



Lothagam: The Dawn of Humanity in Eastern Africa

reviewed by Susanne Cote

Edited by Meave G. Leakey and John M. Harris
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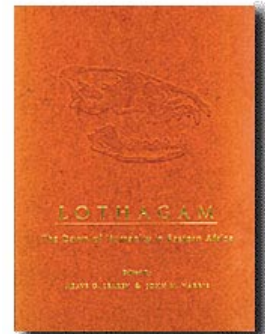
Lothagam: the Dawn of Humanity in Eastern Africa, is a new volume detailing the paleontological research undertaken by the National Museums of Kenya under the leadership of Dr. M.G. Leakey at the Late Miocene locality of Lothagam in Northern Kenya. Although the book is perhaps inaptly named, since Lothagam in fact reveals very little about the 'dawn of humanity', this is an interesting and detailed look at a site that contains far more than the few scrappy hominin bits it has generally been known for.

Lothagam is an important palaeontological site because it samples a time period that is generally poorly known in Africa. This period is of great interest because it is a time of extensive and widespread faunal change, which includes the appearance of modern African ecosystems and the evolution of the hominin lineage. The site contains deposits dated between 8 and 4 Ma and samples an incredibly diverse Late Miocene fauna including invertebrates, reptiles, fish, and mammals, with over 9,000 fossil specimens collected.

This volume is a standard site monograph with individual chapters dedicated to each of the main fossil groups found at the site. Each taxonomic chapter is written by a specialist, and so has an individual flavor based on the research interests of the author. In general though, the editors have succeeded in keeping the format of the chapters consistent, making it easy to navigate to the sections you are particularly interested in. I liked the fact that non-mammalian groups receive a thor-

ough treatment, despite the fact that the main focus of research at Lothagam has always been on mammals.

Introductory chapters on the geology of Lothagam, including a reproduction of McDougall and Feibel's extremely detailed discussion on the radioisotopic dating of the site, are followed by the taxonomic chapters that make up the bulk of the volume. These chapters focus largely on systematics, and provide detailed accounts of newly named taxa and good discussions on the taxonomic status of the material in general. There is often very little synthesis or discussion of how the Lothagam material compares with other sites or affects the evolutionary picture of a group. This can make it hard to fully absorb what you're reading because little framework is provided in which to place the Lothagam material. Often there is little mention of the ecological and biogeographical interpretations that can be made from the fossil material, and it would be nice to see more of this in some chapters. One good feature of the taxonomic chapters is that all specimens that have been attributed to each group are reported along with their accession number in the National Museums of Kenya and information on which formation and member they came



from. Tables at the back of each chapter provide comparative measurements of teeth and postcrania for most taxa.

All of the chapters are generally well written and informative. The fish chapter (Stewart) is exhaustively detailed and covers over 7,000 fish specimens, but is nicely summarized in the end with a broad overview of how the Lothagam fish faunas can be used to reconstruct paleoenvironments. The carnivore chapter (Werdlin) is excellent and very interesting as there are many new taxa described. It also includes a more detailed comparison with material from other sites than most of the chapters. I particularly enjoyed the chapter on fossil Cercopithecidae (Leakey, Teaford, and Ward) because of the extensive discussion on the diet and locomotion of early cercopithecids, which is both interesting and informative. The chapters on fossil hippopotamids (Weston) and bovids (Harris) have particularly good introductory sections that provide a nice framework for learning about the Lothagam material. There are two chapters on isotope ecology, the first devoted to modern isotope ecology in the Turkana basin (Cerling, Harris, Leakey, and Mudida), which provides a good framework for evaluating the paleontological isotope results. The second chapter reports isotopic results for fossil mammals and paleosol carbonates (Cerling, Harris, and Leakey). Isotopic analysis of the Lothagam fauna provides strong support for many of the paleoecological interpretations presented in other parts of the book.

As a site monograph, this book is designed as a reference volume, and as such is not a book for the generalist reader. The systematic descriptions are extremely detailed, particularly for newly named taxa. This is great for those with a serious interest in the Late Miocene who might want to compare their material with that from Lothagam,

but most readers will be more interested in the discussion and synthesis sections. However, as a reference, this is a very useful book. My only complaint would be that the index is not very extensive, making it a bit difficult to extract information in a time-efficient manner.

The quality of the illustrations is highly variable which I suspect is the result of problems with reproduction of the illustrations rather than with the illustrations themselves. Many photographs are grainy or pixelated and some of the line drawings are not clearly reproduced. In some chapters, the photographs are so poorly reproduced that you cannot clearly make out anatomical features. The fuzzy reproduction of line drawings is less common, but does occur in a few chapters. Conversely, some of the drawings--particularly those in the carnivore chapter--are beautifully done and skillfully reproduced. Poor quality of some illustrations is partly made up for by the lovely and informative reconstructions of fossil taxa by Maurice Anton found throughout the book. These are beautiful drawings based on the fossil material and are a wonderful addition to the volume. The appendix at the end of the book provides some notes by Anton explaining the rationale and logic behind each drawing and is an interesting read.

In conclusion, I found Lothagam to be a well-organized and informative book. Its value as a comparative reference for those interested in Late Miocene mammalian paleontology makes it worth the rather hefty price tag. However, I would say that most readers who only want a broad perspective on the site would be best to read the summary chapter at the end (Leakey and Harris) which nicely pulls together all of the data in the book and provides a discussion on the paleoecology and biogeographic affinities of the site.