

news and views

New finds from Lake Turkana

from a Correspondent

ONE of the most exciting aspects of anthropological discoveries in East Africa over the past few years has been the clear demonstration of the existence of the genus *Homo* at a date much earlier than previously thought. Before these discoveries some palaeo-anthropologists had advocated a model of human evolution centring on a single, slowly evolving lineage. Although the evidence in Bed I, Olduvai Gorge and at Swartkrans, South Africa, had earlier indicated two separate, contemporaneous forms of hominid, the "single species hypothesis" continued to find favour in some circles. The discovery of KNM ER 1470 in 1972 was a crucial event in effectively challenging the one lineage concept. Subsequently, evidence of the early presence of *Homo* has been reinforced by further discoveries at Lake Turkana (formerly Lake Rudolf) and at Hadar, Ethiopia. Preliminary reports on Mary Leakey's new material from Laetoli, near Olduvai Gorge, may place the earliest evidence for the genus there at about 3.75 Myr. The lowest levels at Hadar, which may contain *Homo*, may also be near that date.

It now seems clear that the genus *Homo* existed at a very early date. It also seems clear that the taxon *H. erectus*, generally agreed to be ancestral to *Homo sapiens*, may have more antiquity than previously realised. In this issue of *Nature* (page 574), Richard Leakey reports the discovery of a new skull from Lake Turkana (KNM ER 3733); this skull bears a number of similarities with material from Peking which has been attributed to *Homo erectus*. A pelvis (KNM ER 3228), discovered stratigraphically below the skull, shows some features like those found in OH 28, from Bed IV, Olduvai Gorge. OH 28 has also been attributed to *Homo erectus*.

While the newly described material from Lake Turkana is not the earliest evidence of *Homo erectus* it may be the earliest yet found in Africa. Previously, the earliest clear African member of *Homo erectus* was the OH 9 skull from near the top of Bed II, Olduvai Gorge; this level has a date of about 1.1 Myr. The taxon has, how-

ever, been reported from the Djetis beds, in Java, in levels probably slightly younger than 1.9 Myr (Jacob, *Antiquity*, 47; 1972). Although the data of the new Lake Turkana material is not clear it would seem to have a minimum date of 1.3 Myr (Leakey and Walker, page 572 of this issue).

This strong evidence of the early and widespread presence of *Homo* poses some interesting questions. Foremost among these perhaps is the nature of the evolutionary relationships between this genus and known members of the genus *Australopithecus*. Although the classification of this Plio-Pleistocene genus is the subject of some controversy, it is generally agreed that within this group was a heavily built, "robust", lineage probably demonstrating some dietary specialisations. This group, variously called *Paranthropus robustus*, *Australopithecus robustus* or *Australopithecus boisei*, was in clear sympatry with *Homo* at several African sites. There is little agreement, however, on whether other Plio-Pleistocene hominids of a less robust morphology should also be placed within this genus. Some workers do recognise a "gracile" species, *Australopithecus africanus*, best known from Sterkfontein, in South Africa. Others, such as Robinson, however, have postulated that all members of the "gracile" type should be placed within the genus *Homo*. It now seems possible that such a two-lineage model, like the one-lineage model, is untenable. A prime species of evidence against the inclusion of all gracile hominids within *Homo* is AL 288, the associated cranial and post-cranial remains recently reported from Hadar, Ethiopia (Johanson and Taieb, *Nature*, 260, 293; 1976). This particular individual has several characters not usually included within generic definitions of *Homo*. For example, the third mandibular premolar has two cusps of very unequal size. In other hominids the premolars usually have two cusps of nearly equal size, although the third premolar in the Fort Ternan mandible (KNM FT 45), usually referred to as *Ramapithecus*, has a condition somewhat similar to that seen in AL 288. Moreover, the femur

of AL 288 has the flattened neck and lack of flare in the trochanteric region usually considered characteristic of australopithecine femora. Johanson and Taieb have in fact suggested attribution of this individual to *A. africanus*.

Such sympatry of *Homo* with one, and quite possibly two, forms of australopithecine would mean that there is little information about the direct and immediate ancestors of *Homo*. These known australopithecines, contemporary with *Homo*, obviously cannot fulfil the ancestral role. Finally, however, the coexistence of possibly three Plio-Pleistocene hominid groups may indicate, indirectly, something about the very nature of still earlier hominid evolution. When organisms initially occupy a new habitat they often experience a period of rapid adaptive radiation, so that eventually they occupy a variety of "niches" within that new habitat. During their Cainozoic history the order Primates have, in fact, experienced several vigorous radiations. It is possible that the early hominids, too, went through a period of adaptive radiation when they first began occupying the forest margin, grassland habitats in the Miocene and early Pliocene. It is possible that here, in the early Pleistocene, we are seeing the fossil evidence of such a radiation.



A hundred years ago

WE regret to hear that the strife at Sidney about the dismissal of Mr. Krefft from the post of Curator and Secretary of the Australian Museum is not over. The subject came before the Legislative Assembly on the 6th of April, and provoked an angry discussion. Mr. E. P. Ramsay has been installed by the trustees as Mr. Krefft's successor, and is in full work; but the Supreme Court has decided that the trustees had no real authority to remove Mr. Krefft.

from *Nature*, 14, June 15, 1876.