

Book Reviews

The Science of Photomedicine.

J. D. Regan and J. A. Parrish (Editors)

New York: Plenum, 1982, 658 pp., illus., index, \$75.00

This timely book is designed to be of interest to researchers and clinicians in the field of photobiology, dermatology, and radiology while also being useful as a general reference for practicing physicians. In its preface, the authors state "this book describes the paradigms, experimental data, technical procedures, and science which form the basis of photobiology in medicine." That these goals have largely been achieved is a tribute to the skills of the editors and the 35 contributing authors.

The 23 chapters are grouped into six sections, progressing from basic science to applications. The reader is thus provided with information in a logical sequence that facilitates the understanding of normal and abnormal photobiologic processes in man and the rationale for photoprotection and phototherapy.

Each chapter is written by a different author. Given the broad scope of the book and its relatively small size, it is to be expected that each chapter is an overview of its subject and not an in-depth treatise. Nevertheless, the chapters are well referenced and provide the reader with the ability to obtain additional source material as required.

The authors are drawn from many different groups throughout the United States and Europe. Although this diversity of background does result in some variation in writing style from chapter to chapter, the great majority of the chapters are very readable. Each chapter is self-contained. Cross-referencing between chapters is not extensive. Material in one chapter is occasionally repeated in another chapter. The entire chapter on the photobiology of carotenoid protection could well have formed the introduction to the subsequent chapter on beta-carotene therapy. Similarly, the three chapters addressing dye-light interactions in biologic systems could have been merged into a single chapter. These are minor criticisms and do not detract from the usefulness of the book.

The chapter of photodermatoses is less well organized and less clearly written than other chapters and utilizes a classification system that may be unfamiliar to the great majority of the intended readers. This deficiency is alleviated by the availability of a short text by Harber and Bickers entitled *Photosensitivity Diseases*, which clearly addresses this subject. Unfortunately, that textbook was not referenced in the bibliography at the end of the chapter.

In summary, this book very successfully achieves its overall aim, i.e., presenting the scientific basis for photomedicine. It represents a useful introductory book for its intended readers. It is well worth owning and reading.

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Ecology of Bats. T. H. Kunz (Editor)

New York: Plenum, 1982, 425 pp., illus., index, \$9.50

Because there exists an extensive literature representing a wide range of studies on the biology of bats, there is a need for a unified treatise on this uniquely specialized and primitive mammal. This book meets such a need. *Ecology of Bats*, edited by T. H. Kunz of Boston University, contains 10 chapters, with emphasis on ecology, but in terms of its interrelationship with ethology, physiology, and morphology and with material on evolutionary processes. This latter factor, plus the data on physiology found throughout the book, makes it significant for the comparative physiologist. Thus the book contains material pertinent to comparative physiology and physiological zoology, some chapters being of general interest and others of more specific interest.

Five chapters appear to be of direct interest to the physiologist: Chapter 2 by P. A. Racey on reproduction; Chapter 3 by M. D. Tuttle and D. Stevenson on growth and survival; Chapter 7 by M. B. Fenton on echolocation, insect hearing, and feeding; and Chapter 4 by B. K. McNab, "Evolutionary Alternatives in the Physiological Ecology of Bats," which is most significant. This well-written chapter has highly informative sections on energetics, including factors in energy expenditures and thermal conductances, endothermy, relationship between energetics and life-span, adjusting energy expenditure to tropical and temperate environments, migration, hibernation, energy budgets in the evolution of bat energetics, and water balance (kidney function and balancing a water budget in bats). Chapter 5 by H. G. Eckert, "Ecological Aspects of Bat Activity Rhythms," is also highly interesting and informative. Material is presented on methods for recording bat activity, arousal and timing of flight under external influences (light, temperature, and wind), and the endogenous origin of bat rhythms (circadian, susceptibility of period to exogenous factors, phase response of circadian rhythms to light pulse, entrainment of circadian rhythms, zeitgeber for circadian activity rhythms). There is also a section on ecological adaptation of circadian systems and evolutionary aspects.

Whether the physiologist wishes to study the complete book (worthwhile for general information) is a matter of personal preference, but it appears to me that it would be most useful for background information, especially in the extensive literature-cited sections. It should be mentioned that all the authors have written summaries of their chapters.

I would recommend this book to the comparative physiologist and physiological zoologist as a source book containing pertinent and up-to-date "state-of-the-art" information on bats. For the ecologist and physiological ecologist this book is a must because of the completeness of information and as a "scholarly treatment of the ecology and behavior of bats."

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