Elliot Smith Commemorated

from a Correspondent

HUMAN evolution was the thread connecting the very diverse programme of the symposium to commemorate Sir Grafton Elliot Smith at the Zoological Society of London on November 9–10.

Professor Lord Zuckerman (Zoological Society of London) spoke of Elliot Smith's many scientific interests—fossil hominids; the evolution of the brain and localization of function within it; primate phylogeny; and the development and spread of civilization and culture. The period of influence of Elliot Smith over British anatomy coincided with that of Wood-Jones and Keith, and the interplay between this triumvirate dominated the anatomical scene during the first part of this century. Elliot Smith's involvement in, as it turned out, the fruitless attempts to explain the Piltdown discoveries was touched on by Professor J. Weiner (London School of Hygiene and Tropical Medicine). That the scar which Piltdown inflicted upon physical anthropologists in Britain is not yet healed was apparent as Professor Weiner vigorously defended Elliot Smith against recent allegations that it was he who perpetrated the forgery. It was explained that Elliot Smith had neither the motive nor the opportunity and that there were more plausible candidates for the role of hoaxer.

A presentation by Mr R. E. F. Leakey (National Museums of Kenya) of the programme of research taking place at East Rudolf, Kenya, should help to dispel the reluctance and scepticism (another legacy of Piltdown) with which British anatomists greet the discovery of fossil hominids. Mr Leakey explained that, since the initial exploration in 1968, more than eighty hominids have been found in the sediment which cover 1,000 square miles to the north-east of Lake Rudolf. This work is but part of a larger research programme which includes palaeontological sampling of other animal groups, detailed geological and geophysical investigation of the sediments and archaeological studies. The dating of the sediments is approached in three ways: correlations of the fauna at various levels in the sequence with that of nearby fossiliferous areas, especially the Omo River deposits; potassium-argon methods applied to the volcanically-derived tuffs that are interbedded in the sequence; and palaeomagnetic techniques.

Leakey's team have accumulated evidence of at least two forms of hominid at East Rudolf, but before this year's season both were from beds above the

tuff dated at 2.6 million years. This summer, however, the horizon below the 2.6 million year tuff has yielded a fragmented skull which, after preliminary reconstruction, gives a minimum cranial capacity of 800 cc. Two complete femurs and parts of a tibia and fibula, with morphological features which closely parallel those of modern man, were also recovered from the same horizon. Mr Leakey explained that detailed examinations of this material have not yet been made, but he and his colleagues consider that it is evidence of the genus *Homo*. Remains of *Australopithecus* have also been recovered from this early horizon and the period of co-existence of *Australopithecus* and *Homo* thus extends back to beyond 2.6 million years.

Mr Leakey explained that association of the *Homo* material with artefacts already found at 2.6 million years is a likely hypothesis and that studies of the locomotor implications of the postcranial material will probably widen the gap which is forming between the different locomotor adaptations of *Australopithecus* and *Homo*.

It was to this last subject that Professor M. H. Day (St Thomas's Hospital Medical School) turned. He presented results of a joint anatomical and statistical assessment of hominid lower limb material found before 1972. There now seems to be evidence, Professor Day said, for two bipedal adaptations in the hominids, one for *Australopithecus*, the other for *Homo*; differences between the two could be demonstrated by measurements taken on the femoral neck. Professor Day urged caution on those workers on fossil hominids whose interests were primarily metrical; many fossils are distorted, and casts can be misleading in that they are sometimes made including reconstructed areas of bone, not necessarily marked on the casts as such.

Professor E. H. Ashton (University of Birmingham Medical School) presented the results of an elegant multivariate analytical study of the primate pelvic girdle. Using data from extant groups and from the reconstructed pelvic remains of *Australopithecus*, the results confirm the bipedal gait of *Australopithecus*, but those variables related to muscle actions on the pelvis show the gait to be different to that of modern man.

The second session honoured Elliot Smith's work on the evolution of the brain and the functional organizations of the cerebral cortex and included a review by Dr T. P. S. Powell (Univer-

sity of Oxford) of the evidence for linking functional differences with cyto-architecturally distinct laminae of the sensory areas of the cortex.

A feature of the contribution by Professor C. E. Oxnard (University of Chicago), in the session devoted to primate phylogeny, was the ingenuity shown in presenting multidimensional data in a bivariate form. Dr R. D. Martin (University College, London) reminded the meeting of the pitfalls when taxonomic organization is mistaken for a phylogenetically derived relationship. In a "data packed" presentation, Dr M. Goodman (Wayne State University) showed that the phylogenetic trees that he produces, using the differences between nucleotides coding for proteins and peptides, vary little from those proposed by Elliot Smith in his "Essays on the Evolution of Man".

A discussion on Elliot Smith's stand on the world-wide diffusion of culture from Egypt ended a symposium which successfully reflected Elliot Smith's catholic scientific interests and the wide and sustained influence his ideas enjoyed.

ARCHAEOLOGY

New Finds at Border Cave

from a Correspondent

Johannesburg, November

THE history of modern man's early occupation of southern Africa has already been substantially rewritten as a result of excavations at Border Cave, a site set high on a scarp on the borders of Swaziland and northern Natal. The most recent finds there suggest that a new and important chapter is about to be added to that history. During the past two years a team led by P. B. Beaumont of the Bernard Price Institute for Palaeontological Research in Johannesburg has unearthed extensive and remarkably well preserved remains of animal and vegetable matter, the age of which ranges from the present to 40,000 BC and may well date back to 70,000 BC.

Indicative of the unique state of preservation of these specimens are delicate insect wings and bird feathers. Examples of the vegetation found are leaves, twigs, nuts and grass matting. The grasses, some of which seem to have been specially selected for the purpose, may well have served as bedding material. A particular feature was the finding of hair of various antelope. The presence of animal hair suggests that human hair might also eventually be