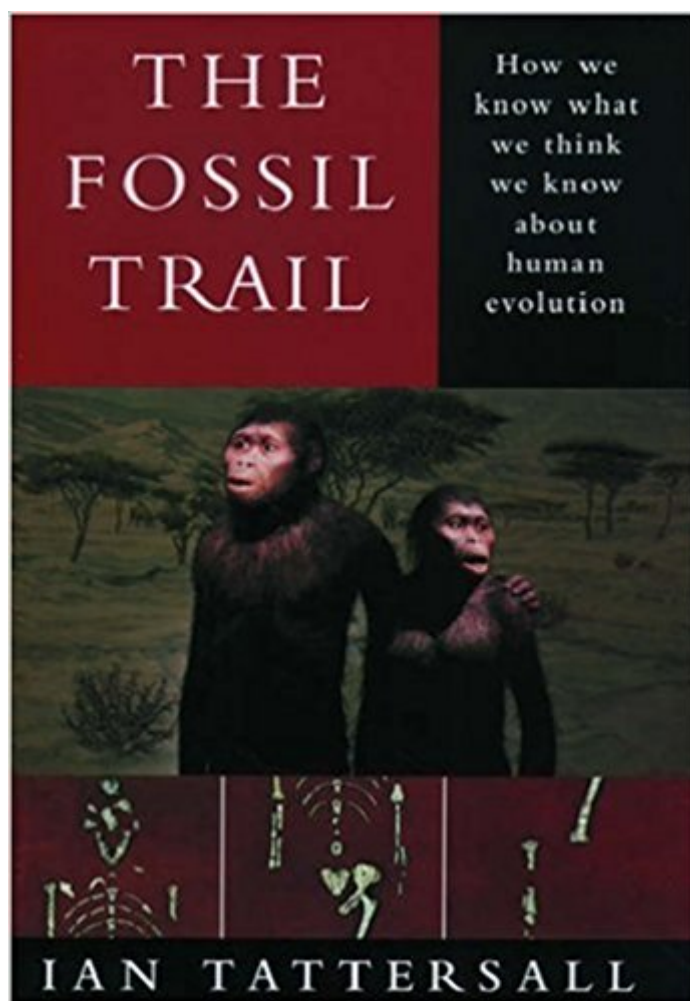


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# The Fossil Trail: How We Know What We Think We Know About Human Evolution



## Synopsis

One of the most remarkable fossil finds in history occurred in Laetoli, Tanzania, in 1974, when anthropologist Andrew Hill (diving to the ground to avoid a lump of elephant dung thrown by a colleague) came face to face with a set of ancient footprints captured in stone--the earliest recorded steps of our far-off human ancestors, some three million years old. Today we can see a recreation of the making of the Laetoli footprints at the American Museum of Natural History, in a stunning diorama which depicts two of our human forebears walking side by side through a snowy landscape of volcanic ash. But how do we know what these three-million-year-old relatives looked like? How have we reconstructed the eons-long journey from our first ancient steps to where we stand today? In short, how do we know what we think we know about human evolution? In *The Fossil Trail*, Ian Tattersall, the head of the Anthropology Department at the American Museum of Natural History, takes us on a sweeping tour of the study of human evolution, offering a colorful history of fossil discoveries and a revealing insider's look at how these finds have been interpreted--and misinterpreted--through time. All the major figures and discoveries are here. We meet Lamarck and Cuvier and Darwin (we learn that Darwin's theory of evolution, though a bombshell, was very congenial to a Victorian ethos of progress), right up to modern theorists such as Niles Eldredge and Stephen Jay Gould. Tattersall describes Dubois's work in Java, the many discoveries in South Africa by pioneers such as Raymond Dart and Robert Broom, Louis and Mary Leakey's work at Olduvai Gorge, Don Johanson's famous discovery of "Lucy" (a 3.4 million-year-old female hominid, some 40% complete), and the more recent discovery of the "Turkana Boy," even more complete than "Lucy," and remarkably similar to modern human skeletons. He discusses the many techniques available to analyze finds, from fluorine analysis (developed in the 1950s, it exposed Piltdown as a hoax) and radiocarbon dating to such modern techniques as electron spin resonance and the analysis of human mitochondrial DNA. He gives us a succinct picture of what we presently think our "family tree" looks like, with at least three genera and perhaps a dozen species through time (though he warns that this greatly underestimates the actual diversity of hominids over the past two million or so years). And he paints a vivid, insider's portrait of paleoanthropology, the dogged work in the broiling sun, searching for a tooth, or a fractured corner of bone, amid stone litter and shadows, with no guarantee of ever finding anything. And perhaps most important, Tattersall looks at all these great researchers and discoveries within the context of their social and scientific milieu, to reveal the insidious ways that the received wisdom can shape how we interpret fossil findings, that what we expect to find colors our understanding of what we do find. Refreshingly opinionated and vividly narrated, *The Fossil Trail* is the only book available to general readers that offers a full

history of our study of human evolution. A fascinating story with intriguing turns along the way, this well-illustrated volume is essential reading for anyone curious about our human origins.

## Book Information

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## Customer Reviews

Head of Manhattan's American Museum of Natural History's anthropology department, Tattersall here weaves a vigorous historical narrative of paleontologists' attempts to reconstruct human origins from the fossil record. Beginning with the unearthing of Neanderthals and "Java Man," he carefully sifts through a remarkable succession of hominid finds from Africa, Eurasia, China, Indonesia and Israel, including Don Johanson's 1973 discovery in Ethiopia of "Lucy," a 3.4-million-year-old female hominid skeleton, and the Leakey team's 1984 find, "Turkana Boy," a 1.6-million-year-old Homo erectus skeleton uncovered in Kenya. Citing disagreements among scientists over interpretations of radiocarbon dating, comparative anatomy and biochemical techniques, Tattersall unreels a catalogue of paleoanthropological misidentifications, dogmas and misperceptions. He draws a hypothetical evolutionary tree that includes three genera of our hominid ancestors-Homo and Australopithecus (accepted by conventional wisdom) plus a new genus, Paranthropus-altogether embracing a dozen species leading to Homo sapiens. Illustrated. Copyright 1995 Reed Business Information, Inc.

This informative and highly readable introduction to paleoanthropology by the head of the anthropology department at the American Museum of Natural History surveys the major discoveries in hominid evolution (fossils and artifacts) and examines both past and present principal

interpretations of this growing empirical evidence for the complex emergence of humankind. Important fossils from Olduvai and other sites are critically discussed in terms of modern hominid taxonomy within the framework of climatic fluctuations, environmental changes, and morphological variety (species diversity). Throughout this detailed story, Tattersall argues against both human orthogenesis and the one-species hypothesis for explaining hominid evolution. He focuses on australopithecine diversity and behavior, those questions still surrounding *Homo erectus* and *Homo neanderthalensis*, and the recent appearance of our own unique species in Africa. A fascinating and provocative overview of human paleontology that is highly recommended for all anthropology collections. H. James Birx, Canisius Coll., Buffalo, N.Y. Copyright 1995 Reed Business Information, Inc.

After you have read several books on fossil discoveries and you think this is going to be another routine book you will be in for a surprise. The narrative is slightly advanced and it would help if you know a little about the subject, but it is a stimulating nevertheless. The illustrations are excellent but there is not enough of them. The bibliography is a mixture of both older references and newer ones. Tattersall at times gives his personal insights which adds flavor to the narrative. For those of us who find genetics confusing and boring there is a good explanation of cladistics. To improve for flow it would help if there was an illustration of the Members at Swartskrans and other sites. But all-in-all it is a book that should be on the shelf of every paleoanthropologist.

Maybe it's just because I've read a lot of human origin books, but this book started out slow and rather redundant, but the last half of the book was extremely informative. Ian reaffirms the strife that exists between anthropologists, but in a much more polite manner than other authors. What led me to purchase this book was an earlier purchase of Ian Tattersall's book 'Masters of the Planet: The Search for our Human Origins,' which remains one of my all-time favorite science books.

This is a very readable history of human paleontology. There's not much new information here, although it wasn't intended to present any. Tattersall gives an in-depth and unbiased account of the fossil record and the record of the fossils' discovery, laying out the timelines and the personalities involved. He recounts some amusing anecdotes and stories told by the fossil hunters and explains the sometimes bitter disputes over the interpretation of the finds. Altogether well researched (as one would expect given Tattersall's position) and well written book.

Ian Tattersall's *The Fossil Trail* traces the evolution of scientific understanding of human origins in exquisite detail and in a language that is understandable to the lay reader. The book is rich with scale diagrams of the fossil record of early hominids, presenting the various theories of human evolution from the mid-nineteenth century to the present. Because of the subject matter and the aim of the book, it is dense reading, and it clearly is not for everyone. Nonetheless it is a fascinating and rewarding book.

I love this book I just wish the Kindle version was the newer version. I haven't seen a new copy of the book to compare with but the inside cover says its the 1996(?) version. I love reading Tattersall. If you get 'anthropology humor' this book will make you laugh. I wish he wasn't retired because I would love to study with him!!

A must read for those who wonder about our origins

I'm not sure why some people panned this book as boring. I enjoyed reading it and found it held my interest from beginning to end. Tattersall gives a really good overview of the complex and contentious field of human evolution. There are so many new fossils discovered since 1990, and still being discovered and described, that will make for more books like this. I read the 2009 edition.

Nice

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