The Fossil Chronicles: How Two Controversial Discoveries Changed Our View of Human Evolution

by Dean Falk

reviewed by Andrew Kramer

This book, written by one of the field’s leading authorities on hominid paleoneurology (the study of human brain evolution), offers a provocative inside look at the past and present “paleopolitics” surrounding two of the most significant fossil human discoveries made over the past century. The author’s intent is to flesh out the personal dimensions of these controversies over human origins, to help the reader understand the nature of scientific disputes, and to convey the excitement of discovery in both the field and the lab. She succeeds admirably on all three fronts. The “stars” of her book are the “Taung baby,” the first australopithecine (“ape-man”) fossil discovered in South Africa in 1924, and the “Hobbit,” representing a remarkably unexpected miniature human species discovered on the Indonesian island of Flores 80 years later. Falk’s expertise in paleoneurology provided her entrée into conducting original research on both specimens’ brain-casts, and these first-hand accounts provide credibility to her story-telling and interpretations that readers should find engaging and compelling.

The structure of the book is broadly chronological, with the first four chapters devoted to the history and interpretations of the Taung specimen, followed by five final chapters focused on the Hobbit. There are several themes that bind the narrative into a coherent story, despite the eight-decade gap between discoveries of the two principal fossils. First, Falk draws convincing parallels between the scientific establishment’s resistance to the initial interpretations of the discoverers of the Taung baby and the Hobbit. Ultimately, however, Falk argues that the original ideas put forth by the scientists who announced these fossils to the world were vindicated by further research and discoveries. A second commonality of the two histories was the very strong reactions engendered by these fossils among antievolutionists, demonstrating that religious fundamentalist opposition to human evolution may have become more sophisticated in recent years, but has not lessened in its intensity over the past century. Finally, Falk’s own research on the brain casts of these fossils revealed surprising and heretofore unpublicized similarities between the two, giving the reader a personalized insider’s account of the controversies surrounding these fascinating hominid specimens.

Raymond Dart announced the Taung baby in the pages of Nature in 1925 and claimed that it was a human ancestor, but his interpretation was roundly rejected by the “powers that be” of the time. His recently deceased student Phillip Tobias (revered as the dean of South African paleoanthropology) provided four reasons why Dart’s conclusions were not accepted: (1) Asia was thought to be the cradle of human origins (it isn’t), (2) large brain size was
thought to have evolved first (the Taung baby’s brain was ape-sized), (3) the fossil’s human-like features were attributed to its immaturity (apes get more ape-like as they grow older), and 4) the Taung fossil was thought to be geologically too young (it’s not). A fifth reason that both Falk and I consider at least as important as the other four was that the British scientific establishment already had a big-brained, more ancient (so they thought) English “fossil” (the Piltdown hoax) that they much preferred as an ancestor over Dart’s more ape-like Taung baby from the hinterlands. A vocal minority of current paleoanthropologists echo the early-twentieth-century British naysayers by claiming that the Hobbits of Flores also contribute nothing to our understanding of hominid evolution. Ironically, even though the Hobbit’s brain is similar in size to the Taung baby’s, these scientists do not portray the Hobbit as an aberrant little ape, but rather as a pathological modern human afflicted with a number of possible congenital disorders (including microcephaly, Laron Syndrome, and cretinism). Falk recounts how subsequent discoveries of australopithecines in South and east Africa and the unveiling of Piltdown as a hoax ultimately proved Dart right. Similarly, the claims of pathology for the Hobbit have been rejected one by one by scientists working on the fossils (including Falk), and today most paleoanthropologists agree that the Flores hominids are a truly unprecedented new species (Homo floresiensis) that survived into modern times (as recently as 18,000 years ago) on that isolated southeast Asian island.

Falk ties the announcement of the Taung baby in February 1925 to one of the landmark events in the battle between evolution and creationism: the Scopes “Monkey Trial”. She points to a New York news story that linked the discovery of the Taung baby to the hastened signing into law of Tennessee’s anti-evolution bill in March of that year, followed by the infamous summer trial in Dayton. The worldwide multimedia blitz that broadcast the discovery of the Hobbit in 2004 once again galvanized the anti-evolution movement in the United States. Interestingly, these reactions either echoed those against the Taung specimen (claiming that the Hobbit was a member of a fossil ape species that has nothing to do with us) or agreed with the scientists promoting the pathology explanation (claiming that the Hobbit was a diseased modern human and so irrelevant to any claims that human evolution has occurred).

Falk’s narrative is most effective and affecting in the descriptions of her individual and joint research on the brains of the two stars of her book. Discussing her work on the fossils and archival material, Falk reveals startling parallels between the brain-casts of the Taung and Hobbit specimens, the fascinating details of which I will leave for readers to discover on their own. Falk effectively conveys the excitement of being invited to describe and interpret the Hobbit’s brain-cast, and her subsequent accounts of how she and her colleagues accomplished their research richly and accurately provide the reader with an appreciation of scientific discovery. The human foibles of scientists are also starkly portrayed in her descriptions of the recovery of the Hobbit fossils and subsequent contestations over their access and stewardship.

In sum, Dean Falk has written a book on human evolution intended for an educated lay audience that hits the mark. Although it isn’t without faults (too much detail on brain anatomy may prompt the average reader to skim or skip ahead), I was pleasantly surprised as a professional paleoanthropologist to learn a number of things I didn’t know before reading this book. It is up-to-date, factually accurate (as best as I can determine), and adequately illustrated. I recommend it for readers of Reports of the NCSE and for my colleagues as well.
ABOUT THE AUTHOR
Andrew Kramer is Professor and Head of the Department of Anthropology at the University of Tennessee. He is a paleoanthropologist who has directed human evolution field work in West Java, Indonesia.

AUTHOR’S ADDRESS
Andrew Kramer
Department of Anthropology
250 South Stadium Hall
University of Tennessee
Knoxville TN 37996-0720