

BOOK REVIEWS

J. W. MOULDER: **The Biochemistry of Intracellular Parasitism**. University of Chicago Press, Chicago, 1962. pp. 176, 29 illus., 13 diagrams, 8 tables, \$6.00.

THIS monograph is an excellent summary of the available information on the biochemistry of the host cell-parasite interrelationships. The book is not a compendium of the literature on intracellular parasites as the title may suggest, but rather is an exhaustive discussion of four groups of obligate intracellular parasites. After an introductory chapter defining the phenomenon of parasitism and intracellular parasites in general, chapters are devoted to the malarial parasites, the rickettsiae, the psittacosis, lymphogranuloma venereum group, and the pox viruses. In each chapter, the growth, morphology, chemical composition and the metabolic capabilities of the parasites are reviewed. This information is correlated in an attempt to define the biochemical defects which limit the parasite to the intracellular environment and, further, to relate the biochemical activity to the pathogenesis of the disease produced by the parasite.

Moulder has successfully separated the "wheat from the chaff" in this monograph. By concentrating on pertinent data, he has produced an easily read narrative on each of the four parasitic groups. Biochemical reaction schemes and chemical structures are thoughtfully supplied when detailed explanations are necessary. Deficiencies in our knowledge of these parasites are repeatedly pointed out. The new interpretations which Moulder makes from the existing data provide stimulating reading of a long neglected subject. The book is highly recommended for workers already in the field of intracellular parasitism and should introduce new concepts to scientists interested in the general phenomenon of host-parasite relationships.

B. S. TEPPER

The Adrenal Cortex (*Brit. Med. Bull.* **18** (2) 1962), edited by F. T. G. PRUNTY. London, The British Council, 20s.

THIS issue of the *Bulletin*, comprising sixteen articles, maintains the expected high standard, and will be of particular help as a "refresher course" in the rapidly advancing subject of adrenocortical physiology. References are cited for 1962 and even for 1963! But M. Saffran's reference to "extra-adrenal effects of ACTH" is now out-of-date.

J. K. Grant's lucid article on the biogenesis of adrenal steroids mentions one unresolved problem—the essentiality of NADPH₂ (TPNH) for the hydroxylation of progesterone. Among other puzzling features are the role of the C₁₉ steroids ("adrenal androgens"), and the predominance of corticosterone in the adrenal secretion of the rat as mentioned in the Introduction by Prunty although not in the article on comparative aspects by Chester Jones and co-authors. The apparent "permissive" actions of adrenal steroids, as shown in pioneer experiments by Ingle and others, are rather neglected, as is the role of ascorbic acid in adrenocortical function. There is no unified discussion of the adrenal cortex in relation to cancer, or of the theories built up around "stress", although the latter subject is touched on by W. E. Balfour in connection with domestic animals, and by T. Symington in connexion with the morphology and cytology of the human adrenal. In general, however, there are few serious omissions.

In the chemically oriented article by B. A. Hems there is a welcome appraisal of the validity of bioassays. The articles on the role of cortisol (J. C. Beck and E. E. McGarry) and on actions at the cellular level (I. E. Bush) are rightly sceptical about effects obtained only with high doses. In the former article it is argued that the term "glucocorticoid" is a misnomer. The latter article deprecates, rather sweepingly, the usefulness of *in vitro* work with tissues from adrenalectomized animals, and moreover neglects the evidence that adrenal influences on protein metabolism in liver may be converse to those found peripherally. Nevertheless, the article is a useful survey of a difficult field. The role of blood corticoid levels in controlling ACTH secretion is minimized in Saffran's article, but evidently needs further study since it is crucial for the interpretation of human disorders as discussed by other contributors. The article by R. V. Brooks is misleading in a minor respect: a casual reader might get the impression that Cushing's syndrome is always due to an adrenal tumour. Addison's disease is given little attention except in C. H. Gray's useful contribution on the investigation of human disorders. Aldosterone is well represented by three contributions, and it is evident that the control of its secretion is as yet poorly understood.

There is clearly much of value in this issue of the Bulletin, both to clinicians and to workers engaged in basic research.

E. REID

G. B. WILSON and J. H. MORRISON: **Cytology**. Reinhold Publishing Corporation. Chapman and Hall Ltd, London, 1961, pp. 297, 60s.

THE aim of the authors is to give the students in the various fields of science a workable interpretation of basic facts, concepts and certain problems which emerged from recent studies in cellular biology. The 12 chapters of the book deal with different components of the cell. The constituents of cytoplasm, and nucleus are presented from various aspects; their morphology and function is described, their behaviour during division, and under the influence of radiation or drug action, is discussed. The book is well written and lavishly illustrated, it is strongly recommended to all interested in the recent achievements of cellular biology.

But the book is particularly well suited to the requirements of those biochemists whose intent is to use the cell as an experimental material for study. They will find much basic information; the chemistry of the cell is simply and clearly explained; the molecular organization of proteins, nucleic acids, lipids and carbohydrates are described in relation to cell morphology and function. The authors also draw attention to the importance of inorganic cell constituents in enzymatically controlled reactions. One of the most instructive chapters deals with the structure and function of the various cytoplasmic organelles. By the use of numerous excellent electron microscope photographs and original diagrams, the authors describe *mitochondria* and their role in respiration and in differentiation, and draw attention to the important fact that in metabolic interaction, mitochondria represent the most efficient energy-producing system within the cell. *Plastids*, the centers of carbohydrate synthesis and metabolism are presented in a similar manner. The schematic representation of photosynthetic reaction is a useful aid for understanding their role in the cytoplasm. *Lysosomes*, *microsomes*, and the *endoplasmic reticulum* are also described, and their function is briefly presented. This interesting chapter is followed by a list of more than a hundred references, relevant to this aspect of cellular biology.

Another very informative chapter deals with the different cytological techniques e.g. staining, microscopy, autoradiography, ultra-violet absorption, methods of isolation of cell constituents, etc. The book contains a Reading List of important articles with brief annotations about their subject. There is an up-to-date bibliography after each chapter, and an author and subject index. *Cytology* is a valuable book for introducing basic cytology, so that it is regretted that the high price may prevent poor students from acquiring this rich source of information.

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