REVIEWS

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Genoways, H. H., and M. R. Dawson (eds.). CONTRIBUTIONS IN QUATERNARY VERTEBRATE PALEONTOLOGY: A VOLUME IN MEMORIAL TO JOHN E. GUILDAY. Spec. Publ. Carnegie Mus. Nat. Hist., 8:v + 1–538, illustrated, 1984. Price, $56.00 (hardbound).

To those acquainted with John Guilday through correspondence and publication, he was a remarkably adept student of the Pleistocene, unfailingly willing to identify small bones, and an author for whom the English language was an elegant tool rather than a barrier to communication. For those fortunate enough to know him personally, he personified unique dedication to science in the face of adversity, and provided inspiration for all. Stricken by polio at the age of 27, John quickly adapted to this setback and began a thirty-year period of quality research in his basement laboratory. The number of citations to John's work in this volume bears witness to the enormous contribution he has made to our understanding of Quaternary biology.

The volume itself is an attractive cloth-bound book with a dust jacket decorated with a black-and-white reproduction of a water shrew, originally done in watercolor on tile by John Guilday. The text is set in a double-column format well suited to the 215 by 280 mm page size. Every contribution is amply illustrated; most figures are set in single column, and many are full page. The production of large-sized photographs will be a boon to readers, but some of the figures might have benefited from the masking effects of reduction. In general, the book shows conscientious attention to editorial detail and careful printing.

A brief introduction is followed by Mary Dawson's tribute to John Guilday, which nicely captures the spirit of the man and includes a complete bibliography. There are 31 contributions that follow in roughly systematic order, with theoretical papers bringing up the rear (an appropriate model of reality, it seems to me, although the editors assure us that their summary function dictated the placement). The volume is devoted primarily to mammals, but there are two papers on herpetofaunas (from Virginia, Quebec, and Kansas), two on avifaunas (from Maryland and Florida), and two on individual bird bones (a partial mandibular symphysis of an owl from Georgia and a tarsometatarsus of a curlew from Mexico).

One of the better (and unquestionably the longest) papers is that of Jones et al., wherein fossil shrews of the genus *Blarina* are allocated to Recent taxa based on discriminant analyses, and plotted on illustrations of canonical variation within and among Holocene samples. This paper combines the paleobiologist's zest for thorough scholarship with a competent grasp of modern systematic techniques, the result being a plausible and interesting scenario of paleobiogeographical evolution in *Blarina*. The addition of Cheri A. to the bibliographic confusion already created by J. Knox and Clyde will make it difficult to keep up with the Joneses for years to come.

Klippel and Parmalee review fossil armadillos found at 50 Pleistocene sites and depict a size cline with several intermediates between *Dasypus novemcinctus* and the larger Pleistocene *D. bellus*. Grady documents *Geomys* from Rancholabrean deposits in New Trout Cave, West Virginia.

By applying discriminant analyses to more than 500 specimens of fossil *Neotoma*, Harris identifies eight described and two undescribed species from 24 Pleistocene and Holocene sites in New Mexico and Chihuahua. Martin's short, but provocative, analysis of body size in *Sigmodon* provides not only a useful method for estimating body mass based on m1 length, but an interesting test of Stanley's (1973) structural limitation hypothesis. An otherwise unexceptional essay on Beringian microtines (Morlan) provided me with the first (and I hope the last) example of a curious Russian nomenclature involving hyphenated specific epithets to denote specimens intermediate or overlapping in characters.

Two new genera (*Guildayomys* and *Hibbardomys*) and six new species of arvicolines are described by Zakrzewski from Midwestern Blancan sites. Kurtén names a new subspecies of dire wolf (*Canis dirus guildayi*). "Use and abuse of dogs" (Wing) is a curious treatise on dogs from Mexican burial sites, with some discussion of correlations between skeletal features and hairlessness in dogs.

Although neontologists occasionally look askance at the amount of lucubration generated by single bits of fossilized matter, Grayson's paper on the noble marten, *Martes nobilis*, is an excellent example of how finding a single tooth can be combined with careful scholarship to make a worthwhile contribution. White et al., argue cogently that two lava blister caves in Idaho served as carnivore traps, then compare the contained faunas with those of other cave deposits. A nice summary of small carnivores (Anderson) would be significantly more useful if it contained at least one reference per species.

The paper by Davis et al. on fossil mammoth dung is exemplary—a complete analysis of a noteworthy

find and a well-reasoned discussion of the implications. The following paper, "Pleistocene tapirs in the eastern United States," by Ray and Sanders, is equally excellent. If we could all write like Clayton Ray, reviewing books like this would be pure pleasure. Continuing the run of good papers, Churcher shoots down the furtive deer: "*Sangamona fugitiva*—the fugitive or furtive deer—is a construct of diverse and disparate skeletal elements, all of which derive from other and usually better known taxa and, except in the minds of men, never existed."

I found the most interesting part of LaSalle's paper on St-Elzéar cave to be the appendix, an annotated faunal list prepared by John Guilday. The Adovasio et al. contribution on Meadowcroft Rockshelter is a summary of evidence relating to the Pleistocene/Holocene transition, which seems to have been rapid and relatively unimportant in western Pennsylvania. The reviewer's obsession to nitpick from time to time compels me to point out that, curiously enough, Table 5 seems to be a duplication of the bottom half of Table 4.

Webb and Wilkins provide a nice summary of Pleistocene mammals from Florida, but I wish there were some way to pursue the *Mormoops* record. If *Mormoops* is in fact known from the Rancholabrean of Florida, then *Desmodus stocki* clearly is not the only Rancholabrean species absent from the state today (p. 375). Two Irvingtonian vertebrate faunas from Kansas, including my particular favorite, the Hall Ash local fauna (full of speedy little microtines), are described by Eshelman and Hager.

Semken furnishes a well-written analysis of a micromammal fauna from the Pleistocene/Holocene transition in Arkansas, quantitatively based on a statistic with the fiendishly clever name of the Freeman-Tukey Deviate. Those of you who have despaired over identifying ample series of well-prepared specimens of *Peromyscus* will relate easily to the discussion by Dalquest and Stangl (pp. 444–445) on identifying lower jaws of eight species from a cave deposit in West Texas. Lundelius describes a late Pleistocene mammal fauna from southwestern Texas, at least some of which seems to have resulted from human activity at the site.

The last three papers of the volume, all provocatively titled, left me unsatisfied. Guthrie's on Pleistocene gigantism is poorly written, rambling, pedantic, condescending, and adaptationist in the extreme. He builds a series of scenarios based on straw men, demolishes them, and deftly weaves all conformations and deviations into a robust whole. Harington's contribution on paleoenvironmental implications, replete with 15 figures that add precious little for the amount of space used, is a rather pointless diatribe based on a plea for data retention by paleontologists. Martin's essay on single lineage phylogenies and evolutionary rates seems curiously out of place in this volume, but does make some useful points about the utility of simple as opposed to branching phylogenies.

To end on a more cheerful note, I enjoyed reading this book, and I expect it to be a valuable reference in the future. The volume is a memorial that I think would have received John's approval: a series of solid scientific contributions by 50 scientists, ranging from neophyte graduate students to grizzled veterans, united around a common theme of learning more about life in the Quaternary.—DON E. WILSON, *U.S. Fish and Wildlife Service, National Museum of Natural History, Washington, DC 20560.*

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Kermack, D. M., and K. A. Kermack. THE EVOLUTION OF MAMMALIAN CHARACTERS. Kapitan Szabo Publishers, Washington, D.C., x + 149 pp., illustrated, 1984. Price, $35.00 (hardbound).

This small book is frankly disappointing in light of the many previous contributions to knowledge of early mammals by the two authors. It was intended to be a "personal" statement on the subject of mammalian origins, but the result is better described as idiosyncratic, or even scientifically biased. Although it is claimed that all literature on the subject of the past decade is included, a great many highly pertinent works receive no notice; many reasonable interpretations alternative to theirs are ignored.

The authors made a decision to discuss the evolution of soft parts only when their nature unequivocally can be inferred from the skeleton. Nevertheless, in many cases, interpretation of features of soft parts went far beyond what can be determined with certainty from the bones. A related commentary, that reflects my own bias, is that much of what makes an animal "mammalian" is not readable directly from the skeleton, but was, nevertheless, evolved in most interesting ways from the "reptilian" grade; to disregard elements such as metabolic rates and reproduction in a book on the evolution of mammalian characters is, in my opinion, unfortunate.

Because of vast gaps in our understanding of early mammals, no existing classification of Mesozoic varieties is wholly satisfactory. The taxonomy used here, however, is unusually controversial, and certainly no more correct than a variety of more generally accepted schemes. The formal classification (p. x) is flawed with