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## BOOK REVIEWS

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**Annual Review of Microbiology: Vol.36, 1982** Editor: Mortimer P. Starr, Associate Editors: Albert Balows and Jean M. Schmidt (Annual Reviews Inc., Palo Alto, California, USA) 563 pp. Price: USA \$22.00, Elsewhere \$25.00.

This volume starts with a chapter by Sidney Raffel on "Fifty years of Immunology", recording his personal observations about developments in immunology. The author has confined himself to some of the clinical aspects of immunology as in the case of tuberculosis or immunologic hypersensitivity, autoimmunity etc. However, there is absolutely no reference to the fantastic advances that we have seen in the recent years on the biochemical or genetic aspects of immunology. The article is interposed with interesting personal experiences and the sense of humor of the author makes it an enjoyable reading. To quote one instance what Dr. Raffel says about his teaching experience with medical students in Iran, "My first lecture was to be an overview of immunology and, as it happened, this talk had to be delivered in the anatomy dissecting room. Perhaps fifty cadavers occupied the farther reaches of this spacious chamber. After about ten minutes of what I considered a spritely monolog, it occurred to me that students and cadavers were absorbing it with about equal avidity.....".

The 20 reviews presented in this year's volume cover almost all aspects of microbiology. It is gratifying to note that in the article by Colin Curds on "The ecology and role of protozoa in aerobic sewage treatment processes, the work done by Dr S. C. Pillai and his co-workers at IISc, Bangalore during the 1940s on the role of protozoa in the activated-sludge process has been extensively quoted. The article "Coping with computers and Computer evangelists" by M. I. Krichewsky gives a useful introduction to microbiologists about the application of computers in different fields of microbiology, ranging from process control in the laboratory or fermentation plants, to the use of probability techniques to aid in the identification of possible pathogens or numerical taxonomy. The basic rules useful in contemplating use of computers are also provided starting with the first law which states that "If the task can be performed in any other reasonable way, avoid using a computer". The author's final suggestion for getting started with minimum capital investment and minimum risk is to use a time-sharing computer and contact for the programming. A review article on "Magnetotactic bacteria" by R. P. Blake-more provides interesting information on this impor-

tant group of organisms. The magnetotactic bacteria may prove to be of value to microbiologists, evolutionary biologists, biochemists, physicists, geochemists and animal behaviourists and they offer intriguing possibilities in biotechnology. The information available on these ubiquitous organisms, though limited is extremely interesting. For the industrial microbiologists the review on immobilized microbial cells by Fukui and Tanaka evaluates the techniques and usefulness of immobilization in various processes. For scientists interested in molecular biology or evolution the review articles "The evolution of RNA viruses" by D. C. Reaney, "Viroids and their interaction with host cells" by T. O. Diener and "Metabolic acquisitions through laboratory selection" by R. P. Mortlock are informative. Similarly, for the medical microbiologist and the immunologist there are articles on primary amebic meningoencephalitis, haemophilus infections, microbiological models as screening tools for anticancer agents, detection of bacteremia and the mediators of anaphylaxis and inflammation. The contents of the volume thus cater for a wide variety of practising microbiologists. With the publication of this volume, Dr. Mortimer P. Starr who served as the editor of Annual Reviews of Microbiology for the past 24 years has retired, and the next volume will be appearing under the stewardship of a new editorial board.

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**Alpine Flora of Kashmir Himalaya.** By Uppeandra Dhar and P. Kachroo. (Scientific Publishers, Jodhpur, India) 1983. 280 pp. Colored frontispiece, 7 B. & W. plates, 115 figs. (maps, diagrs.), 6 tables. Price Rs. 200.00; Abroad \$45.00.

The flora of high Himalaya is a fascinating one and any account of it, particularly of the enchanting Kashmir Himalaya, is to be ardently welcomed. The authors of the book under review have extensive knowledge of this flora and, being residents of the region, have explored even the remote valleys for the collection of plants. The introductory chapter gives an account of the alpine habit and habitats. This is followed by the chapter on Geology and Climate. The

geological history of the region and of Himalaya in general, as given in this chapter, is based on the work of various authors with different viewpoints and, in the absence of a critical appraisal and reconciliation, does not give the reader a clear picture. The rainfall figure of 5–5000 mm given for Skardu, Kargil (at p. 11) has obviously a printing mistake in it.

Chapters 3 and 4 are concerned with the General Vegetation and Phytogeographical assessment of the extinct and extant floras. Following these are two chapters which deal with the floristic analysis and the distribution pattern of 'Natural Orders'. The use of the expression 'Natural Orders' instead of families appears odd in a modern taxonomic work. These chapters are helpful for the understanding of the present day distribution of the alpine plants of the Himalaya and its neighbouring mountain systems. There are several useful distribution maps for as many as 165 species, though some of them do not show all the locations for the species concerned. The information is mostly compiled from published literature and one has to bear in mind the varying criteria employed by different authors for the recognition of specific limits. This varied treatment has a bearing on the number of species included in a genus and the endemic status claimed for some of them. There is also some confusion regarding the use of the term 'endemism'. Many of the species stated to be endemic to Kashmir are really not so as they have a wider distribution and as such the percentages drawn for endemism in Kashmir for several genera have no significance.

The last chapter gives an enumeration of the species collected in the region which are arranged family-wise with Keys, brief descriptions, collection localities and author's (Dhar's? or is it a misprint for authors?) collection numbers. The sequence of families in this section and in chapter 6 is stated to be after Hooker (1872–1897) but Plantaginaceae appears in an odd position between Acanthaceae and Lamiaceae in chapter 6 and Plumbaginaceae and Plantaginaceae likewise are found in a strange position in chapter 7. A list of literature consulted and an index of botanical names complete the text.

Notwithstanding the above comments and the many spelling, printing and other mistakes seen in the text, the book is useful to students, teachers, naturalists and all others who have an interest in the Himalaya and its flora. The book is well produced. It has an attractive dust jacket with a beautiful colored photograph of the enchanting Thajwas Valley. The same photo also appears as the frontispiece. The black and white photographs in seven plates are, however, disappointing; some of them are so poorly reproduced that hardly anything is visible. These should have been

omitted. The book is a good buy for those who can afford its high price.

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**Annual Review of Entomology — Vol. 28, Edited by T. E. Mittler, F. J. Radovsky and V. S. Resh. (Annual Reviews Inc. 4139, El Camino Way, Palo Alto, California 94306, USA), 1983 Price. US \$27.00 Elsewhere—30.00**

The Annual Reviews of Entomology are intended not only to cater to specialist interests, but also to enable Entomologists to acquire a general background in established disciplines in Entomology and also to become familiar with newly emerging areas. Viewed in this context, the volume under review attempts to cover different areas of expertise encompassing a wide range of topics. To give an overall analysis, the specialist areas include Biology and Ecology of insects, Insect-Plant Interactions, Vector Biology, aspects of economic Entomology and evolution and zoogeography.

Particular mention may be made of the Biology of tipulids, Mecoptera and stingless bees; Ecological aspects relating to Insect territoriality, thermo-periodism, chemical ecology of defence, communication and bioluminescence, ecology of cave arthropods, oreibatids in forest ecosystems and energy transfer in insects; Insect-plant interactions in terms of plant architecture and diversity and phytophagous insects, visual detectability of plants by herbivorous insects and insects as flower visitors and pollinators; Aspects of economic entomology relating to integrated pest management of Pecans, and dispersal and movement of insect pests; Vector biology including mosquito blood meal identification and intrinsic factors affecting vector competence of mosquitoes for arboviruses and Evolution and zoogeography relating to sexual selection and direction of evolution of Hawaiian *Drosophilidae* and changing aspects in biogeography.

It must be emphasised that this volume continues to maintain the high academic standards attained by each of the earlier volumes.

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