

guises. A detailed table of contents and a good index help to track down a set of related discussions.

The final chapter outlines the relationship of ecology as a discipline to applied problems and environmental concerns. The important point is that, notwithstanding the efforts of many ecologists concerned with environmental problems, ecology has not yet become the broad theoretical foundation of the applied environmental disciplines.

The book is remarkably successful given its ambitious aim. Not every discussion will satisfy all readers in their areas of specialization but, in general, the level is right and the presentations clear. McIntosh often reaches strong conclusions with which many will disagree, but he never reaches these conclusions by silly arguments.

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ECOLOGY AND NATURAL HISTORY OF DESERT LIZARDS. *Analyses of the Ecological Niche and Community Structure.*

By Eric R. Pianka. Princeton University Press, Princeton (New Jersey). \$45.00 (hardcover); \$19.95 (paper). xi + 208 p. + 4 pl.; ill.; author and subject indexes. 1986.

Eric Pianka has spent much of his professional lifetime studying the ecology of desert lizards in three continents. Few biologists can boast such a breadth of field experience, and this is reflected in this excellent synthesis of his seminal scientific publications.

Pianka selected some 31 sites, in southern Africa's Kalahari semi-desert, in the Great Basin, Mojave, and Sonoran deserts of southwestern North America, and in Australia's Great Victoria Desert. He and his colleagues collected some 15,000 specimens and based their dietary analyses on more than 500,000 individual prey items. These jointly provided a massive data base which the author has used to address the problems of inter-continental differences in community structure of desert lizards. So voluminous are the hard data that well over half the book is taken up with appendixes, tables and figures. The twelve chapters range in length from 7 to 21 pages and systematically cover descriptions of the environments studied (Chapters 1 and 2), thermal relations and activity patterns (Chapter 3), foraging and trophic relationships (Chapter 5), community structure and organization (Chapters 8 and 9) and prospects for further work (Chapter 12).

Pianka's contribution to our knowledge and understanding of desert lizard ecology is so outstanding that to criticize is to carp. I found his timely warning against making too much out of convergence between lizards of different continents somewhat at variance with his willingness to accept (vir-

tually without supportive data) ecological convergence between lizards and snakes, birds, and mammals.

The author documents significant intercontinental differences and similarities in features such as species diversity and niche overlap and then sets out to explain them in terms of differences between the particular desert ecosystems. Rarely does he examine whether what is happening in his desert communities is a reflection of broader continental patterns and therefore a consequence, at least in part, of earlier vicariance events. For example, the rich species diversity of the mostly obligate-nocturnal gekkonid lizards in Australian and southern African deserts and their low diversity in North American deserts is equally true of non-desert environments. Pianka postulates that the stronger effects of Pleistocene glaciation in North America may have discouraged the evolution of nocturnality in North American desert lizards, but does not examine this in the context of the evolution and distribution of taxon-correlated nocturnality.

Despite the "Natural History" in its title and some fine color photographs this is not a "popular" book. Its emphasis on data and statistical analysis and its uncompromising use of specialized terminology would make it heavy reading for those without a background in ecology and evolutionary biology. For anyone with such a background, however, the book is an erudite and exciting account of a journey of discovery spanning desert lizard faunas on three continents. Eric Pianka has a probing and analytical mind which time and again presents us with new insights into old problems.

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PLANT RESOURCES OF ARID AND SEMIARID LANDS: A GLOBAL PERSPECTIVE.

Edited by J. R. Goodin and David K. Northington. Academic Press, Orlando (Florida). \$55.00. xiii + 338 p.; ill.; index. 1985.

Arid lands present a range of environmental niches in which adaptive pressures have produced a wide variety of plants having diverse forms and chemistries as well as capabilities for efficient utilization of water. If we are careful, we may select from these a considerable number of useful plants to be encouraged in situ or domesticated for planting in other areas. The economic potential represented by the plant resources of arid lands is immense; there is a great need for an organized inventory of the diverse plant resources available in semi-arid and desert environments. This book was prepared in recognition of that need, the result of a conference convened to assess these resources.

Recognition of the need does not necessarily ful-