

BOOK REVIEW

Cloudsley-Thompson, J. L. 1991. **Ecophysiology of Desert Arthropods and Reptiles**. Springer-Verlag, Berlin, Heidelberg, New York. 216 pp. 77 Figs. (Price \$98.00)

Cloudsley-Thompson has been writing about the ecology and biology of desert animals for over four decades. Drawing on that vast experience he has produced a book that is filled to the hilt with detailed examples, often accompanied with photographs, of the peculiar behaviors and physiological characteristics of desert reptiles and arthropods. His descriptions of such behaviors as "sand-swimming" and "fog basking" will appeal to those of us who have come to fancy the desert.

The book is divided into nine chapters that focus on specific problems and adaptations of desert life. Most of these chapters address issues related to how reptiles and arthropods respond to the physical constraints of the arid environment. Among these issues are thermal regulation (chapter 4), water balance and nitrogenous excretion (chapter 5), phenology (chapter 6). Chapter eight is an excellent treatment of burrowing, mimicry, and adaptive coloration. Chapter nine is an admirable review of important biological interactions of desert animals (e.g., competition, predation, etc.).

Arthropods and reptiles are discussed in separate subsections within each chapter and the emphasis of the book is divided equally between the two major groups. This organization, along with the strong chapter and subsection introductions, makes it possible for one to read the book from start to finish focusing only on either reptiles or arthropods. With respect to arthropods, Cloudsley-Thompson has drawn heavily on the works of R. A. Bradley and G. Polis (Scorpions), C. S. Crawford (myriopods), E. B. Edney and A. C. Marsh (insects), N. F. Hadley (scorpions and insects), W. F. Humphreys and B. Y. Main (spiders); and his review of these works is concise. The book is a valuable reference for those interested in deserts.

Nevertheless, the book has a number of shortcomings that detract from its usefulness as a pri-

mary source on the ecology of desert animals. Cloudsley-Thompson motivates the work by suggesting that there is a need to compare and contrast the adaptations of the two most successful groups of desert animals, reptiles and arthropods, to "...the various parameters of the desert environment.." (p. 1). Yet these "parameters" are never clearly delineated save for the chapter headings and, with few exceptions (most notably the section on burrowing), little effort is given to actually comparing the features of these two disparate groups. Even the discussion of convergence, where such comparisons could logically be made, is divided into separate sections on reptiles and arthropods. One is left wondering whether the two groups are comparable.

Moreover, after 168 pages of excellent examples of adaptations to desert conditions, Cloudsley-Thompson, apparently under the strong influence of Bradshaw (1986), dismisses the significance of those adaptations by suggesting that most reptiles and arthropods are preadapted for the desert extremes. He writes: "During the course of this book it must have become apparent that neither arthropods nor reptiles show particularly marked desert adaptations" (p. 169). An astonishing statement from someone whose life's work has been given over to explaining how animals survive in the desert.

I found some of the sections to be unnecessarily long and wordy. In particular, the discussion of the theoretical aspects of parallel evolution and convergence is poorly developed. Also, for those unfamiliar with either the reptiles or the arthropods the index will be somewhat difficult to use since, with few exceptions, common names are not included.

LITERATURE CITED

Bradshaw, S. D. 1988. Desert reptiles: a case of adaptation or pre-adaptation? *J. Arid. Environ.*, 14: 155-174.

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