BOOK REVIEWS

The Rhythm of Being: A Study of Temporality by Howard Trivers (Philosophical Lib. Inc., 200 West 57th Street, New York, 10019 N.Y.) 1985, pp xii 346, Price $22.50

Time or temporality has always been a baffling problem, and Man, ever since he encountered it, is both fascinated and intrigued by it. The measure of its impact on his life can be appreciated by the almost universal acknowledgement of the indissoluble link between time and the self. Indeed it could be said that throughout history, man's temporality finds its reflection in his quest for the meaning of existence.

Howard Trivers's book traces this history of Man with reference to his interest and involvement in time. The mystery of the Universe is to be measured against time. The “First Three Minutes” acquires its fascination as well as its profundity, clearly on account of its link with the time frame associated with it, even as the mystery of organic evolution is indissolubly linked with the “duration” of its happening.

Trivers examines time from both the physical as well as philosophical views and seems to endorse Einstein's view that Man's encounter with time was probably preceded by his experience with periodic occurrence of natural phenomena. Rhythms attracted his attention even before he became conscious of time.

Man's consciousness of time has another dimension too. It is not often either recognized or admitted that man's religions have grown out of his awareness of time and his appreciation of its effect on him. Decay and death are phenomena related to time and the anxiety and concern caused by them are the basis for the religious attitude of man, which, in effect, is a “desire to overcome the destructive process of time”.

The historical development of the concept of time in man makes interesting reading in Trivers's book. Egypt, China, Mesopotamia and Greece figure extensively. India is hardly mentioned, and it is a serious omission. The Rig Vedic hymn of Creation is highly illustrative of the Aryans' concern with time, even as the involvement of the later Upanishads with it. The Puranas too have many references. It is the reviewer's view that the Hindu notion of temporality was conceptualized earlier than that of the other cultures.

Trivers's field of interest is philosophy and his competent appreciation of the scientific aspects of time and duration is a noteworthy feature of his book. Indeed, it is a phenomenon of recent times that themes of study which not so long ago were regarded as special preserves of science are now being seriously countenanced by philosophers, for example, Evolution, and these are the better for it. For, it is only the philosopher that dare ask the question, WHY? And any inquiry with this question is all the better for it.

Trivers brings to bear on this study his vast experience as teacher, thinker and diplomat. The seriousness of his purpose and pursuit is more than clear by the thorough and meticulous treatment of each theme, historical, scientific and philosophical.

B. R. SESHACHAR
Centre for Theoretical Studies,
Indian Institute of Science,
Bangalore 560012.

Annual Review of Genetics Vol. 18, 1984 by Herschel L Roman (Published by Annual Reviews Inc. 4139, El Camino way, Palo Alto, California, 94306, USA) pp 625, Price US $27/- Elsewhere $30/-. 

The reviews in this volume are mainly concerned with the genetic systems such as E. coli, yeast, maize, silkmoth, and nematode which are projected as model systems to study the development or gene regulation. The historical perspectives, gene interactions, regulation of transcription, mutation and their consequences, feed back circuits, oncogenes and gene conversions are discussed. These reviews are directed to a specialised group rather than of general interest.

The positive control of initiation of transcription in bacteria and the involvement of positive regulatory elements are reviewed. If the promoter sequence does not resemble the consensus sequence in most of the E. coli promoters, regulation by positive activator for transcription is expected. Promoter sequence close to consensus sequence indicates regulation by anti-terminator or other means and post-transcriptional mechanism. The heat shock proteins required for the bacteria, to grow at all temperatures, are regulated by the feed back circuit. The general pattern and time
course of heat shock response are similar to human, finding strong homology among the heat shock response. The review on population genetics of *E. coli* deals with classification, history, pathogenesis and genetic variation. Studies on the globin and mutants of haemoglobin contribute substantially to our understanding of basic genetic principles and application of biochemical genetics to analysis of diseases. However, gene therapy is still a vision of the future.

The mouse histocompatibility (MHC) is emerging as a very useful model system for the study of eukaryotic gene interactions, regulation and evolution. Current studies on Class I, II and III MHC genes, with special reference to gene conversion are discussed. The large size, ease of rearing, hormonally controlled metamorphosis, simple body plan and few cell types of silkmoth are advantageously used to study the development. The patterns of cell division, developmentally controlled genes and cell lineage are discussed at length. Yeast serves as a model system to study eukaryote gene expression. The genetic regulation of the two complex biosynthetic processes in yeast, amino acids and phospholipid biosyntheses are reviewed. In amino acid biosynthesis, coordinate regulation ensures the delivery of adequate quantities of amino acids for ongoing protein synthesis. In the case of phospholipid biosynthesis, the regulation appears primarily to control the production of inositol and choline containing lipids to maintain membrane charge. Proteases play a major role in the life cycle of yeast. Products of proteolysis are reutilized especially under conditions of nitrogen starvation. Several proteases, whose functions are detected are cloned and studied.

The review on maize genetics deals with the early history based on the rediscovery of Mendel’s laws. The personal impressions and experience of the author are presented in a lucid manner. Many topics of current interest such as transposable elements are purposely avoided. However, transposons are reviewed in another chapter. They form an important class of mobile elements, that provide and regulate their own movement. The parasite and null hypotheses about transposons are discussed.

Trisomy is very common in man. The source of the additional chromosome is mainly due to an error in the first meiotic division. Maternal age is the main contributory factor for this phenomenon. Many environmental factors and agents in daily life contribute to this problem. The review on synaptonemal complex is the most extensive one with excellent illustrations. The meiotic chromosome pairing, cross over, gene conversion and chromosome disjunction are discussed in detail. Homologous and non-homologous pairing in synaptonemal complex formation are discussed. The isolation and characterization of mutant animal cells in glycosylation are reviewed. They are invaluable tools for the determination of pathways of carbohydrate biosynthesis and their regulation.

Little is known about the mechanism by which oncogenic mutation arises in somatic cells with the possible exception of proviral mutation. The review summarizes the nature of recently defined mutations of cellular oncogenes and the evaluation of the genetic changes and biochemical mechanism of oncogenesis. However, this is very much restricted because of the complexity of oncogenesis. Several reviews on the structure, origin and the biochemical functions of oncogenes have been already published.

J. D. PADAYATTY

Department of Biochemistry, Indian Institute of Science, Bangalore 560012.

Pesticides for Plant Diseases by A. N. Sudarshan Rao
(Published by Subhas Publications, Subhas Stores, Avenue Road, Bangalore 560002), pp. 31. Price Rs.10-00.

According to the author this is a catalogue of proprietary compounds of leading manufacturers for the benefit of research workers in plant pathology. I am afraid this objective is not fulfilled nor is it a specialist’s manual as claimed in the author’s note. There are many printing errors and inaccuracies. The chemicals mentioned and their trade names which are mostly foreign will be of very little use for the researchers in India. Some popular fungicides like FYCOP are not seen in the text. Many fungicides like Paclobutrazol, diclofenacet, teclofalam, cyprofuram, mepronil have not found a place in the booklet. The common names and the trade names have not been properly aligned in print making the list of doubtful utility.

V. AGNIHOTHRUDU

18/1, First Main, Jayamahal Extension, Bangalore 560046.