

Introduction

Since the finding of the skull of *Australopithecus boisei*, or 'Zinj', at Olduvai Gorge in 1959 by Dr. Mary Leakey there has been increasing involvement by geologists in the elucidation of the time-framework and environmental setting of man's fossil ancestors. The pioneering enthusiasm of Louis and Mary Leakey encouraged many anthropologists, and scientists in associated disciplines, to continue the search for better preserved fossils of early man and the animals who were his contemporaries.

Over 550 hominid fossils have been discovered during the last 18 years from the Gregory Rift Valley. The Rift may be considered as a field laboratory, varying from 40 to 80 kilometres in width but over 2000 kilometres in length. It contains unique fossil localities in the Afar region of northern Ethiopia and the Omo valley in the south, round Lake Turkana (formerly called Lake Rudolf) and several other fossiliferous sedimentary basins in Kenya, and in the Laetolil/Olduvai Gorge region of northern Tanzania.

This volume stems from a 3 day symposium held in February 1975 at the Geological Society, London. It contains 35 papers by 50 authors and presents the detailed geological context for the major hominid finds established in the Gregory Rift Valley during the last eighteen years.

Part I describes the broad structural, volcanic and geophysical setting and the history of development of the Gregory Rift.

Part II discusses palaeontological problems, including those involved in reconstructing former living communities from remnant fossil assemblages. A new statistical approach to temporal biostratigraphy is outlined together with the importance of allometry in hominid studies. A guide is provided to the problems of interpreting the debris of broken stone left by those 'earliest geologists', our palaeolithic ancestors.

Part III contains detailed regional studies for four sections of the Gregory Rift: **A.** The history of research at Olduvai Gorge is described together with the context of exciting new finds from Laetolil, Tanzania. The Ologesailie palaeolithic sites in Kenya are placed into their geological setting. **B.** Numerous authors contribute papers on the lithological succession, chronology, magnetostratigraphy, palaeontology and archaeology of Baringo District, Kenya investigated since 1965. **C.** Remarkable hominid discoveries from the Lake Turkana Basin (Kenya) and the Omo Valley (Ethiopia) made by international research teams are described with reference to their geological, palaeontological and archaeological context. Chronostratigraphic and palaeomagnetic sequences are outlined and some of the problems relating to isotopic dating and biostratigraphy are discussed. **D.** The geological setting is outlined for the latest hominid discoveries from the Afar region of the Ethiopian sector of the Rift Valley.

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