

FOSSIL CERCOPITHECIDAE OF THE AFAR DEPRESSION, ETHIOPIA:  
SPECIES SYSTEMATICS AND COMPARISON TO THE TURKANA BASIN

by

Stephen R. Frost

Advisor: Professor Eric Delson

The fossil Cercopithecidae from the Afar Depression of Ethiopia add considerably to what is known of the family in the African Pliocene and Pleistocene. The sediments that have produced the fossil cercopithecids included in this thesis range in age from 4.4 to 0.25 million years ago (Ma). As most of this material has not been published, it is systematically described. Fossils in this sample represent a minimum of 13 species in 10 genera. At least three of the species and two of the genera are new. The Afar sample also adds to what is known of the other species, including the only relatively complete cranial material of middle Pleistocene *Theropithecus*. There is considerable turnover of species in the sample, with between 1 and 6 being present at any single time interval.

In order to put the Afar sample into a larger context it is compared with the fossil cercopithecid sample from the Turkana Basin, the only other region that spans a similar time interval, has a large cercopithecid sample, and is well controlled chronologically. Fourteen species (from nine genera) are present in the Turkana assemblage, of which probably only three species are shared between the two basins. At higher taxonomic levels the two regions are more similar.

When the timing of species turnover is compared between the two basins, both show a large number of species first and last appearances prior to 3.4 Ma. The Afar

Depression has a second turnover event between 2.9 and 2.5 Ma, but in the Turkana Basin turnover occurs much later, after 2 Ma, with little change between 3.4 and 2.0 Ma. This lack of synchrony between the two basins suggests that Middle Pliocene turnover was not directly forced by a global climatic event.