

movements, the last exemplified by one animal tagged in San Ignacio Lagoon (Mexico) and tracked to Unimak Pass, Alaska, after a journey of 94 days and 6,680 kilometers. This volume follows the release of a number of other good cetacean books in the last two years and should be welcomed by the community of people interested in cetaceans. Considering the price, a greater number of illustrations would have been helpful.—ALLEN A. WOLMAN, *National Oceanic and Atmospheric Administration, National Marine Mammal Laboratory, 7600 Sand Point Way, Seattle, WA 98115.*

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**Macdonald, D. (ed.)** THE ENCYCLOPEDIA OF MAMMALS. Facts on File, Inc., 460 Park Ave. South, New York 10016. xlviii + 895 pp., 1984. Price (hardbound), \$43.00.

This encyclopedia is the result of contributions by 176 mammalogists and to some extent the book covers all species of mammals. Contributions are organized into six chapters: (1) carnivores, (2) sea mammals, (3) primates, (4) large herbivores—the ungulates, (5) small herbivores, and (6) insect eaters and marsupials, plus an appendix, glossary, bibliography, and index. A list of all recognized species (with geographic distribution) genera, and families of the orders Rodentia, Lagomorpha, Macroscelidea, Insectivora, Edentata, Chiroptera, and Marsupialia are presented in an appendix whereas species of the remaining mammalian orders are covered in the text.

For each order and for several lower taxonomic categories, there is a summary panel giving a map of geographic distribution, relative body size, gestation period, and taxonomic complexity. Format is somewhat unusual and sections are broken up into short units (mostly two to eight pages), which makes sections easy to read, but the extent of partitioning is at times disruptive.

Extent of coverage and quality of presentation for the various taxa are extremely variable. For instance, although the preface notes that "Over one quarter of mammalian species are bats" (p. xiv), only 32 of the 879 pages of text are devoted to this order. At the other extreme 30 pages are devoted to the 35 species (four genera) of the Felidae. The most detailed coverage is provided for the whales, seals, primates, carnivores, and larger ungulates. The bats are the most poorly covered, especially in the general section.

The greatest strength of the book is a brilliant collection of quality photographs and illustrations that result in an excellent blend of scientific content, aesthetics, and detail. The illustrations alone probably justify the price of the book. I did note some problems, however; for example, the individual of *Neotoma cinerea* (page 642) is extremely dehydrated and appears near death and on page 806 the two bats identified as *Uroderma bilobatum* appear to me to be individuals of a species of *Artibeus*.

The inclusion of a glossary in a book bearing the name of encyclopedia, conjures up an image of a definitive set of terms relative to the primary subject (in this case mammalogy) of the work. Unfortunately, in this work, this is not the case as the glossary includes less than 500 terms including amphipod, clupeid, copepod, cyamids, fast ice, gadoid, invertebrate, nocturnal, phytoplankton, seine, spinifex and trypanosome although many mammalogical terms are not defined (for example, antler, calcar, canine, diastema, enamel, fetus, heterodont, incisor, phalanges, thecodont, tine, and uterus). The bibliography is short (160 titles) and selective.

I think this book will have its greatest value to young mammalogists (perhaps about the time they enroll in an undergraduate mammalogy course) and to professionals who need a quick review of a taxon outside their primary interest. If the book is to play this role, I do see one major problem—the format. Throughout the book ideas, points of view, and classifications (comments in the preface notwithstanding) are presented as fact and little attention is paid to alternative viewpoints or even letting the reader understand that in specific areas there are considerable differences of opinion. An excellent example of this is the classification of rodents, where many qualified people have widely divergent opinions, yet if only the encyclopedia is consulted (and in text the reader is not referred to any other source) one would logically conclude that the presented classification is widely accepted. Yet in many cases the classification shown is not like that more commonly accepted. For example, the Geomyidae and Heteromyidae are thought to have shared a common ancestor after separating from the remainder of the living families of rodents. This forms the basis for the recognition of the superfamily Geomyoidea. Not only is this not represented in the phylogeny on page 597, but by lumping the Anomaluridae and the Heteromyidae under a single unit separate from the Geomyidae, the situation is even less obvious. Additionally, I do not know of any researcher who has proposed the formal recognition of the tribe Baiomyini (p. 643). Such problems are not restricted to the rodents, however, as the bat family Mystacinidae is placed in the Phyllostomoidea (p. 789), a position that has not been justified in

the published literature. The point is that the format of not citing sources and presenting all points of view as being equally documented by fact forces readers to accept all statements at face value. This is generally not a problem for the lay person or a person with casual interest but to a professional mammalogist it limits the value of the book.

All of the above criticisms notwithstanding, this work will be a valuable addition to the library of a mammalogist. The extent of coverage on marine mammals is the best that I am aware of and the collection of photographs and illustrations is unsurpassed. The price is reasonable and the quality of printing is good.—ROBERT J. BAKER, *The Museum and Department of Biological Sciences, Texas Tech University, Lubbock, TX, 79409.*

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**Murie, J. O., and G. R. Michener (eds.).** THE BIOLOGY OF GROUND-DWELLING SQUIRRELS. Univ. Nebraska Press, Lincoln, xvi + 459 pp., 1984. Price (hardbound), \$25.95.

This volume arises from a symposium entitled "The Sociability of Ground-Dwelling Squirrels" that was held in Banff, Alberta, in 1982. According to the editors, the goals of the volume were to provide an opportunity to evaluate existing knowledge about the sociability of squirrels and to provide insights for future work. The book consists of 20 chapters contributed by 23 authors from 17 different institutions or universities. Chapters are arranged into seven sections: (1) Comparative Aspects; (2) Annual Cycles; (3) Communication; (4) Mating Systems; (5) Dispersal and Dispersion; (6) Kinship and Sociability; and (7) Retrospective. Although there is unavoidable overlap in the content of several sections and chapters, the book is well organized and flows relatively well from one section to another.

The volume contains the typical benefits and problems of a symposium edition. The majority of chapters provide considerable detail regarding synthesis of previously published materials pertinent to social biology of ground squirrels. Therefore, the book serves as an excellent tool for the serious student of sciurid social behavior. References are up to date, including many citations clearly added after the symposium date. The editors state that nine of the 20 chapters are primarily review papers and that the remainder are based on hitherto unpublished data. Hence, there is an adequate combination of synthesis and presentation of new and old materials to satisfy readers with different interests. However, data for some new approaches must be accepted on faith. Biochemical data, critical to the construction of sciurid phylogeny are to be published elsewhere (Hafner). This absence of available data seriously detracts from this important chapter, yet Hafner does enlighten the reader with several important, hitherto unreported relationships among sciurid taxa, especially for *Marmota*, *Ammospermophilus*, *Spermophilus*, and *Glaucomys*.

Halpin's chapter on "The Role of Olfactory Communication in the Social Systems of Ground-Dwelling Sciurids" is particularly depauperate of empirical data, leading him to conclude that "it is not possible to formulate a general hypothesis relating frequency of scent making to the degree of sociability." In contrast, the section on Kinship and Sociability (chapters by K. B. Armitage, B. M. Vestal and H. McCarley, and L. S. Davis) is most innovative and complete with data regarding population structure and evolution of social relationships in sciurid species. Readers will be able to apply data from these chapters to several other disciplines, particularly population genetics, mating systems, and ecology.

The volume will be most valuable to mammalogists with interests in social behavior, mating systems, and life history of sciurid rodents. To others whose primary interests are outside the field of social behavior, the material is more limited. However, I feel that the editors and authors have achieved the goals stated in the preface, and have provided a consolidation of materials valuable for the synthesis of behavioral patterns in ground-dwelling squirrels. Some authors have surprisingly violated the unwritten law—"Never publish your good material in a symposium."—RONALD K. CHESSER, *The Museum and Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409.*