Paleoanthropology Without Inhibitions

Lucy. The Beginnings of Humankind. DONALD C. JOHANSON and MAITLAND A. EDEY. Simon and Schuster, New York, 1981. 410 pp., illus., + plates. $16.95.

Increasingly, we encounter serious and pop anthropological books that probably need not have been published and fewer books that are truly useful and interesting. A normal reaction to the latter rarities is to wish that one had written them oneself. With *Lucy*, Johanson and Edey have created a new genre: a captivating, informative book of which authorship may not be coveted because it contains bold commentaries that will unnecessarily offend a number of colleagues. It is a spicy potpourri of exceptionally lucid expository scientific writing, tattling exposé, novelized conversations and events, nostalgia, and wishful thinking. The idiom is decidedly middle American. The book is oddly reminiscent of *20/20* and *60 Minutes*.

Johanson and Edey have pursued several objectives concurrently, presenting a general account of the nature and possible evolutionary meanings of the Pliocene hominid fossils from Hadar, Ethiopia, a history of paleoanthropology with special emphasis on the past quarter-century, and a fragmentary autobiography of the senior author. When I visited Cleveland in 1979 to study the Hadar fossils, Johanson mentioned that he intended also to convey what it is like to do paleoanthropology currently.

Chapters 1 through 6, constituting about two-fifths of the text, are a historical backdrop against which the Hadar discoveries and their aftermath are to be viewed. Much of it has been told before, though chapter 5 on Omo and F. Clark Howell is fresh. Considering that the authors mostly iterate readily accessible biographical anecdotes, one expects a high degree of accuracy here. This is not always to be found. For instance, Johanson and Edey state (p. 80) that Louis Leakey "felt so strongly that Teilhard de Chardin was guilty" of perpetrating the Piltdown hoax that "in 1971 he refused to attend a symposium honoring" him. Yet we know from Cole's biography of Leakey (*Leakey 's Luck* [1975], p. 374) that he forthrightly expressed his opinion to the organizers of the conference, was thanked for his candor, and attended the meeting despite his poor health. Hurtful hearsay, more suitable for an *International Inquirer*, is also conspicuous in the historical sections of the book, as when Leakey, the son of English missionaries, is purported to have uttered American profanity upon first seeing "Zinj" (pp. 90–92).

The heart of the volume lies in its second two-fifths. Here we share the thrill of discovery, the tensions from working in the midst of political turmoil, the tedium of the laboratory, the uncertainties about reactions of colleagues to one's ideas, and the changes of mind that are part and parcel of paleoanthropology. Johanson is refreshingly candid about what he now perceives to have been errors in his initial classification of the Hadar fossils and his co-workers' dating of them geochronologically (p. 207).

The accounts of potassium-argon dating (chapter 9) and of the craniodental features that indicate the extent to which the Hadar hominids resemble African apes, other Plio-Pleistocene hominids, and humans (chapter 13) are excellent. But again we find friends romanticized (Loring Brace is handsome [p. 296], Bill Kimbel is a giant, and Bruce Latimer is a tawny blond All-American [p. 220]) while rivals are vilified. Mary Leakey incurred the authors' invective because she refused to endorse *Australopithecus afarensis* from her field camp. One wonders what reputable scientist would co-author a taxonomic paper without first studying the entire hypodigm and, if not expert about the materials, being led point by point over the diagnostic features with proper comparative materials at hand. If Richard Leakey sends Johanson the bottle of wine he *now* owes him, Johanson had better test it before he tastes it.

I can recall at least five professors at the University of Chicago who contributed to Johanson's formal training in paleoanthropology, dental anthropology, osteology, and primatology. He mentions only two of them. One is effusively extolled and the second is immortalized as a *bête noire extraordinaire*. Perhaps the others are lucky to have escaped recollection.

The latter chapters of *Lucy* are salted with factual errors. For example, not all chimpanzees are dark-skinned (p. 275); gibbons and siamangs do not have shrunken, short, and weak lower limbs (p. 317); and all estrous baboon "girls" do not "appeal to all the boys" (p. 334).

From a strictly scientific point of view, the weakest part of the book is found in chapter 16, where the authors repeat Lovejoy's (*Science* **211**, 341 [1981]) theory about the evolution of bipedalism. There is a growing consensus among experts on the evolution of anthropoid locomotion that arboreal vertical climbing had a good deal to do with the emergence of hominid bipedalism. This is ignored totally in favor of a somewhat tortuous argument relating to special *K*-selection, pair-bonding, monogamy, and carrying food and youngsters to keep the group upright. Lovejoy is bound to have his own hands full as feminists pursue him for some implications of the theory. The sort of monogamy that I think he is describing is more for the birds. The few primates that are monogamous are skeletally quite monomorphic, whereas the Hadar hominids appear to have been very dimorphic.

In *Lucy*, the long, curved toes of the Hadar hominids are explained as adaptations to "strong" walking on rough stony ground and mud, where gripping would be useful (pp. 345–346). It is perhaps more probable that the creatures were still partly arboreal. Whether feet like those from Hadar could have made virtually human footprints like those at Laetoli is also moot.

Lucy ends with Johanson in the sky with diamonds. Further fieldwork in Hadar was planned. Unfortunately, the resurgence of political problems has curtailed his work in Ethiopia. It is to be hoped that the situation will change soon, that Johanson and his talented coworkers will surpass their previous extraordinary accomplishments, and that we will be treated to a second, more gracious book about them.

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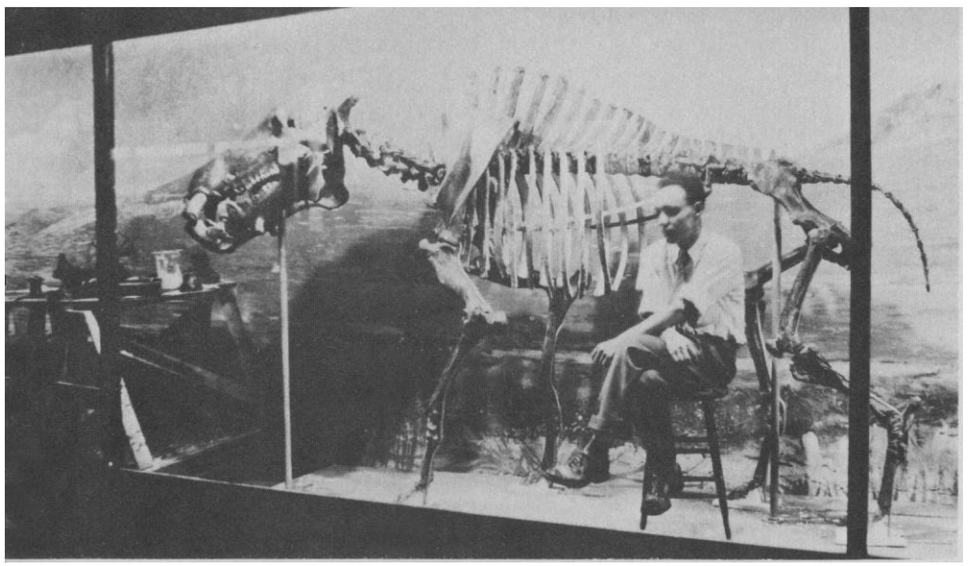
A Life in Paleontology

A Fossil-Hunter's Notebook. My Life with Dinosaurs and Other Friends. EDWIN H. COLBERT. Dutton, New York, 1980. xiv, 242 pp., illus. $15.95.

A fascination with dinosaurs has lured many young persons into paleontology, but with Edwin H. Colbert, who became an expert on dinosaurs, it was fossil mammals and the love of outdoor life. The shiny white bones of skeletons



Dinohyus and Edwin Colbert at the University of Nebraska Museum. *Dinohyus*, "a giant enteledont . . . about the size of a bison and related in a very distant way to modern pigs . . . had a perfectly enormous skull, armed with huge canine teeth. Behind the skull was a strong skeleton, with long legs and feet—obviously an animal adapted for running across the land at a pretty good clip. . . . Our mount of *Dinohyus* was our best piece of work to date." [From *A Fossil-Hunter's Notebook*]

mounted in the museum at the University of Nebraska led him to work and study there and launched his lifelong quest for knowledge of the past life of the earth. His first love, forestry, fell by the wayside. In this autobiography, however, fossils become the central topic only after two rather long chapters on his life as a child and growing boy, which are only loosely related to the main theme of the book.

Colbert learned the fundamentals of paleontology at Nebraska under Henry Barbour, working in the laboratory and field and pursuing a formal education. From there he went to Columbia University and to the American Museum of Natural History, where he was to work until his retirement in 1970. Since then he has continued his researches at the Museum of Northern Arizona, in Flagstaff. After receiving his Ph.D. from Columbia in 1935, Colbert continued to concentrate his efforts on fossil mammals until 1943, at which time he shifted his emphasis to fossil amphibians and reptiles, filling a position opened up by the retirement of Barnum Brown. He began, almost at once, to concentrate upon the lower tetrapods of the Triassic period, and this decision colored most of his subsequent work. From his American Museum base his searches carried him to dinosaur quarries in the Ghost Ranch of New Mexico and much farther afield to Brazil, Africa, India, and Australia. The final venture was a bitter-cold exploration of fossil beds in Antarctica, graphically portrayed in the last chapter. The colorful descriptions of these operations are augmented by photographs. Though the emphasis in the later chapters is upon fossil hunting, the significance of the finds is discussed briefly.

Collecting, of course, is just one facet of paleontology, and Colbert devotes a full chapter to the problems of mounting and exhibiting materials and the attendant duties that occupy the time of a museum curator. Woven through all the chapters of his narrative are stories and anecdotes about the many paleontologists who were part of his work at one time or another. The very human sides of such giants as Henry Fairfield Osborn, William K. Gregory, Walter Granger, and Alfred S. Romer are there, as are stories of other paleontologists around the world. These informal glimpses of the greats and near greats, a breed of naturalist-paleontologist that is slowly passing from the scene, form a delightful part of the book. Colbert himself is one of the last of the breed.

From first to last the personal and professional aspects of the author's life are interlaced, along with the intimate details and minute changes in each that gave direction to the whole. Together they give the book a charm that neither one nor the other separately could carry. The book is well worth reading for an insight into paleontology, but perhaps mostly to better know and understand what makes and drives such paleontologists as Colbert.

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Fossil Birds

Papers in Avian Paleontology Honoring Hildegarde Howard. KENNETH E. CAMPBELL, JR., Ed. Natural History Museum of Los Angeles County, Los Angeles, 1980. xxxviii, 260 pp., illus. Paper, $20. Contributions in Science, No. 330.

The study of fossil birds is alive and well, and growing. No doubt its current healthy state owes much to those few whose interests and activities persisted through the field's recent dark ages. This festschrift pays tribute to one of the torchbearers, Hildegarde Howard, and it does the job well. Following appreciations of Howard, a résumé of her contributions, a bibliography of her publications, a list of the fossil birds she has described, and a reprinting of her still valuable illustrations of avian osteology are 19 papers on a wide variety of fossil bird topics.

The first paper is by G. G. Simpson, who gives his overview of paleornithology. He envisions three successive radiations of birds: (i) ancient paleognaths, including the living ratites; (ii) neognathous nonpasserines, including a highly specialized offshoot, the penguins; and (iii) neognathous passerines, which include the majority of living birds, the songbirds and their relatives. In the next paper Cracraft admonishes paleornithologists for not using cladistic analyses. I think I've heard this theme before (see the three references to Cracraft in his list of literature cited). Regardless, I question the perspicacity of including this paper in this volume.

Many of the remaining papers describe new taxa of extinct birds. But all go beyond description, and this is where the fresh new strength of avian paleontology lies. Paleoecology is the topic of several papers. Kurochkin discusses environmental conditions in western Mongolia in the Middle Pliocene, whence come three new fossil rails. Feduccia discusses the habitat of Kansas during the Sangamon Pleistocene after describing a new thick-knee from there. Campbell characterizes the habitat of north central Florida on the basis of the Itchtucknee fossil avifauna, which now totals 67 species.

Particularly exciting are the studies of the presumed habits of some extinct birds. Olson describes a new member of the pelecaniform family Plotopteridae. This family was described previously by Hildegarde Howard on the basis of a partial coracoid. Plotopterids are Northern Hemisphere counterparts of penguins in that they were flightless wing swimmers. (See Olson and Hasegawa