be quite wrong. The effect of this can only be to slow down the spread of true understanding of the earliest phases of evolution of man's relatives and ancestors in Africa. For example, the *A. boisei* and *"Homo habilis"* branches of Tobias's postulated tree are represented in Bed I at Olduvai by significant samples of only one each, the types. Referred materials of these two "species" from Bed I yield almost no additional information about dental-cranial anatomy of either species, for they are mainly postcranial finds. We still do not know whether one or several lines of early hominids differentiated in the Pliocene of Africa. Nor do we know whether the type mandible of so-called *"Homo habilis"* is really advanced or not.

The relatively large canines and narrow premolars of this type jaw associate the find with *Ramapithecus* and *Dryopithecus*. These and other features need not be taken as exclusive resemblances to members of *Homo*. One learns from the editor's note to this volume that in a projected fifth volume of this series Tobias has now been committed to defending the very weak case that *"Homo habilis"* is a valid species belonging in genus *Homo*. Students of human evolution look forward to learning how this knotty problem will be unraveled there.

In conclusion, it seems that, as is often the case following great discoveries such as the cranium of Olduvai hominid 5 and important and exhaustive studies such as Tobias's monograph, we are left with more new questions to ask than those the find has answered.

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Inferring Man's Prehistory

Human Evolution. An Introduction to Man's Adaptations. BERNARD G. CAMPBELL. Aldine, Chicago, 1967. xvi + 425 pp., illus. $8.95.

The publisher characterizes the approach used in this book as revolutionary. As compared with other recent books on human origins this one does indeed represent a radical change in that it includes scarcely any mention of genes, no extended account of primate anatomy, no attempt at a historical review of the science of paleoanthropology, and no technical details about bloodgroups, hemoglobins, transferrins, and the like. Readers may well ask what is left from which to develop a sizable book. The answer is that the author proceeds through three kinds of inferences, starting with a few selected facts derived from human fossils and ignoring the historical and controversial details.

A built-up picture of at least some part of a fossilized creature is the first inference. From this Campbell makes a second inference as to the creature's whole biology and way of life. For instance, knowledge of the creature's body tells him something of its mode of locomotion and this in turn of its environment; knowledge of the teeth suggests what its diet might have been; and so on. The third inference concerns the many details of which no clues survive. The author infers these from the recorded observations on the anatomy, physiology, and behavior of the living primates. In this way, and with an assist from geological sequences, he hypothesizes what any of man's ancestors was like. As he says, "The whole truth will perhaps never be known, but that does not negate the value of making a hypothetical interpretation of what evidence we can lay our hands on."

Exercises of this sort have been a feature at anthropological meetings in England and America for some years, but a book with this approach has been lacking heretofore. Usually a "revolutionary" book is aimed at readers with previous knowledge of the field, but not this one. The writer aims at reaching a not well-informed audience by means of clear writing, simple line drawings, common synonyms in parentheses following technical words, and a 27-page glossary. For those who want to learn more a 14-page bibliography is provided.

The picture of human evolution that emerges can be outlined as follows: The human line stems from an ancient group of primates which had been preadapted for life in open country by a life of semibrachiation in a forest environment. What brought the line into the open is unknown. Bipedalism began to develop from the posture of brachiation when these animals became established in the open (perhaps in the Miocene, 15 to 20 million years ago) and became efficient as subjected to strong selective pressures by long-distance traveling and burden bearing.

The need to reduce body heat in the open environment led to reduction of body-hair length. By 2 million years ago the erect australopithecines—the immediate precursors of true men—had developed self-awareness, a crudely effective means of communication, and a distinctive social organization; they were beginning to modify as well as use tools. From then on the evolutionary process of this unique line accelerated: The brain doubled in size by around half a million years ago, when there is evidence also that fire had been brought under control; it reached modern size by 100 to 200 thousand years ago.

The success of this book when used as a text in anthropology courses will depend on the teacher's ability to supply missing details and argue for other points of view. One such argument concerns the continuing use of living primates—end results of equally long but different evolutionary lines—as models for the stages of human evolution. The early achievement of erect posture by the human line led it into so many new avenues of change that comparison at any point with an existing primate is likely to be misleading.

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At Work in the North

Ancient Men of the Arctic. J. LOUIS GIDDINGS. Knopf, New York, 1967. xlvii + 391 pp., illus. $10.

The late J. Louis Giddings is well and warmly remembered by his colleagues, and some of the many reasons glint from the pages of this excellent posthumous book. Giddings's vital contributions to Eskimology, his reshaping of northern archeology, his sense of problem, his energy, perception, and persistence echo through this narrative of his field experiences in arctic America. Here one learns of the mood and motivations of the prehistorian, the procedures and problems of arctic research, especially archeological, and, of course, one learns a great deal of the origin and evolution of Eskimo culture. Although archeologists commonly disagree on interpretations of their elusive data, Giddings gives a balanced view of Alaskan Eskimo prehistory. In the process, he also serves palatable samples of