

even reasonably large organic nucleoproteins on Earth would have been most unlikely.

We hope that these results, which will be presented in much greater detail elsewhere, will help form a useful basis for future examinations of insoluble organic matter which might be present not only in Pre-Cambrian sediments and carbonaceous chondrites but also in lunar or other extraterrestrial rock samples.

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J. BROOKS  
G. SHAW

School of Chemistry,  
University of Bradford.

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## Recent Discoveries of Hominid Remains at Olduvai Gorge, Tanzania

MORE remains of hominids have been recovered at Olduvai Gorge since field work was resumed in October 1968. The most important of these is a crushed, but nearly complete, cranium (Old.H.24) which was found eroding from deposits in Lower Bed I at site DK East. (In the revised stratigraphy of Olduvai Gorge proposed by R. L. Hay, which includes the basalt and the underlying sediments within Bed I, this horizon would be termed the lower part of the Upper Member of Bed I.)

The DK cranium is embedded in a block of particularly hard lime concretion and has been compressed vertically and from side to side, with the result that some fragments of the vault overlap one another and other parts are displaced from their original positions. The frontal is damaged on the left side, but the right supra-orbital region is well preserved. The face is also broken into several pieces which are now out of position but can almost certainly be reassembled, once they have been taken apart and cleaned. The nasal bones are intact and do not appear to have been distorted. The base of the skull is well preserved, including the foramen magnum, occipital condyles and the right mandibular fossa. Almost the whole of the occipital is also present, although it is cracked and broken into a number of pieces. At the time of the discovery, all the teeth and the anterior part of the palate were missing. Extensive sieving and washing of the surface deposit in the area have led to the recovery of nearly the whole missing part of the palate, the right M<sup>1</sup> and half

the right M<sup>3</sup>, the left M<sup>1</sup> and M<sup>3</sup>, the left P<sup>3</sup> (damaged) and P<sup>4</sup> and other tooth fragments.

The cranium is now being prepared for study at the Centre for Prehistory and Palaeontology in Nairobi by Mr R. Clarke. Positive taxonomic identification will not be possible until it has been reconstructed, but the appearance of the parts now visible and of the teeth indicates that it closely resembles the hominid remains that have been referred to *Homo habilis* and that it is dissimilar from *Australopithecus boisei*.

The specimen was obtained from the earliest known fossiliferous horizon at Olduvai. This deposit lies a few feet above the basalt and is overlain by the ignimbrite (Tuff I<sup>B</sup>) which has been dated at 1.75 m.y., a date that has proved to be one of the firmest obtained for Olduvai by potassium-argon dating. Only scattered artefacts occur in the area where the cranium was found, but at the main DK site, a few hundred yards to the west, an Oldowan industry was found at the same horizon when excavations were undertaken there in 1963. It was at this site, too, that the stone circle, believed to be the remains of a windbreak, was uncovered. In 1959, at site MK, approximately 0.75 mile downstream from DK, two hominid teeth were found in the same deposit. These teeth have been referred to *Homo habilis*.

Further hominid discoveries include two isolated molars (H.21 and H.27) which were found on the surface of Bed I at sites FLK North and HWK East, respectively. These teeth can be compared with *Homo habilis*. A massive unerupted upper molar from FLK (H.26) comes from a locality less than 200 feet from the site where the cranium of *Australopithecus boisei* was found. This tooth can probably be attributed to a second individual of *A. boisei*.

Part of a left side of a mandible (H.23) has also been found *in situ* in the upper part of Bed IV at FLK. The fragment contains M<sub>1</sub>, M<sub>2</sub> and P<sub>4</sub> as well as the sockets for the canine and P<sub>3</sub>. The crowns of the teeth have been weathered and worn smooth so that their morphology is not clear and it is impossible at present to indicate the taxonomic position of the specimen. Several large, well made bifaces and other tools, with which it was associated, have, however, been recovered by excavations now in progress.

A second and more complete mandibular fragment (H.22) was found on the surface between sites VEK and MNK in the Side Gorge. It consists of the right side, broken at the symphysis in the mid-line. The condyle and coronoid and M<sub>3</sub> are also missing, while the canine and incisors have been broken off at the alveolar margin. M<sub>1</sub>, M<sub>2</sub>, P<sub>3</sub> and P<sub>4</sub> are present, however, and are in an excellent state of preservation. Although the mandible was found on the surface, it is almost certainly derived from Bed IV or Bed III, on account of both the condition of the bone and the nature of the matrix with which it was coated. This consists of a hard, gritty deposit that is characteristic of certain levels in the lower part of Bed IVa and Bed III. The specimen can be provisionally ascribed to *Homo cf. erectus*.

Five teeth belonging to Old.H.16, a cranium discovered in 1963 at FLK Maiko Gully, which had been extensively damaged by cattle after eroding out on to a track leading down into the gorge, have also been recovered. Three of the teeth found recently were *in situ*, 2 feet above the Marker Tuff I<sup>F</sup> at the top of Bed I. The stratigraphic position of H.16 is thus confirmed as Lower Bed II.

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M. D. LEAKEY

National Centre for  
Prehistory and Palaeontology,  
PO Box 30239,  
Nairobi, Kenya.

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