actions, and pollination and dispersal. This chapter provides considerable synthesis of topics described or eluded to in other chapters. For example, data on the ecological implications of wing loading, aspect ratio, and echolocation are used in examining the structure of communities and guilds. Throughout this chapter and Chapters 1-6, Altringham provides an excellent and logical summary of information from the >400 cited references.

Chapter 8, Conservation, was somewhat disappointing; not because of its content, but because of its brevity (only three pages). I realize that “brevity is wit,” but I believe this would have been an excellent opportunity to point out some of the significant problems facing conservation of bats in our rapidly changing world. Perhaps, it would have been a good place to summarize what has caused some of the problems we now face (present some case histories), what needs to be done, and what is being done. The usefulness of bat houses and the need to educate the general public about bats would have been possible additions to this chapter.

Overall, I greatly enjoyed reading this book; it is an excellent contribution to the literature on the biology of bats. There are some trivial imperfections that may be noticed by some readers, but these oversights do not diminish the value of the book. For example, “thought” is misspelled on p. 34, Bracken Cave, Texas, usually is considered to be in the southwestern United States, not the southeastern United States, Crustacea, Amphibia, Neotropics, and others should be capitalized, pepper should not be capitalized, the volume of the article by Johnson-Murray (1977) is 58, not 59, the common name of Tadarida brasiliensis is Brazilian free-tailed bat, not Mexican free-tailed bat (T. brasiliensis mexicana), and referring to the family Muridae as “rats and mice” would have been more accurate than referring to them as “Old World rats and mice.” I believe the author should not have used “very” as often

― that.” Again, these minutia do not affect the factual content and usefulness of the volume. If I were to undertake writing such a book, I would hope to do as well as Altringham.

The primary goals of the book clearly were achieved. In addition to providing a useful account of the biology of the world’s bats, the author has used bats to demonstrate how basic biological processes also shape the rest of our natural world. For example, bats illustrate adaptive radiation, optimal foraging, co-evolution, reciprocal altruism, the consequences of continental drift, and predator-prey adaptations. I believe this book is a valuable reference for bat enthusiasts (amateur or professional), and I highly recommend it to anyone interested in the biology of mammals.—TROY L. BEST, Department of Zoology and Wildlife Science, and Alabama Agricultural Experiment Station, 331 Funchess Hall, Auburn University, AL 36849-5414.


All those with an interest in mammals will welcome this ambitious compilation of data on body mass. Mammalogists are aware that, aside from knowing what kind of creature one is dealing with, the single most important datum for any mammal is its body mass. Identification puts the subject in a phylogenetic context and together with its mass allows one to predict numerous features of the organism’s physiology, morphology, life history, and sometimes even its ecological role. Much is known about body mass among mammals, but a handbook that assembles these data in a readily accessible form clearly can benefit diverse researchers.

One can glean from this volume, for example, that body weight in extant mammals varies over eight orders of magnitude, ranging from a blue whale (Balaenoptera musculus) weighing in at 172,000 kg to the Etruscan shrew (Suncus etruscus) with a minimum adult weight reported at 1.2 g. Second place at 2 g is shared by three bats, six other shrews, and one rodent. Probably no other vertebrate group can claim such a range in body size. Among the 4,629 or more species
of living mammals currently known to science, body mass generally varies with age, sex, and over geography. This complexity makes a comprehensive compilation of weight data a courageous task. The authors of this volume are partially successful in this goal. They have assembled data on 55% of mammalian species (59% of those in Corbet and Hill, 1991) representing all the extant orders. In addition to computer searches, 32 journals were scanned, some as far back as 1950.

Following a brief introductory chapter, there are 21 chapters devoted to various orders arranged alphabetically. Without comment, the pinnipeds are given ordinal status although it has been known for ca. 25 years that these marine mammals are embedded in the order Carnivora. All the marsupials are treated in a single order. Families, genera, and species (and a few subspecies) are all listed alphabetically within each order. Taxonomic treatment presumably follows Corbet and Hill (1991), although a more recent and less-controversial world list is available (Wilson and Reeder, 1993). Data (in kg) are arranged by sex with minimum and maximum values given when available, geographic location, and references. Some references are adorned with an asterisk, the meaning of which is obscure. The data chapters have remarkably few typos, but users should not assume there are no errors. Six entries (p. 141, 158) have the decimal point displaced. Six entries for Didelphis virginiana are listed under D. marsupialis (p. 147), Peromyscus truei (p. 246) and Microtus californicus (p. 230) both are given Alaskan data points, and Solenodon paradoxus is reported from France (p. 122). A more subtle type of error is exemplified by Microtus californicus (p. 230) where weights from captive individuals are reported that are >15 g greater than any known field weights. Missing genera for which published weight data are available range from the well known Homo to the obscure Mayermys.

Chapter 23 offers two tables of regression equations for the prediction of body mass from body lengths. These calculations are based on 1,733 species in 12 orders, and are arranged by orders and major families. The formulas, and especially comparisons among them, could prove valuable to comparative physiologists, ecologists, etc. Citations for 1,610 references for the data chapters are listed followed finally by an index to genera.

Perhaps a handbook of this type is not the place to expect there to be any intellectual treatment of information on body mass, but I believe that the authors could at least have usefully taken this opportunity to explain why they used the term "mass" in their title instead of "weight" although their data are largely estimates of mass based on body weights. Ideally, of course, it is an organism's mass that one would like to know, because the amount of matter of which it is composed is an intrinsic property of that individual, and is not subject to environmental vagaries. In practice, however, we generally determine body weight although this measures gravitational pull and not mass per se. Hence weight varies with altitude (distance from the Earth's center) and latitude (centrifugal force varies with distance from the Earth's axis of rotation and the Earth is not a perfect sphere). For the record, the force of gravity at a given altitude increases 0.529% as one goes from the equator to the poles (this amount to 900 kg of a large blue whale). Weight is also influenced by an object's buoyancy and movements of the medium in which it rests. Nevertheless, as long as we stick to observations in air more or less at the Earth's surface, we can be confident that any differences in weight between objects are largely a function of their masses. Users of this handbook, thus, need not be concerned that any philosophical lapses have compromised the accuracy of the information contained therein.

All in all this is a useful handbook, although available only at an unfriendly price. I suspect that this is the kind of book that will in the near future be published only in electronic format.—WILLIAM Z. LIDICKER, JR., Museum of Vertebrate Zoology, University of California, Berkeley, CA 94720.

LITERATURE CITED


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