
BOOK REVIEWS

Annual Review of Entomology by Thomas E. Mittler, Frank J. Radovsky, and Vincent H. Resh, (Annual Reviews Inc, 4139, El Caminoway, Palo Alto, California 94306, USA) 1984, Vol. 29, pp. 521, Price: USA \$27,- Elsewhere \$30,-

Beginning with the contributions of the outstanding biologist Frederick Simon Bodenheimer (1897-1959), the founder of Entomological studies in Israel, this volume includes thought-provoking reviews on a variety of subdisciplines involved in the gamut of entomological studies.

In the area of biosystematics, a general review of 'Molecular systematics', with analyses of molecular data and methods of comparison of evolutionary trees with particular emphasis on phylogenetic estimation from electrophoretic data provides interesting reading. Of equal relevance to biotaxonomic studies is the one on the 'Evolutionary and the applied perspectives in insect biotypes', with classification based on mechanisms underlining their differentiation. The significance of biotypes in adaptation, speciation and pest management is discussed.

Since spatial distribution is the most characteristic ecological properties of insect species, the review on 'Assessment and interpretation of spatial distribution in insect population' appears significant in view of this area being both of applied and fundamental importance. The article on 'Astronavigation in insects', provides stimulating reading, besides the two reviews on the 'Ecology and sociobiology of bumble-bees' and the 'Defence mechanism of termites'.

As aids in pest management, farm computerization is indicated to have as much impact as do farm mechanization, a feature discussed in the article on 'Development of computer based IPM extension delivery system'. Dealing with the economic analysis of IPM systems, the article on 'Apple IPM implementation in north America' is of interest. Other review articles in this area are 'Modification of small farmer practices for better pest management' highlighting the development of extension of improved agricultural technology for small farmers in the tropics. Of equal relevance in this area is the article on 'Economics of decision making in pest management, concerning the goals and behaviour of those who make pest management decisions with the aid of static and dynamic decision models.

The two articles 'Host-parasitoid interactions' as well as the 'Interaction between blood sucking arthropods and their hosts and their influence on vector potential' offer a critical assessment, the former involving, one host-one parasitoid models leading to more complex interactions in multi-parasitoid communities. From the view point of plant disease vectors, the article on 'Japanese pine sawyer beetle as the vector of pine wilt disease' appears to be an important contribution to Forest Entomology. In the area of biological control of insect pests, the reviews on the 'Bionomics of the Aphelinidae' and 'Spiders as biological control agents' are very useful.

Public health problems associated with exposure to insect as well as occupational hazards encountered by entomologists are discussed in the review on 'Insect allergies'. Of equal interest is the 'Induction of detoxification enzymes in insects' based on the principle that such an induction involves a recognition system wherein, exogenous chemicals in the insects' environment can stimulate the production of enzymes that degrade them. Though not directly related to this area, the review on 'The functional morphology and biochemistry of insect male accessory glands and their secretions' is of current interest in the reproductive biology of insects.

The review on 'The role of microarthropods in decomposition and mineralization process' examines critically the importance of microarthropods in the above two processes on the basis of qualitative assessment.

That these reviews are valuable additions to entomological literature is an axiomatic truth and the publishers of Annual Review of Entomology are indeed doing commendable service to the entire tribe of entomologists by their publications of really thought-provoking reviews on subjects of current interest which no entomologist can afford to ignore.

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Annual Review of Earth and Planetary Sciences, by George W. Wetherill, Arden L. Albee and Francis G. Stehli (published by Annual Reviews Inc, 4139 El Camino Way, Palo Alto, California 94306, U.S.A.), Vol. 11, 1983, pp. 509, Price: USA \$44/- Elsewhere \$47/-.

The volume contains 17 articles that deal with a great variety of topics related to earth and other planets. They are in general very well-written by eminent scientists. They range from general synthesis to advanced state of the art reviews. The volume, like the others in the series appeals principally to libraries and to those who seek excellent summaries of work outside their own areas of interest.

Reviews on strain accumulation in Western United States deals with the application of geodetic techniques; accretionary tectonics of the North American Cordillera; the structure of silicate melts provides a basis for understanding the relationship between the structure and the physical, chemical and thermal properties of melts; Cenozoic glaciation in the southern hemisphere reveals the history of Antarctic glaciation longer than had previously been suspected; radioactive nuclear waste stabilization deals with the aspects of solid-state molecular engineering and applied geochemistry; Hot-Spot Swells explain the thermal perturbations as possible explanations for continental margins, continental basins and the broad volcano-capped uplifts; Oceanic intraplate seismicity deals with the mechanism of intraplate seismicity and siting of the stress release on the plate; Creep deformation studies of ice are needed in the field and the theoretical studies of the flow and deformation of glaciers, ice shelves and ice sheets; recent developments in the dynamo theory of planetary magnetism deals with growing appreciation of the various ways in which palaeomagnetic data of observations of secular variations can be used to test theoretical ideas about the dynamical processes in the core; anoxic rate studies in sediments guided by microbial ecologists using the newly developed techniques enable us to make direct measurements of a number of remineralization rates in sediments, employing stable and radioisotopic tracer methods; the article on, methane and other hydrocarbon gases in marine sediment helps us to locate buried petroleum accumulation in marine sediments by detecting gas seeps on the seafloor, taking into account the effects on gas composition of both the mechanisms of origin and near-surface alteration; the review on the *in situ* trace element microanalysis discusses techniques based on particle track radiography and techniques based on

characteristic x-ray production; the studies on seismic gaps have proved very successful in forecasting the sizes and locations of large, shallow earth-quakes. The review in addition, leads to important insight regarding the physical nature of seismic gaps and the earthquake process; the review on terrestrial inert gases tells us how isotope tracer techniques employed serve as clues, to primordial components in the mantle; contribution on the atmospheres of the outer planets provides a quantitative explanation for the extreme differences between terrestrial planets and major planets—Jupiter, Saturn Uranus and Neptune. The major objective for studying the planetary atmospheres is to ascertain information on all the planets to understand the origin of Solar System; in the paper on asteroid and comet bombardment of the earth, the first review of the astronomical and geologic evidence concerning the history of bombardment is presented. the physical effects of large impacts, as they may apply to both the inorganic and organic worlds are discussed.

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Organic Bloom—An Evolutionary Hypothesis by Reddivari Sarva Jagannatha Reddy, (Zoology Department, Government Degree College, Nagari 517 590) 1984, pp. 56, Price Rs. 8/-.

The author's declared air for this monograph, is that it provides an in-depth review of the process of Evolution both by describing what has been done and by comparing what others have viewed and said. He claimed to have proposed a new view on orthogenesis but it has been unrecognizable. Not thoroughly guided by facts, information and literature, the author made a bold but preliminary attempt to sew the information-fragments to describe the organic blooms in the history of our planet. He calls this account a monograph, rather than a book. The account of biological evolution he gives is clear and simple. He categorically explained the orderliness and regularity of Evolution.

This is a monograph for amateur biologists; I can say not for general audience. This monograph is unfit even as a reference for the advanced biologist or

evolutionary theorist. Rather, it is a monograph for an introduction course in modern biology. I am sure, the beginner would definitely enjoy the tit-bit information on the evolution rather than aspiring for a detailed knowledge. It may be a useful contribution for the scientist or student who is about to embark on work which utilizes evolutionary aspects. The author could have taken a little more care in devoting to the aspects pertinent to coevolution. The book is useful to the pre-degree and degree institutions as an aid to the teaching of evolution.

I am sure that everybody would join me in giving appreciation for the author's work, interest, zeal and enthusiasm in documenting the age old concepts of organic evolution on virtually all phases and principles and animal evolution. Viewed in this respect this is a small book of fascinating information.

Whether the subject is religion, economics or chemistry, theorists tend to be self-centered in their writings. The theoretician basically peddles a world view. Who can blame him for thinking that he is the best, if not the only view? The reader need not agree with the author's personal philosophy, as the author makes it clear, and the scientist need not agree with all the data, to appreciate that every individual work is unique. Accepting this human tendency, one could profitably glance through this theoretical monograph.

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Annual Review of Microbiology by L. N. Ornston, A. Balows and P. Baumann (Published by Annual Reviews Inc. 4139 El Camino Way, Palo Alto, California 94306 USA) Vol. 37, 1983, pp. 656, Price: USA \$27.00, Elsewhere \$30.00

This volume of Annual Review of Microbiology has come out with a changed editorial board but without much change in the scientific content! The 25 chapters, embracing various aspects of microbiology are contributed by scientists from Europe, UK or North America with the exception of a single chapter on yeast plasmids from a Japanese laboratory. A chapter on the biographical sketch of an eminent microbiologist traditionally found in the last few volumes of Annual Reviews seems to be conspicuously missing in the present volume. That was a nice practice because it used to provide an interesting glimpse on the ups and downs in the making of some of the better known scientists.

The range of articles in this volume covers microbial physiology, nutrition, taxonomy, structure, evolution, ecology, fermentation, industrial microbiology and plant pathology. Several aspects of immunology from malaria, tumor and influenza to the use of synthetic peptide immunogens as vaccines are also included. Chapters on cell interactions in yeast and twitching motility of bacteria are also available in the reviews. Each of the chapters is written by experts in the respective areas, and they are concisely presented. In the traditional mode, this volume is very useful for a general microbiology teacher or research worker. However, as a practicing molecular biologist, I find the present volume not particularly making an interesting reading.

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