

written by Brazilian authors. Thus, the volume provides a comprehensive view of current interests in Brazil in the field.

While demonstrating a high standing with respect to

methods and concepts, the book may suffer from the extreme diversification of the research fields represented by the short and well-written chapters.

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The Molecular Basis of Circadian Rhythms

Edited by J. Woodward Hastings and H.-G. Schweiger
Dahlem Konferenzen; Berlin, 1976
462 pages. £ 15.50, DM 75.00, \$ 27.50

One way of defining a circadian rhythm is 'an oscillation with a period of about 24 hours'. Since there is a five year periodicity for conferences, summer schools etc. on this topic one can only conclude that such gatherings must be subject to entrainment by a non-circadian Zeitgeber.

Nevertheless if one masters the hyper-jargon of the subject this latest volume, the report of the Dahlem Workshop held in Berlin in November 1975 should make many researchers consider the basic physiological status of their experimental organisms more circumspectly. Commencing with a retrospective review of the nature of circadian clocks, six Workshop group reports follow covering:

- (1) Basic features
- (2) Mathematical problems
- (3) Regulation at the enzyme level
- (4) Participation of membranes
- (5) The role of genes and their expression
- (6) Other types of periodic systems

The primary problem which faced workers in this area a decade ago, namely to define in molecular terms the nature and operational mechanism of the 'biological clock', remains ever present ten years later in the accounts brought together by this publication.

At best the experimental data collected so far, be it fluctuations in enzyme activities, the phase changes induced by either protein synthesis inhibitors, impairing membrane function or inhibiting phosphodiesterase, appear to be the modulations of processes controlled by the clock and not the fundamental basis of it. For example present knowledge does not even enable an answer to the question as to whether a single common molecular basis exists for the various circadian rhythms known, although such an assumption underlies a considerable amount of the current research work in this fascinating and yet tantalising field. Warnings are sounded however about possible convergent evolutionary pressures resulting in the existence of functional isomorphisms with different underlying physiological mechanisms.

Sections 3, 4, and 5 have obvious interest to biochemists interested in control mechanisms. Some of the circadian phenomena described in the other sections also present a somewhat different view of the regulatory facets of biological systems to that commonly found in orthodox text books and are worth reading for this alone, providing the reader is prepared to see the problems stated rather than the answers to be given.

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