

## **Abstract**

New fossil femora attributed to *Australopithecus* from East Rudolf, Kenya, form the basis for a three-dimensional reconstruction of a complete femur. The reconstruction and the known fossils are compared with the femora of *Homo sapiens*. Although many of the features of the fossil bones fall within the overall ranges to be found in modern man, there seems, nevertheless, to be a distinctive total pattern in the femoral anatomy of *Australopithecus*. Biomechanical explanations for this pattern may be possible when other postcranial bones can be reconstructed with the same degree of certainty as the femur.