

REPORT ON A VISIT TO THE SITE OF THE EYASI SKULL,
FOUND BY DR. KOHL-LARSEN.

PART I.

By L. S. B. Leakey, Ph.D., M.A.

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INTRODUCTION.

In July, 1936, I was invited to go to Berlin to examine the fragments of a fossil skull which had been found by Dr. Kohl-Larsen at the North-East end of Lake Eyasi during his 1934-36 Expedition.

In "Nature" (Dec. 26, 1936—page 1082), I published a preliminary note on the views I had formed as a result of examining the skull itself and the associated finds. Briefly, my views were that the skull was not of *Homo sapiens* type, and that it was of Upper Pleistocene age, being associated with a fauna indicating the age as Gamblian Pluvial, and with an industry of the Levalloisian culture.

After my note was published in "Nature," it was suggested to me by various workers that an Upper Pleistocene (Gamblian) date was unlikely, owing to the fact that the skull represents an extinct type of man. In consequence I made plans to visit the site in 1937, in order to examine the evidence for the age of the skull on the spot.

The Royal Society very kindly provided funds to enable me to go from Kenya, where I was then working, and, at the special request of the Royal Society, the Geological Department of Tanganyika Territory agreed to send Mr. Reeve to carry out the Geological side of the study of the site. His report is now published with mine.

The original plan was to visit the site in company with the discoverer of the skull, Dr. Kohl-Larsen, but at the last moment he was detained in Germany. Although he was therefore unable to come with us himself, he very generously arranged with his son, who had a farm in the Territory, to provide us with one of his original native workmen to act as our guide. For this help we were exceedingly grateful.

The site was eventually reached on Nov. 4th, 1937, in the afternoon, and during the succeeding three days we studied all the available evidence as carefully as was possible under the circumstances.

THE SITE.

The site is situated on the extensive flats which border Lake Eyasi in this region, and although at the time of our visit, which was at the very end of the dry season, the edge of the lake was about 600 yards distant, it was obvious that during the last wet season the lake level had risen sufficiently to flood the site itself, and had only recently receded.

Since the site thus lies at the approximate level of the lake during the wet seasons, there were practically no natural exposures, the few there were being exposed in shallow erosion gulleys, hardly worthy of the name. The deepest natural exposure noted within half a mile of the site in any direction had a depth of only slightly over three feet.

Dr. Kohl-Larsen described the fossil bones as coming from a "bone-bed." This "bone-bed" was found to be more strictly a bone-bearing horizon, which consisted of a deposit of slightly consolidated sand, but it was certainly not a sandstone in the ordinary sense. It overlay a thin stratum of greenish clay with sporadic fish remains. The greatest depth of the bone-bearing sand noted by us was in our Pit No. 1, where it was 49 inches thick.

Over an area of several acres, this bone-bearing sand had been eroded into gentle slopes by the seasonal rains, and the accompanying fluctuations of the lake. As a result of this, the coarser materials in the sand, including the fossil bones, are washed out and left lying on these slopes. Many fragments of bone, including some bones and teeth, can therefore be collected from these slopes. All this bone is heavily mineralised, most of it is black in colour with some browner pieces, and both rolled and unrolled bones occur together.

Very few complete or even identifiable pieces of bone were found by us during our visit, as the whole area had been carefully combed by Dr. Kohl-Larsen in 1936, and the amount of erosion since then has been small. Faunal evidence as to the age of the deposits can therefore only be adduced from Dr. Kohl-Larsen's collection.

On the other hand, during the digging of our Pit No. 1, it was definitely established that the sand which we identified as Dr. Kohl-Larsen's "bone-bed" does contain bone, and two unrolled vertebrae, probably of hippopotamus, were found *in situ*. Besides these, a few heavily rolled fragments of bone were also found in this deposit.

This association of both rolled and unrolled bone *in situ* in the deposit is very important because the fossil bones collected by Dr. Kohl-Larsen include a few heavily rolled bones and teeth, in addition to a large number of unrolled specimens.

When I was in Berlin in 1936 to examine the collections, I noted that a separation of the fauna into species represented by rolled and unrolled remains was very informative. The rolled fauna included the following:—

Hipparion sp. Two very rolled teeth and perhaps one or two fragments of limb bone.

Simopithecus sp. Several rolled teeth.

Giraffid teeth and

Half a mandible of a large carnivore.

Of these, the first two are extinct genera which are characteristic of the Middle Pleistocene fauna of East Africa, while the other two, although not characteristic, also occur at that period.

The *unrolled* fauna in the Berlin collection included the remains of a much greater variety of species, which with very few exceptions are living species, such as the black rhinoceros, white rhinoceros, hippopotamus, zebra, giraffe, wart hog, forest hog, several antelopes and a porcupine. The only extinct species in the *unrolled* fauna were a bovid of the *Bubalus* type and possibly an antelope and a carnivore.

This unrolled fauna, consisting chiefly of living species with a few extinct forms, such as *Bubalus*, is typical of the Gamblian Pluvial deposits of East Africa, that is to say of the Upper Pleistocene.

It must be noted in fairness that most of the above mentioned species also occur in the Middle Pleistocene, side by side with extinct genera such as *Hipparion* and *Simopithecus*, but the two latter do not occur, unrolled, as far as we know in any Upper Pleistocene deposits in East Africa. In the Eyasi deposits these extinct genera which Dr. Kohl-Larsen found occur *only as very rolled and derived fossils*.

It should be noted here that the fragments which represent the principal human skull from this site are unrolled and that the skull must be regarded as belonging with the unrolled fauna, which—taken as an assemblage—indicates an Upper Pleistocene age.

Although this fauna is mainly composed of living species, the presence of such animals as the white rhinoceros and the forest hog, whose present distribution does not include this area, as well as the extinct species *Bos bubalus* shows that we are not dealing with a fauna of absolutely recent date.

THE CULTURE.

Although no artefacts were found by us *in situ* in any of the pits or trenches which we dug, two were found as a result of breaking open lumps of the sandy bone-bearing bed which were on the dump of Dr. Kohl-Larsen's excavations, thus confirming his statement that the artefacts are in the "bone-bed."

In addition to this, a certain number of artefacts were found by me lying on the above-mentioned eroded slopes associated with the fragments of fossil bone, and clearly being washed out of the bone-bearing sand.

With the sole exception of one or two broken and probably derived hand-axes, all the artefacts from this site in the Berlin collection, as well as those found by us, belong to a typical Levalloisian assemblage, and they correspond closely to Levalloisian material from Gamblian Pluvial deposits in Kenya Colony. In other words the evidence of the culture confirms the Upper Pleistocene date indicated by the fauna.

THE GEOLOGICAL EVIDENCE.

The details of the geological evidence that we were able to obtain is the subject of Mr. Reeve's geological report (See Part II). I will therefore confine my remarks to certain broad issues.

In dealing with Tertiary and Quarternary deposits one of the chief lines of evidence to be used for dating purposes must always be that given by the fossils, if there are any. In the present case, the evidence of the fossils found by Dr. Kohl-Larsen is quite clear, and it points to a post-Middle Pleistocene date, although heavily rolled and therefore *derived* Middle Pleistocene fossils occur in the deposit. The fossils that are unrolled and therefore contemporary with the deposits indicate, on the other hand, an Upper Pleistocene date.

Secondly, in East Africa, and particularly in the Rift Valley zones, we know that the Middle Pleistocene period was followed by a period of very severe earth movements, and we know, too, that these movements were very marked all round the Eyasi region.

The Middle Pleistocene deposits of the Olduvai Gorge, for example, which are only about thirty miles away from the Eyasi site were seriously affected. The Eyasi Lake basin itself is almost certainly a product of this same Middle Pleistocene faulting, forming as it does a direct continuation of the Balbal Depression, and separated from it only by Lemagrut mountain, which is itself cut to some extent by these faults.

If the Eyasi deposits which are the subject of this report, were of Middle Pleistocene age or earlier, they could hardly have failed to have been affected by the disturbances of the earth's crust which, as we know, followed immediately after the Middle Pleistocene.

Instead, we find that they lie on the floor of the Rift Valley, and so far as we could discover, are quite undisturbed. They appear to be quite comparable in this respect to deposits laid down during the Gamblian Pluvial period, in the various lake basins situated in the floor of the Rift Valley to the North.

THE SKULL FRAGMENTS.

What is known as the Eyasi Skull is that reconstructed from a number of unrolled broken fragments that were found together, and it must not be confused with a distinct and separate skull fragment which will be mentioned later.

As I noted in "Nature" (Dec. 26th, 1936), the Eyasi Skull is definitely not of *Homo sapiens* type, but represents an extinct species, or even an extinct genus of man, allied to *Paleoanthropus*. This skull has now been studied in detail by Dr. Weinert of Kiel, who has created a new genus *Africanthropus* for it. From the available evidence, which I have summarised above, it would seem to be quite clear that this skull is younger than the Middle Pleistocene and that it represents a maker of one of the African branches of the Levalloisian Culture.

For some years now, it has been known that in East Africa during the Gamblian Pluvial period there were two contemporary cultures, the Kenya Aurignacian, and the African Levalloisian. The type of man who made the former is known from Gamble's Cave and elsewhere, and is *Homo sapiens*. The Eyasi Skull represents the makers of the Levalloisian culture, and, as might be expected, is not of *Homo sapiens* type. This agrees with all the European evidence, where the skulls associated with the Mousterian-Levalloisian complex are invariably of the Neanderthalian type.

THE ROLLED SKULL FRAGMENTS.

In addition to the Eyasi Skull, Dr. Kohl-Larsen's collection included a small rolled skull fragment; this is too small to be determinate, but the possibility must not be lost sight of that this piece may belong with the rolled Middle Pleistocene fauna, and have no connection with the principal Eyasi Skull. Equally it may have been collected on the surface, and be regarded as having been rolled on the slopes of the mounds in very recent times.

CONCLUSIONS.

There is nothing in the evidence resulting from our visit to the Eyasi site to contradict the view expressed in the paper published by the late Professor Reck and Dr. Kohl-Larsen in "Geologische Rundschau" (Nov., 1936), that the Eyasi Skull is of Upper Pleistocene age. Rather does our work confirm such a finding in all respects.

