NEW FINDS AT OLDUVAI GORGE

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IN *Nature* of December 17, 1960, p. 1050, I reported the discovery of the bones of a hominid foot as well as some other specimens, in deposits of Bed I at Olduvai, but in a geological stratum lower than that which yielded the skull of *Zinjanthropus* in 1959.

The deposit at site *F.L.K.N.N.* I, which yielded the foot bones, the few hand bones, some tiny skull fragments, the two clavicles and the 'lissoir', has since then yielded the greater part of a hominid mandible (see Fig. 1) (found by my son, Jonathan Leakey, on November 2), as well as parts of two hominid parietals (see Fig. 2).

From the mandible, it is possible to estimate that the age at death of this individual was about twelve years. This is on the basis of present-day tooth eruption, since the second molars are in occlusal position but little worn, while there is no sign whatsoever of the eruption of the third molars. It is realized, of course, that in Lower Pleistocene times growth may have been more rapid, and that this jaw may perhaps represent an individual of less than twelve years.

The new mandible can be regarded, almost certainly, as belonging with the two parietals, the foot bones, some of the hand bones, and one of the clavicles. Since these remains represent a hominid which is stratigraphically earlier than *Zinjanthropus*, they are of considerable scientific interest.

Although detailed study has not yet been undertaken, the following facts may be placed on record:

(*a*) The overall dental pattern does not appear to be compatible with the type seen in *Zinjanthropus* or any other Australopithecine, and it seems possible that we are dealing with a quite distinct type of early hominid.

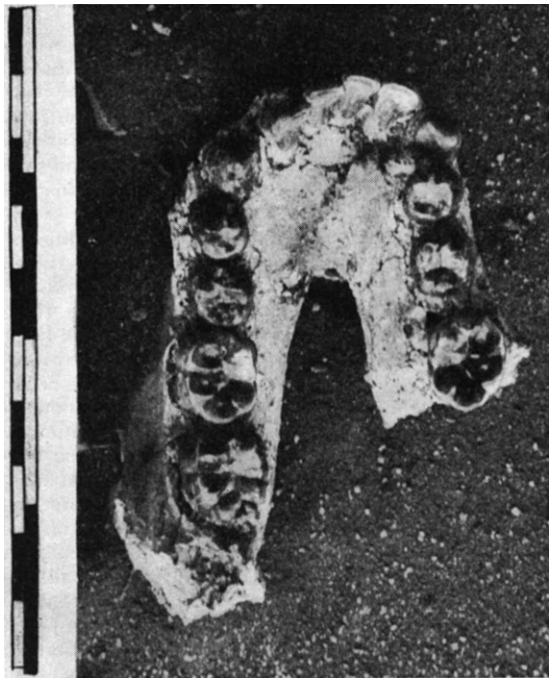

Fig. 1. The new jaw from site *F.L.K.N.N.* I Olduvai

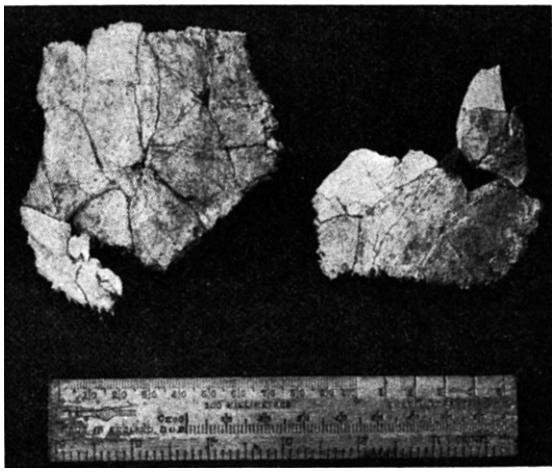

Fig. 2. Two frontals of a juvenile. They are a little larger than those of *Zinjanthropus*, and probably belong with the mandible

(*b*) The lower canines, while relatively large, are wholly hominid in type and morphologically quite unlike the canines of pongids, but recall *Australopithecus*.

(*c*) The lower incisors are also hominid in their general morphology although they do, to some extent, recall the lower incisors of *Proconsul*.

(*d*) The premolars are remarkable and are unlike what is normally to be seen in the Australopithecinæ. The anterior–posterior length in both the third and fourth premolars is greater than the bucco–lingual width, while the fourth premolar has very well-marked cuspules bordering the edge of a large posterior fovea.

(*e*) The first molar is well worn and has a general cusp pattern reminiscent of what can be seen in some recent Australian Aborigines, but it is of course larger.

(*f*) The second molar is much longer than the first and is remarkably elongate.

The mandible was unfortunately broken prior to fossilization, and part of the right ramus has been distorted and made to appear much nearer to the left half than is really the case. The *corpus mandibulare* is very massive indeed. Unfortunately, the lower margin of the mandible is missing, so that it is not possible to say anything about the lower rim of the mandible or of the symphyseal region.

The two parietals are especially remarkable because, although they apparently belong to a young individual only twelve years old (or less), they are larger than those of *Zinjanthropus*. They are remarkably thin, and exhibit no sign of a sagittal crest or of any marked temporal line. The lack of both these may, perhaps, be due in part to the youthful age. Nevertheless, these parietals suggest that we are dealing with a hominid with a larger brain capacity, as well as somewhat less specialized, than *Zinjanthropus*.

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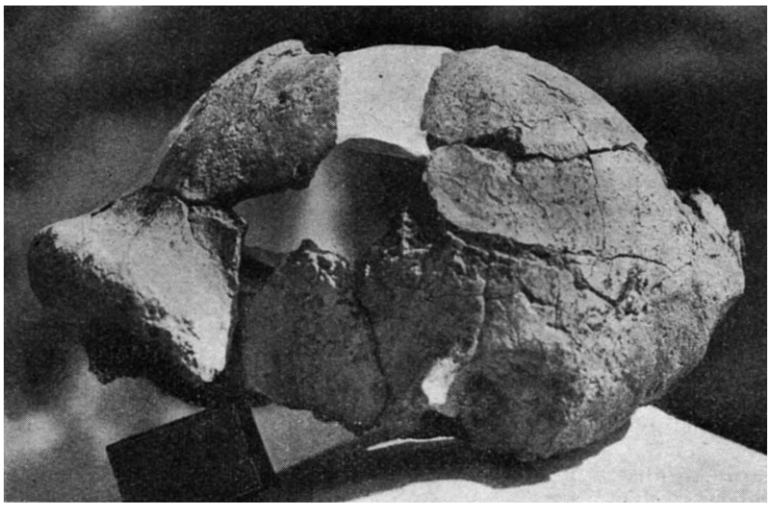

Fig. 3. Profile view of the skull of a man from Bed II Olduvai (*L.L.K.* II) found at a level which yielded abundant stone tools of Stage 3 of a Chellean culture. The skull is 209 mm. long

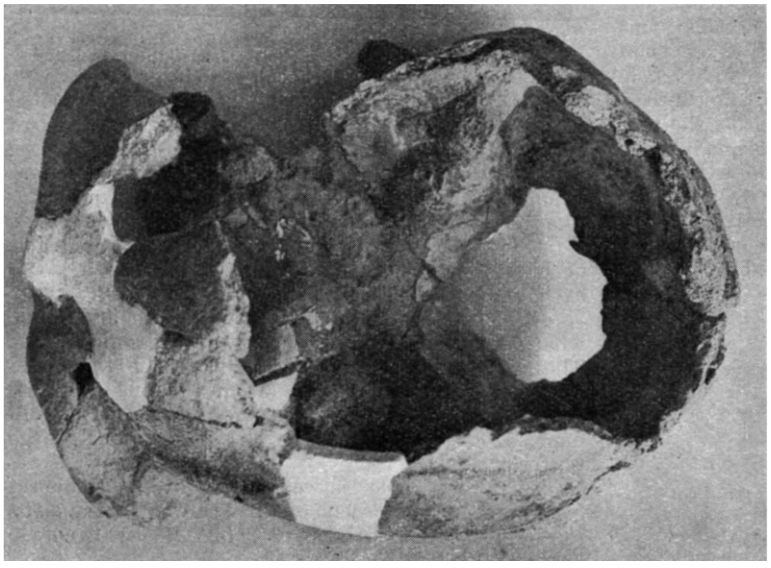

Fig. 4. View of the skull of Fig. 2 from above, to show the brow ridge area and other characters

At the time of writing the communication published in *Nature* of December 17, very few stone tools had been found in this lower level; since then, more have been found.

Another discovery of outstanding interest was made on December 2. This consists of the brain case (see Figs. 3 and 4) of a hominid from Bed II at Olduvai, at Site *L.L.K.* This skull was found at a stratigraphic horizon which yields quantities of stone tools of stage 3 of the Chellean culture. It may reasonably be assumed that we have, at last, found a skull representing the makers of the Chellean culture.

The Chellean culture was the first recognized stone-age culture ever to be officially accepted by science more than a century ago, but in all the years that have followed, no authentic find representing 'Chellean man' has been made other than two teeth found at Olduvai in 1954, and reported in *Nature* in 1958. In this connexion it must be noted here that *Atlanthropus*, found by Prof. Arambourg in North Africa, was, in the first instance, placed on record as being associated with Chellean tools; but this has since proved to be incorrect, since the cultural material found with them is quite clearly of Acheulean type.

This new skull from Olduvai, which comes from the well-established Chellean horizon in the gorge, is remarkable in a number of respects. It has a number of resemblances (although some of them are only superficial) to the Pithecanthropines. In other characters, however, the new skull shows considerable resemblances to the Steinheim skull from Germany, a specimen which is usually regarded as contemporary with the early phases of the Acheulean hand-axe culture and assigned to the genus *Homo*. The new skull also shows certain resemblances to two well-known African fossil skulls, those from Broken Hill and Saldhana, respectively. It is very large—209 mm. long and 150 mm. wide—and while the vault of the skull is low compared with present-day man, it is high compared with the fossil skulls from Java and Pekin. No discussion of points of detail will be attempted at present.

The third discovery made in recent months is that of an exceptionally rich living floor of a late stage of the Oldowan culture, some 20 ft. higher in Bed I than the *Zinjanthropus*-level and immediately underlying the 'marker bed' at the top of Bed I. The cultural material in this new floor is associated with a very rich fauna and is of special interest because it provides an intermediate stage between the ordinary Oldowan and stage 1 of the Chellean, as found at sites such as *B.K.* II. Moreover, the study of the fauna found here indicates that, at this level, man had more skill in hunting the large adult animals living at that time than is shown at the *Zinjanthropus*-level.

I wish to thank the National Geographic Society, which has enabled us to work in the field continuously since February 1960, with a large party. I also owe special thanks to my wife and to my son Jonathan, and to my senior assistant, Heselon, on whom the bulk of the work in this very long season has fallen. I am grateful to the Geological Survey of Tanganyika for making available the services of Dr. Pickering to carry out geological mapping on the sites, and on the Gorge as a whole. I also thank the many individuals, too numerous to name, as well as the Wenner Gren Foundation and the Wilkie Foundation, who have helped in a variety of ways to make this further season possible.

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