

# Evolutionary Paleobiology Of Behavior And Coevolution



YEARBOOK OF PHYSICAL ANTHROPOLOGY 50:106-132 (2007)

## *Paranthropus boisei*: Fifty Years of Evidence and Analysis

Bernard Wood\* and Paul Constantino

Center for the Advanced Study of Hominid Paleobiology, George Washington University, Washington, DC 20052

KEY WORDS *Paranthropus boisei*; *aethiopicus*; human evolution; Africa

**ABSTRACT** *Paranthropus boisei* is a hominin taxon with a distinctive cranial and dental morphology. Its hypodigm has been recovered from sites with good stratigraphic and chronological control, and for some morphological regions, such as the mandible and the mandibular dentition, the samples are not only relatively well dated, but they are, by paleontological standards, reasonably-sized. This means that research-

*Australopithecus boisei*, which for reasons explained later in this article we refer to as *Paranthropus boisei*, is a hominin best known for its large jaws and large post-canine teeth. It is unusual among hominins for several reasons. First, because *P. boisei* is an easily recognized (Tobias, 1967; Rak, 1978) and an apparently derived (Wood, 1991; Kimbel et al., 2004; Strait and Grine, 2004) taxon its hypodigm is well circumscribed and relatively uncontroversial. Second, most of the fossil record of *P. boisei* comes from sites with good stratigraphic and chronological control (Feibel et al., 1989; McDougall and Brown, 2006). Third, the hypodigm is heavily biased towards jaws and teeth so that for some morphological regions such as the mandible and the mandibular dentition, samples are not only relatively well-dated, but by paleontological standards they are reasonably-sized. This means that researchers can trace the evolution of metric and nonmetric variables across hundreds of thousands of years. Finally, because 50 years have elapsed since its discovery, it is possible to use *P. boisei* as an example of how our understanding of a hominin taxon has itself evolved over time. We review half a century's worth of fossil evidence and analysis of *P. boisei* to trace how both its evolutionary history and our understanding of its evolutionary history have evolved over that time.

ers can trace the evolution of metric and nonmetric variables across hundreds of thousands of years. This paper is a detailed<sup>1</sup> review of half a century's worth of fossil evidence and analysis of *P. boisei* and traces how both its evolutionary history and our understanding of its evolutionary history have evolved during the past 50 years. *Yrbk Phys Anthropol* 50:106-132, 2007. © 2007 Wiley-Liss, Inc.

son suggested that the genus *Zinjanthropus* be abandoned and he proposed that the new specimen should be included within the existing genus *Paranthropus*. In doing so, he pointedly referred to the existence of "nearly 200 specimens of *Paranthropus*" (Robinson, 1960b, p. 458), presumably to emphasize that Leakey was unfamiliar with the range of variation included in this hypodigm. Robinson acknowledged there were size differences between OH 5 and the *Paranthropus* remains from southern Africa, but he interpreted these as being of relatively minor significance. Subsequently, a detailed and meticulous analysis of the OH 5 cranium (Tobias, 1967) also found no grounds for a generic distinction between *Zinjanthropus* and *Australopithecus* (i.e., *Paranthropus*).

Most researchers now include the East African megadont archaic hominins in *Australopithecus* as *A. boisei* (e.g., Tobias, 1967; Kimbel, 1984; Swin et al., 1994). The researchers who favor the hypothesis that the East and southern African megadont taxa form a monophyletic group (e.g., Grine, 1988; Wood, 1991) retain *Paranthropus* as the genus name for that clade and use *P. boisei* as the species name for the group to which OH 5 belongs. For the reasons given in the sections on Taxonomy and Phylogenetic Analysis, we suggest that until uncertainties about the taxonomy of the East African

### NOMENCLATURE

In the "preliminary diagnosis" of what was then referred to as *Zinjanthropus boisei*, Leakey (1959) drew attention to 20 "major differences" (p. 493) between *Z. boisei* and "the genera *Australopithecus* and *Paranthropus*" (p. 492). Because at the time OH 5 was both the holotype and the only evidence of that taxon, these were effectively differences between a single specimen, OH 5, and two relatively well sampled established genera (see Smith (2005) for a sober warning about this and other studies that claim taxonomic distinction on the basis of a single specimen). The following year Robinson (1960b) went through Leakey's claimed "major differences" and to the former's satisfaction refuted the vast majority. Robin-

<sup>1</sup>An abbreviated version of this paper has appeared in *Evolutionary Anthropology* (Constantino P. Wood B. 2007. The evolution of *Zinjanthropus boisei*. *Evol Anthropol* 16(2):49-62).

Grant sponsors: Henry Luce Foundation, the National Science Foundation, NSF IGERT grant, GW's Strategic Plan for Academic Excellence.

\*Correspondence to: Bernard Wood, Center for the Advanced Study of Hominid Paleobiology, Department of Anthropology, George Washington University, 2110 G St. NW, Washington, DC 20052, USA. E-mail: bernardwood@gmail.com

DOI 10.1002/ajpa.20732  
Published online in Wiley InterScience  
(www.interscience.wiley.com).

© 2007 WILEY-LISS, INC.

This book is the culmination of many years of research by a scientist renowned for his work in this field. It contains a compilation of the data dealing with the Purchase Evolutionary Paleobiology of Behavior and Coevolution - 1st Edition. Print Book & E-Book. ISBN , , English, Book, Illustrated edition: Evolutionary paleobiology of behavior and coevolution / A.J. Boucot ; with sections by Loren E. Babcock [et al.]. Boucot. Evolutionary paleobiology of behavior and coevolution. by A.J. Boucot, Elsevier, \$/Dfl hbk (xxiii + pages) ISBN 0 8. Michael A. Evolutionary Paleobiology of Behavior and Coevolution. xxiii + pp. Amsterdam, Oxford, New York, Tokyo: Elsevier. Price US \$, Dfl. If you are searched for a ebook Evolutionary Paleobiology of Behavior and Coevolution by A.J. Boucot in pdf format, then you have come on to the faithful site. Evolutionary paleobiology of behavior and coevolution / A.J. Boucot, A. J. ( Arthur James), View full catalog record. Rights: Protected by copyright law. In this complete and thorough update of Arthur Boucot's seminal work, Evolutionary Paleobiology of Behavior and Coevolution, Boucot is joined by George. Evolutionary paleobiology of behavior and coevolution []. Boucot, A. J. ( Arthur James) Access the full text: NOT AVAILABLE. Lookup the document . Evolutionary Paleobiology of Behavior and Coevolution A.J. Boucot Elsevier Evolutionary Paleobiology of Behavior and Coevolution Evolutionary Paleobiology. Evolutionary paleobiology of behaviour and coevolution by A J Boucot Evolutionary paleobiology of behaviour and coevolution. by A J Boucot; et al. Print book. APA (6th ed.) Boucot, A. J. (). Evolutionary paleobiology of behavior and coevolution. Amsterdam: Elsevier. Chicago (Author-Date, 15th ed.) Boucot, A. J. Evolutionary paleobiology of behavior and coevolution. Book. Coevolutionary and behavioral limits of the fossil record. 3. Definition of coevolution. 4. Definition of behavior. 4. Taxonomic ranking of behaviors and. Get instant access to our step-by-step Evolutionary Paleobiology Of Behavior And Coevolution solutions manual. Our solution manuals are written by Chegg. Paleontologi- Society Special Publication no. 5. Knoxville, Tenn.: The Paleontological Society.. b. Evolutionary paleobiology of behavior and coevolution. Speyer, S. E., , Gregarious behavior and reproduction in trilobites, in: Evolutionary Paleobiology of Behavior and Coevolution (by A. J. Boucot), Elsevier. Growth of a Prehistoric Time Scale Based on Organic Evolution (2nd ed.). Blackwell Evolutionary Paleobiology of Behavior and Coevolution. Elsevier. Creative Evolution. Translated by Arthur Mitchell. New York: Boucat, A. J. Evolutionary Paleobiology of Behavior and Coevolution. Amsterdam: Elsevier,

[\[PDF\] Handbook Of Microcomputers In Special Education](#)

[\[PDF\] Computer Dictionary For Everyone](#)

[\[PDF\] Doras Nursery Rhyme Adventure](#)

[\[PDF\] Communications Satellite Handbook](#)

[\[PDF\] Betti Numbers Of The Moduli Space Of Rank 3 Parabolic Higgs Bundles](#)

[\[PDF\] An Englishman In Paris: Laeducation Continentale](#)

[\[PDF\] White Elephant Dead](#)