

TEETH, 2nd Edition. By Simon Hillson, 2005. Cambridge University Press, Cambridge. ISBN: 0-521-54549-8

As Hillson himself says, "one of the striking things about returning to the text almost 20 years later is how few of the fundamentals have in fact changed." The revised and updated edition of his 1986 classic *Teeth*, however, demonstrates that things can be improved upon. *Teeth*, in the Cambridge Manuals in Archaeology series, provides material on field techniques and methodology combined with current and relevant archaeological examples. Teeth are a very common aspect of the archaeological assemblage and can provide extraordinary information on the health and diet of paleocommunities, and Hillson brings all these aspects together in a comprehensive manual on the study of teeth. The improvements and updates to this classic are not dramatic, but slight shifts in emphasis and description of recent technological advances makes this second edition a valuable manual for any practitioner of anthropology, paleontology or zoology.

The book opens with a lengthy and comprehensive description of tooth form in mammals, intended as a reference manual for identification of teeth in an archaeological context. It is in this section that the bulk of the revisions are evident. While the first edition was wide-ranging, Hillson has more than doubled the genera of mammals described and illustrated from 150 to 325, representing the entire Holarctic region. One of the most striking changes is the introduction of computer graphics for all the illustrations, *Teeth* has now entered the digital age. This was a labor intensive process for Hillson, but the resulting illustrations are legible and highly informative. The level of detail is impressive, greatly aiding in field identification. To offset these additions, Hillson has deemphasized human dentition in this edition, setting the tone for what is truly a mammalian tooth book. These are excellent changes, widening the readership and the utility of the book as a field manual. However, with the exclusion of reptiles, amphibians and fish from the book, many of which have teeth, one could argue that the book should be titled *Mammal Teeth*. For those with interests primarily in the human tooth, Hillson's (1996) *Dental Anthropology* is a wonderful supplemental resource.

While the remaining chapters of the book are not as dramatically restructured as the first, Hillson has carefully reviewed his earlier work, updating and correcting as necessary. One such example is in the "Dental Tissues" section (previously "Dental Microstructure") which now includes a new section on the chemistry and physics of dental tissue analysis in archaeology. This includes a clear and informative description of the uses of isotopic analysis in dietary reconstruction that have been developed since the first edition came out in 1986 and the role of dentine in DNA

preservation and analysis. The section has been further updated with a new discussion on methods of dental development reconstruction in hominids and advances in dental preparation techniques including proper use of new camera and scanner technology.

The section on "Teeth and Age" has been updated with more recent studies on dental microwear and its utility in comparing extant and extinct animal behaviors such as diet and life history. This section also includes a new discussion on the genetics, development and morphology of teeth. The first edition devoted significant space to a discussion of tooth size and human evolution. This topic has been dramatically edited and abbreviated in the second edition. In keeping with Hillson's current emphasis on mammals in general rather than humans specifically, discussion of tooth size in human evolution is limited to a few paragraphs on dental reduction through time.

Even in a field that has not changed significantly since its first printing, the previous edition of *Teeth* is out of date, and was in need of revision. Discussion of the origin and evolution of teeth would have been a nice topic to include. However, in a book intended as a practical manual for researchers in many disciplines, it is not a glaring omission. As we all discovered in our use of the first edition, Hillson's *Teeth* is an essential and comprehensive reference manual for all archeologists and paleontologists. This second edition is an excellent update of a reliable and invaluable resource.

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