The Oldoway Human Skeleton

WE are glad to find from Dr. Leakey's letter in NATURE of May 14 that he is in agreement with us in regarding the Oldoway skeleton as an artificial burial, and regret that, in common with everyone else whom we have consulted in this matter, we interpreted his original letter in NATURE of Oct. 24 to mean that it was naturally deposited without human agency in Bed 2.

With the recognition that it was buried by man, the discussion of its date rests on a series of hypotheses and presumptions which, even at their best, can never give a certainty comparable with that given by a natural deposition.

So far as can be discovered from published sources, the skeleton lay embedded in Bed 2 below a sloping surface dipping down toward a stream course. Bed 2 at the site of the interment was not, when Prof. Reck began his work, covered by Bed 3, which had presumably formerly extended over it but had been removed by erosion. Dr. Leakey now claims that the skeleton was buried in Bed 2 before Bed 3 was deposited over it. This involves the supposition that the deposition of the materials of Bed 2 took place in water so shallow that a bedding plane was at one time exposed to air and sufficiently dried to allow men to walk over and dig a grave in it.

We know of only one line of evidence which could give certainty of the occurrence of such a condition, and should be glad to hear Dr. Leakey's reasons for believing that it has occurred.

Granting this fundamental postulate, we have to consider the evidence that the grave was not dug in comparatively modern times. Dr. Leakey claims that at a time less than fifty years ago the site of the burial was covered by an extension of Bed 3, and that hence, unless the burial took place before Bed 3 was deposited, or less than fifty years ago when Bed 3 was removed, some material of Bed 3, which differs markedly in colour and texture from Bed 2, must have been included in the grave infilling.

Dr. Leakey, however, has shown that some survey pegs inserted by Prof. Reck in 1913 were still *in situ* in 1931, so that the rate of denudation is demonstrably slow. Thus Dr. Leakey's estimate of fifty years implies that the natural surface above the grave of the Oldoway skeleton lay only a few inches below the base of Bed 3. It is clear that an estimate of so small a thickness could only be made if the surface of Bed 2 on which Bed 3 rests is exceptionally plane, and if an elaborate series of levels had been made at the time of the original discovery before the land surface was destroyed. We understand that in fact Bed 2 is merely represented by *remanié* materials in the neighbourhood of the skeleton. It is thus extremely doubtful if it would be possible to make any sufficiently accurate measurements to justify Dr. Leakey's estimate of fifty years. But in any event, the rate of denudation under the conditions existing at Oldoway must vary so greatly from yard to yard, falling probably to nothing where there is any protection afforded by vegetation, that the period required could not be estimated even if the data as to thickness were established.

The photographs published by Prof. Reck show that the whole of the upper and a good deal of the lateral surfaces of the skeleton were exposed during the excavation made for its removal, and it is hence probable that Prof. Reck removed it and a pedestal of the rock on which it rested by the ordinary method of hardening and bandaging. It need scarcely be pointed out that the only material certainly of the grave infilling carried to Munich in this way is that which is contained within the ribs and between the limbs and the trunk, and that this was the first earth to be thrown back again into the grave.

The material of Bed 3 as it exists in a *remanié* form in the neighbourhood of the grave seems to consist of small calcareous nodules of varying hardness stained red with ferric hydrate. It is quite conceivable that their colour might be materially altered by contact with a decaying body. If the thickness of Bed 3 penetrated in the grave was small in proportion to that of Bed 2, the admixture would be small in any case, and the whole of the materials of Bed 3 excavated might be so completely covered during removal by those of Bed 2 that when this soil was shovelled into the grave, it is possible that the whole of the Bed 3 materials might be included in the mound above the surface and none reach the bottom of the pit. Thus although the discovery of a single fragment of Bed 3 in the grave infilling would show that the grave was dug through this bed, the absence of such a fragment does *not* show that the pit did not pass through it.

It is evident that the grave infilling which remained in the block when it was sent to Munich only represents a small proportion of that which filled the whole grave, and as the skeleton was still undisturbed when Dr. Leakey examined it in 1925, it is clear that the proportion of the total volume of the grave infilling which he saw was minute. It is, furthermore, a universal experience that the appearance of a mass of rock is greatly altered by the process of hardening and bandaging; and, as we have pointed out, mere proximity to a large decaying body often alters the character of a matrix. Thus we feel that Dr. Leakey is rash in stating that there is no trace of Bed 3 in the grave infilling.

If Dr. Leakey be held to have established that the grave of the Oldoway man was not dug through Bed 3, he has still to show that it cannot have been dug during the period which has elapsed since the removal of Bed 3 took place. We have already shown that his estimate of fifty years is a guess, owing to the lack of adequate data as to thickness and to the variable rate of denudation from place to place.

Dr. Leakey's evidence that the bones of the skeleton seem to be as much mineralised as the others in Bed 2 is of no great value. The specimens now in the Natural History Museum from this bed vary immensely, from bones easily powdered between the fingers, to others which are hard and brittle. No one can ever say how long it takes any bone to reach any particular physical or chemical state.

The only other evidence which Dr. Leakey advances is that the anatomical characters of the skeleton cannot be matched amongst the local natives. But we understand, though we have not seen their work, that Messrs. Gieseler and Mollison, who have recently described the remains, point out resemblances to the Masai who still inhabit the district.

It is thus apparent that the evidence Dr. Leakey has so far adduced in no way excludes the supposition that the Oldoway skeleton represents a burial of relatively recent date.

The remainder of Dr. Leakey's letter in NATURE of May 14 has no relevance to the particular problem of the age of the Oldoway burial, which is the only one with which we are concerned.

C. FORSTER COOPER.

University Museum of Zoology,
Cambridge.

D. M. S. WATSON.

University College,
London.