

the price is unusually low. I highly recommend this book to students and scientists interested in this relatively new, rapidly developing area of biology.

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MOLECULAR ORGANIZATION AND BIOLOGICAL FUNCTION, John M. Allen, Ed., 243 pp., Cloth-\$9.00; Paper-\$5.00, Harper and Row, Publishers, New York, 1967.

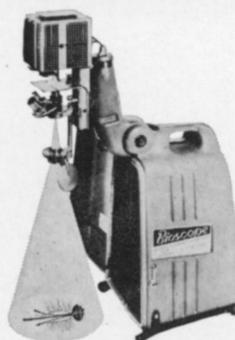
This book contains eight papers by as many contributors. All the articles center around the title of the book. John M. Allen, the editor, is at his best in the preface. He does better than the title suggests for he traces the direction taken by biology in the last decade. Sensing the drift of thought, Allen with sure broad strokes starts the deep running tide. The crux of the direction as he sees it is that in the biological sciences both cellular structure and function have been progressively "molecularized."

The first essay by C. B. Anfinsen explains in very clear fashion how protein tertiary structure is determined by the primary amino acid sequences. Alexander Rich then describes how protein synthesis is thought to be carried out by the flow of ribosomes on polycistronic messengers. Now that we have arrived at an understanding of how proteins are folded and sequentially formed, the biological function of the T-even phages is considered in relation to their molecular organization by T. F. Anderson. The biological membrane, being the fundamental structure of the cell, is presented in a very critical and carefully documented paper by J. David Robertson. In addition to using the electron microscope to support his thesis of the unit membrane, he further substantiates it by his X-ray diffraction studies. In order to move to a higher order of structure A. L. Lehninger correlates the ultrastructure of the chemical respiratory assemblies necessary to carry on active oxidative phosphorylation. L. Bogorad describes the constant presence of lamella in plastids and the unresolved problem of how this relates to photochemistry and electron transport. In this review he also points out other intriguing problems concerning the development of the plastids and the qualitatively different DNA found in them. The visual receptors are reviewed by J. E. Dowling. He points out the relationship found in chemical studies which suggest that a substantial portion of the membrane-limited discs of the outer segment visual cells may be visual pigment. The final article is contributed by I. R. Gibbons in which he seeks

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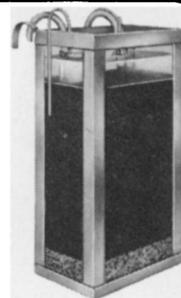


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to show the relationship of the ultrastructural patterns of cilia and flagella with a class of proteins associated with cell motility.

As each article unfolds, the author takes pains to point out the areas which need further clarification or are as yet only working hypotheses. The most surprising part about this book is the coherence between the rather diversified topics covered. This is even more surprising when one considers each chapter was written by a different author. I think this clearly demonstrates that at least on the molecular level a unity is still found in biology and this surely makes this book worthwhile reading.

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FUNCTIONAL ORGANELLES, John H. Morrison, 128 pp., \$1.95, Reinhold Publishing Corporation, New York, 1966.

The purpose "to acquaint the beginning student with some of the established facts concerning the function of the various organelles" is broad enough so that the author should not be subject to criticism that he did not fulfill the purpose. Chapters 2 and 3 on Photosynthetic Organelles and Mitochondria are fairly well done. The only question being whether they are suitable for the beginning student—high school, undergraduate, graduate, majoring in biology?

The remainder of the book serves primarily to detract from the two previously mentioned chapters. The space devoted to showing "how the cells' molecular machinery is put together at the organelle level to facilitate the orderly operation of these structures and the cell as a whole" is such that definition of necessary terms, not always adequately done, is all that is really accomplished. The result is that for the most part the book is difficult to read, and the reviewer would not recommend the book for beginning students.

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THE STRUCTURE AND FUNCTION OF ANIMAL CELL COMPONENTS, P. N. Campbell, 153 pp., \$3.45, Pergamon Press, L.I., New York, 1966.

Because of the close relationship of physics and biochemistry to the biological sciences (cytology in particular) which has become evident in recent years, a book of this type is timely and appropriate. The electron microscope has revealed a variety of structures formerly unknown to the cytologist, while the biochemistry laboratory has contributed a wealth of informa-



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