

Desert rats

Rodents in Desert Environments. (Monographiae Biologicae, Vol. 28.) Edited by I. Prakash and P. K. Ghosh. Pp. xvi+624. (Junk: The Hague, 1975.) Dutch Guilders 180.

THIS is one of several recent books devoted to the adaptations of desert organisms. Most have centred around a unifying disciplinary theme, such as comparative physiology, providing integration. This book of 23 invited chapters focuses on a single taxon of organisms sharing a common habitat. Desert rodents, however, are so diverse that appreciating their adaptations requires synthetic interpretation by specialists. Although some of the chapters use a synthetic approach (especially those by Newsome and Corbett; Mares; Rosenzweig, Smigel and Kraft; and Ghosh), many are purely descriptive. As a result the value of the book for the general biologist interested in evolutionary and/or ecological phenomena is diminished; the overall quality would have been greatly enhanced by inclusion of a comprehensive, synthetic chapter based on a thorough reading of the invited chapters, indicating those adaptive patterns which are unique to desert rodents and the advantages they offer.

The primary value of the book is that for the first time (and mainly in a single language: English) there are detailed accounts of the biology of rodents from most of the world's deserts, providing a wealth of comparative information on distributions, general ecology and life histories, activity patterns and population fluctuations, behaviour, competitive interactions, and adaptive physiology. The lengthy chapter on Russian jerboas and gerbils by Naumov and Lobachev is particularly welcome. The chapters vary tremendously in quality and scope with some reporting original research or comprising state-of-the-art messages, whereas others reflect woeful neglect of the current literature or are merely rehashes of ideas and materials previously treated. Lapses in editorial rigour are indicated by numerous typographical errors, and occasional misinformation. Statements of misinformation I found particularly distressing include: "Tropical Dasyurids such as *Antechinomys* . . . do not normally venture into arid habitats", p 394 (the only species of these small Australian Marsupials, *A. spenceri* and *A. laniger* occur exclusively or primarily in arid habitats); ". . . Heteromyidae . . . the most common rodents in Arizona and the Sahara Desert." p 417 (heteromyids are endemic to the new world).

I found the most interesting paper to be that by Rosenzweig, Smigel and

Kraft, a state-of-the-art message on coexistence and resource allocation in North American desert rodents. As well as summarising what is known, they emphasise equally what is still unknown about the enormous complexity of competitive interaction. Our continuing fascination with desert rodents is well reflected in their statement, ". . . clearly allocation occurs

. . . But something that is known to occur ought to have an explanation" (p 251).

To the careful reader this book provides a great deal of information on desert rodents, some synthetic explanations, and stated suggestions or unstated gaps where future research could be productively directed.

Richard E. MacMillen

Drug resistance

Acquired Resistance of Microorganisms to Chemotherapeutic Drugs. (Antibiotics and Chemotherapy, Vol. 20.) Edited by F. E. Hahn. Pp. xi+272. (Karger: Basel, London and New York, 1976.) Sfr.139; DM132; \$53.50.

THIS book is a collection of nine chapters by different authors, as follows: Inducible bacterial resistance (Connamacher); Chromosomal mutation to drug resistance in bacteria (Sirotnak); Molecular modifications of anti-microbial agents to overcome drug resistance (Neu); Anti-mutagens and the prevention of chromosomal mutations to drug resistance (Hahn); Genetics of *R* factors (Mitsuhashi *et al.*); Molecular biology of *R* factors (Clowes); Experimental elimination of *R* factors (Hahn); Drug resistance in leukaemia (Hutchinson and Schmid); and Drug resistance in the human malarial (Tiggert and Clyde). There is a preface by Hahn.

Although there are valuable data in the volume, the diversity of authors has produced a very uneven presentation; in parts the English is poor in style and even in grammar; and the same data are presented by different authors, not always with the same lucidity or interpretation.

The price of this book—over £29 at the current rate of exchange—is outrageous. In view of its uneven quality and the many better sources of information, it is not recommended. If information is needed about plasmids and various other genetic aspects of drug resistance, for example, the reader is advised to consult Falkow's *Infectious Multiple Drug Resistance* (Pion: London; distributed by Academic: New York and London, 1975); for review see *Nature*, **258**, 368 (1975). The two books are of about the same size, but Falkow's treatise is greatly superior and costs only £7.70 (\$19.95).

E. S. Anderson

Auger spectroscopy

Photoelectron and Auger Spectroscopy. (Modern Analytical Chemistry.) By Thomas A. Carlson. Pp. xiii+417. (Plenum: New York and London, 1975.) \$39.

THE improvements in electron spectrometers and electron detectors which have been achieved over the past two decades have provided new techniques for the study of the nature of the electron orbitals which hold together the positive framework of matter. The three most profitable areas in which these developments have been applied are ultraviolet photoelectron spectroscopy, X-ray photoelectron spectroscopy and Auger electron spectroscopy. The author of this book, who has had long experience in each of these fields, writes about them in a very lively and authoritative manner.

After the initial chapters which deal with instrumentation and fundamental concepts the subject matter is divided into: photoelectron spectroscopy of outer electron shells; photoelectron spectroscopy of inner shells;

and Auger electron spectroscopy. The first of these topics is mainly concerned with the ultraviolet photoelectron spectroscopy of gaseous molecules and the nature and ordering of the molecular orbitals as revealed by their spectra. The second topic deals largely with the binding energies of the core electrons and how these are shifted by the state of the valence shell environment in which they find themselves—that is, the so-called 'chemical' shift. In the third—the Auger effect—a beam of electrons rather than photons is focussed on the sample, and valence or core electrons removed in an identifiable manner.

Apart from the importance of the basic information on the electronic structure of matter which these effects reveal the fact that they are of low penetrating power makes them extremely valuable for studying surface phenomena such as catalysis, corrosion, adsorption, and so on.

The book is well referenced and contains a great deal of useful tabulated data. It should be valuable both to the general reader and the specialist in the field. **W. C. Price**