seems too small. Should another Pearson-Lee formula be adopted the capacity rises to somewhere between 1350 and 1400 c.c., which may be about right.

A lateral view of the skull gives one the impression of a full forehead, and that is partly due to the comparative absence of

brow ridges, and this impression is confirmed by a view from the front.

The temporal fossæ are large and relatively long when measured from front to back. Moreover the supra temporal crest which bounds each fossa in front, above, below and behind is extremely well marked, and, what is more, shews marked festooning just behind the coronal suture, for having crossed this suture from before backwards, it suddenly shoots upwards at an angle of about 30 degrees with that suture for about 35 m.m., before taking a backward horizontal course. This is a condition one meets with in cases of giantism (Dixon). The form and size of the temporal fossæ indicate large temporal muscles and possibly a large mandible, at any rate good large molar teeth.

The mastoid process of the temporal bone is fairly large, the occipital bone is well marked on its nuchal area, but as that area is small—and this in combination with small brow ridges—one does not hesitate to class the skull as that of a female who was well endowed with powerful neck muscles (Fig. 4). Many details might be added concerning this skull, but are here perhaps superfluous. Our remarks may be concluded with the statement that the sagittal suture was entirely synostosed, which, if things be as they are now, might indicate an age of about 50. Perhaps however, such skulls were premature in this respect, and this would be a factor in producing dolicho-cephaly.

Of the other crania which were less complete only conjectural measurements can be made, but one is dolicho-cephalic and the other certainly looks to be brachy-cephalic, which is a point of the greatest possible interest. There are other isolated bones such as the occipitals, which appear to indicate a wide posterior part of the cranium, which is another point of interest.

At some distance from, and below the female skull, a female humerus was found, which may have belonged to the same skeleton. There was a fragment of a radius as well, a piece of femur, and another piece of humerus. Several maxillæ were found in a more or less incomplete condition. The *flint tools* were of the late Magdalenian type (Fig. 5), but associated with them were several microlithic flints which are of the greatest possible interest.

Notes on the bones of Quadrupeds found.

The bones of such quadrupeds as the red deer and cat met with were of interest. In the case of the former the frontal bones was smashed (Fig. 6) almost sagittally, but each fragment fitted the other perfectly, and each bore a considerable length of antler. Many other bones of this deer, including an almost complete right half of the mandible (Fig. 7) and a piece of maxilla, in which the teeth, each with an enormous cuspidate cingulum, were present. Vertebrae, ribs and limb bones of this animal were found. One flint flake was found lying against the mandible. The cat's skull (Fig. 8) was complete, and had enormous canine teeth. This skull has also been identified as that of a lynx. A canine and a molar tooth of the brown bear were also found here (Fig. 9c).

The skulls and bones were placed partly in and partly beneath a stalagmite floor of some 8 inches in depth.

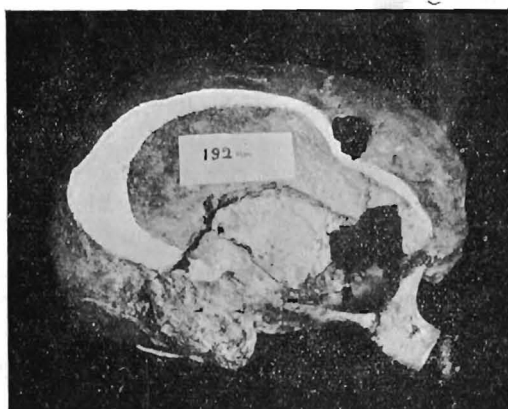


Fig. 1.

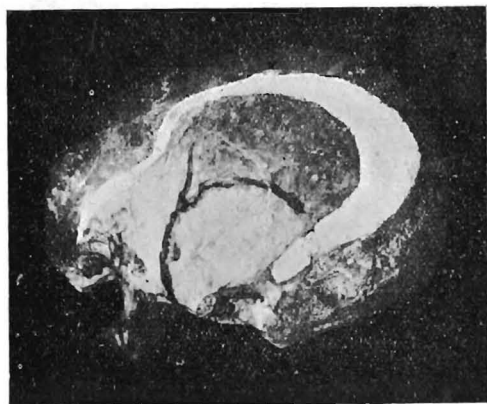


Fig. 2.



Fig. 3.

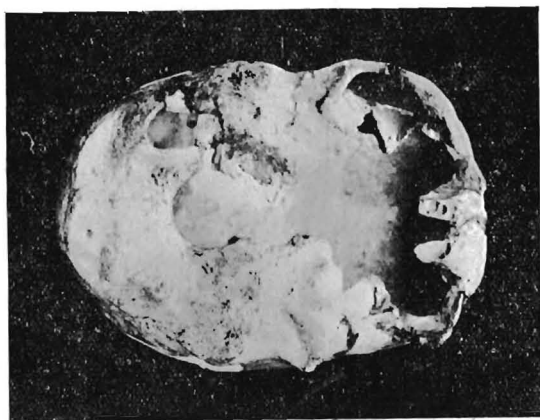


Fig. 4.

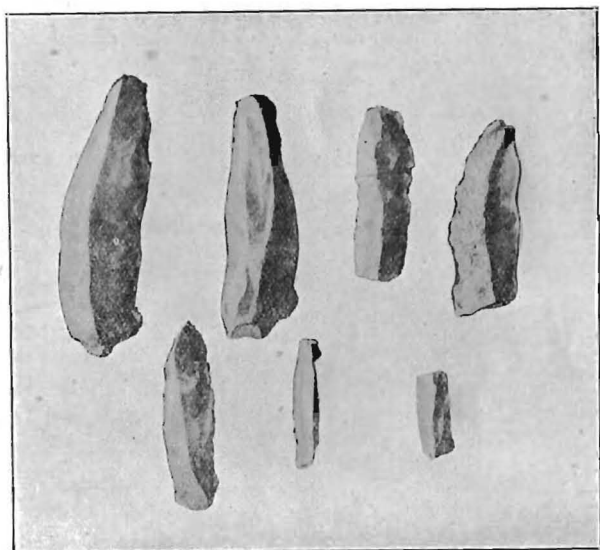


Fig. 5.

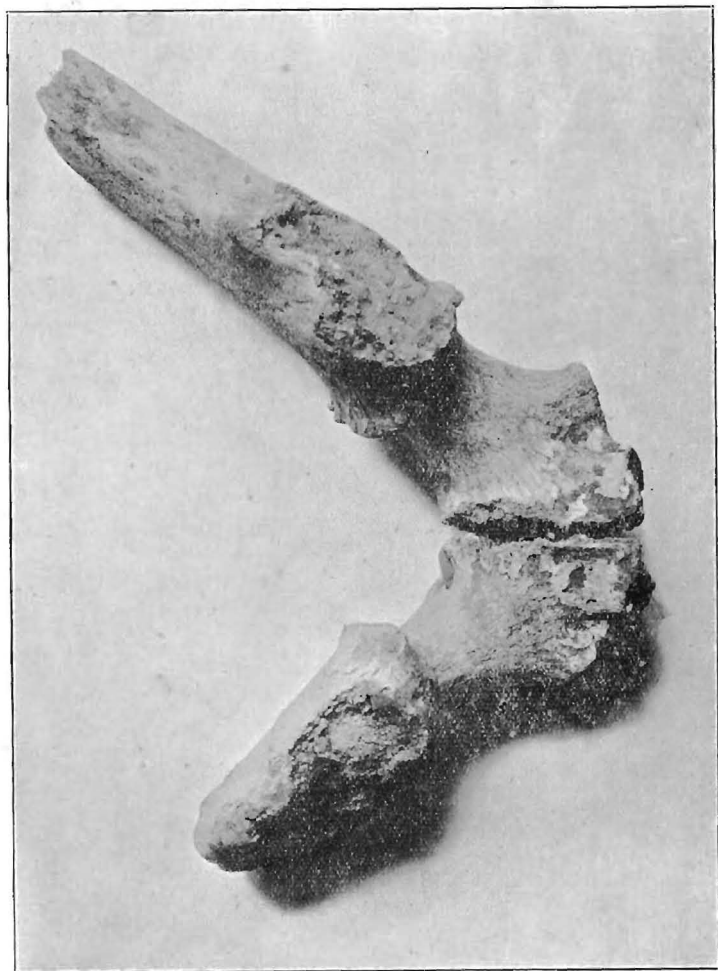


Fig. 6.

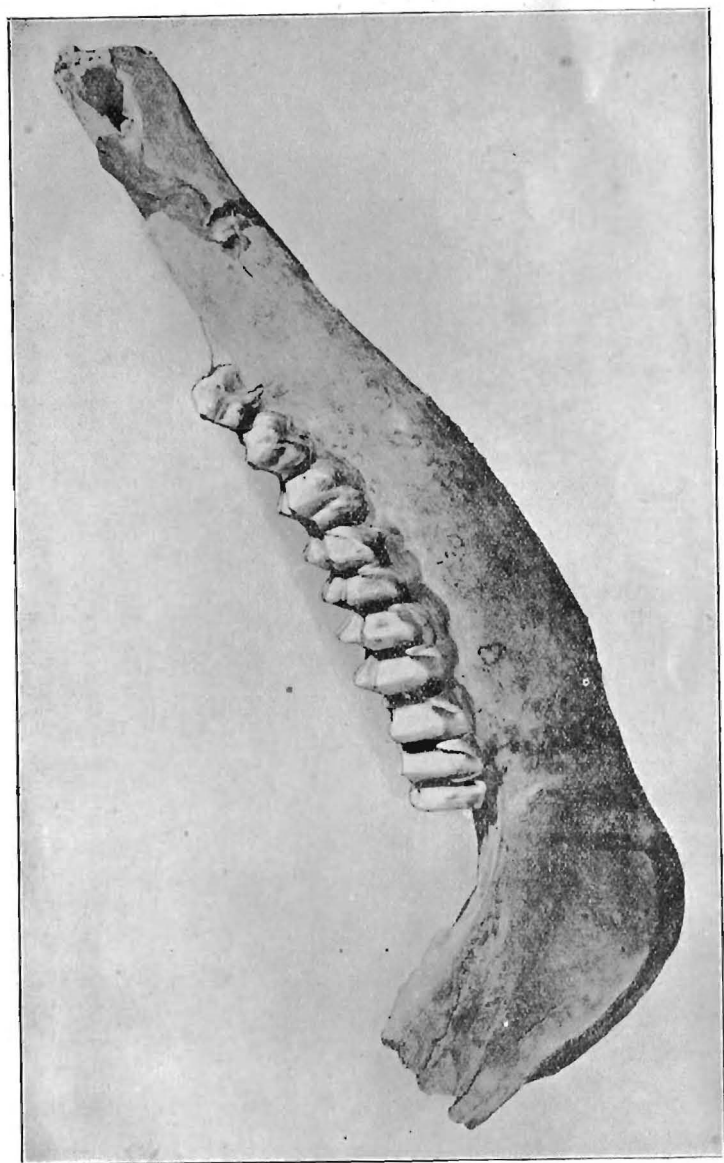


Fig. 7.

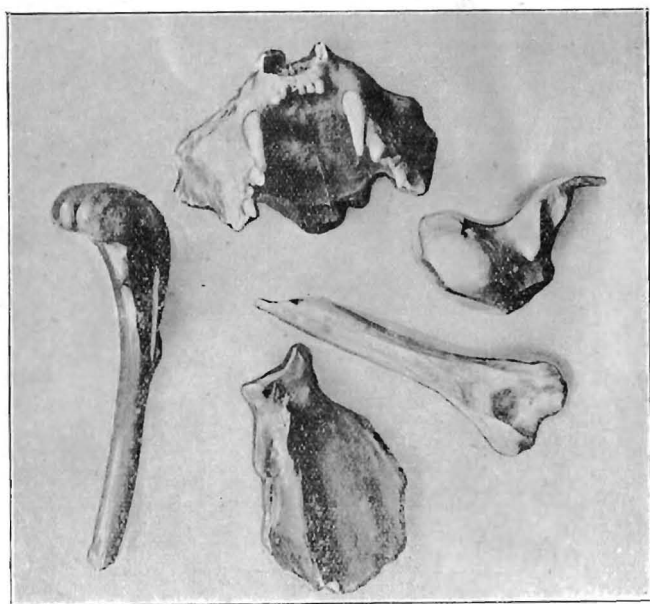


Fig. 8.

a

b

c

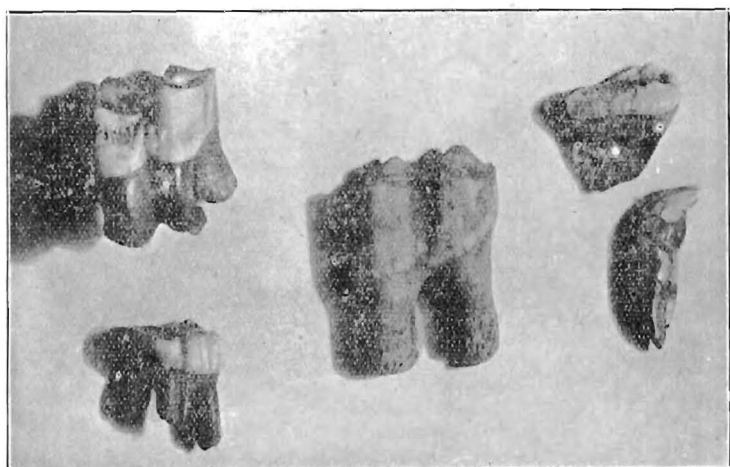


Fig. 9.