

## Book Reviews

OLDUVAI GORGE, VOLUME 4: THE SKULLS, ENDOCASTS AND TEETH OF *HOMO HABILIS*. By P.V. Tobias. New York: Cambridge University Press. 1991. xxxv + 921 pp. ISBN 0-521-20072-5. \$175 (cloth).

Franz Weidenreich wrote the classic monographs in Paleoanthropology in a short span between 1936 and 1943, producing monographs on the Zhoukoudian mandibles, endocasts, teeth, postcranial remains, and crania. In terms of their anatomical depth, thoroughness, comprehensive comparisons, literature review, and groundbreaking theoretical insights into the pattern of human evolution, paleoanthropology has never seen their equal. This is not meant as a criticism of other excellent monographic treatments of fossil human remains. The Suzuki and Takai edited monograph on the Amud sample is exceptional, and emulates Weidenreich's works in many ways. This work highlights my point about Weidenreich, as it took a panel of experts to accomplish the same task. The Arambourg Ternifine monograph, Trinkaus' excellent description of Shanidar, or Heim's La Ferrassie volumes are other examples that any Paleoanthropologist would do well to emulate. Yet, if there were one clear runner-up, it would have to be P.V. Tobias, first in the 1967 *Zinjanthropus* monograph and now in these two superb volumes on the *Homo habilis* remains from Olduvai Gorge. These are consciously, and very successfully, Weidenreichian in their approach.

All of the Olduvai cranial and dento-gnathic remains discovered during Mary Leakey's tenure at the Gorge and attributed to *Homo habilis* are included, but the centerpiece of the presentation is the focus on the 4 best specimens: OH 7, 13, 16, and 24. What follows is basic—age, sex, description, and comparison of the individual bones, teeth, structural regions, and each specimen as a whole. The discussions range through the breadth and depth of Tobias's career, interests, and experience, and include topics as

diverse as language, Olduvai taphonomy, and the phylogenetic status of P<sup>3</sup> root morphology polymorphisms, to sample a very small number. There is a summary of morphology (including a record-breaking comparative table with 344 morphological items), summaries of the phenetic and phylogenetic status of the taxon, and finally the place of *Homo habilis* at the base of humanity. These richly produced volumes include virtually countless figures and photographs, tables, and a superb bibliography. There is an index of subjects, of sites and specimens, and of persons. There are also appendices by M.D. Leakey, R.J. Clarke, and A.C. Walker. It can truly be said that the weight of the volumes exceeds the aggregate weight of the specimens described therein, a relationship that we might come to call the *Index of Tobias*.

What makes this a great monograph, and a paragon for future description? I believe that four things combine to make this work unusual: (1) the thoroughness and accuracy of the descriptions; (2) the systematic comparisons to other materials; (3) the clear focus on that tried and true examination question for all paleoanthropology students, the place of *Homo habilis* in human evolution; and (4) the detailed discussion of 3 decades of literature on *Homo habilis*, made possible by the fact that the specimens were available for all to study, and their casts were widely disseminated. This last advantage, the consequence of National Museums of Kenya policy, is part of the Weidenreichian tradition (imagine if Zhoukoudian had been lost and casts had *not* been widely disseminated) but runs against the current of paleoanthropological traditions at many other institutions where any discussion must await the first substantial publication on new specimens, which is restricted to the discoverers and their friends and professional allies. Well, Tobias got the first word in his initial *Nature* papers, and now with the benefit of a quarter century of hindsight (and maturity) and the opportunity to answer all critics he gets the last—a lesson many could benefit from!

Many of my colleagues have expressed concern that the work isn't perfect, even after all these years of preparation and study. Three common complaints are that the comparisons to Lake Turkana (east, west, and Omo) *Homo habilis* aren't complete enough, the details and metrics of OH 24 are given more weight than the miserable condition of the specimen permits, and there are no systematic comparisons with *Australopithecus afarensis* (on this point, he is probably avoiding shooting himself in the knee, as a description of his 500 or so new Sterkfontein specimens is going to make the validity of that taxon very problematic—an argument he made to begin with). “You must be honest,” said one friend, “no matter how much you like the man.” I suppose that I have as much reason to complain as anyone: after all, Tobias disputes my placement of lambda on the MLD 1 occiput, he spends several pages explaining why my OH 7 cranial capacity estimate (580–600 cc) is incorrect (“much lower than other estimates”) but then presents several re-estimates himself including one based on the Taung biparietal endocast proportion that results in a 577 cc capacity, and he did not describe my reconstruction of OH 16 which included the previously isolated glabellar fragment (and several other pieces) and the repositioning of many cranial pieces, thereby missing the distinct supratral sulcus and the marked asymmetry of the temporal crest development. But the fact is that he is entitled to his opinion about reconstructing missing morphology; a comparative sample is just that, comparative, and not exhaustive, and even a 25-year labor must have an ending point (the references end in the mid-1980s) beyond which it doesn't matter what new materials are discovered or which specimens have been reconstructed again. My position on this is that there is nothing to complain about. No work is beyond criticism, especially one that has the advantage of addressing 30 years of literature, and disagreements may continue into the next century. But this monograph is monumental, the effort taken out of a professional life span is mind boggling, and I would say that

anyone who thinks they can do better should try it!

Ironically, after all the years of unresolved phenetic debate about the validity of *Homo habilis*, the phylogenetic outlook suggests that if these weren't a *Homo habilis* we would have to invent one. With its ancestry circumscribed by the evidence for a lineage split reflected in the discovery of a 2.6 myr *Australopithecus boisei* (KNM ER WT-17000), and the clearly recognizable descendent species *Homo erectus* 1.8 myr or older, there is a distinct species with a beginning, an end, and, as Tobias has shown herein, a set of diagnostic features and a unique evolutionary role. It's not *Homo rudolfensis* we are talking about here, if there is such a thing, but the taxon that L.S.B. Leakey discovered, and Phillip (with 2 l's, as he once reminded me) Tobias and G.H.R. Von Koenigswald put in its proper evolutionary setting.

Perhaps the most telling epitaph to this work is in the continued discovery of australopithecine remains at Olduvai. With Mary Leakey no longer working there, the discovery and reporting of these remains have descended to a different group. They are dedicated workers and in many respects excellent scholars and we can expect extremely detailed and accurate morphological descriptions from them, but if past performance is any guide I wonder whether the monographic treatment this new material deserves will appear; and if so, if it will include commentary on other studies of the new material (difficult, since there can't be any), or a systematic comparison with other remains (including those from Olduvai). (My skepticism comes from the fact that such comparisons were not a part of the Hadar publications.) In other words, will there be the treatment Tobias would have provided?

Mary, I'm glad you had the patience. It was worth the wait.

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