

Inside the Living Cell: Some Secrets of Life. By J. A. V. Butler. 174 pp. Basic Books, Inc., New York, 1959. \$3.50. *Reviewed by R. Bruce Lindsay, Brown University.*

THE part which physical science is playing in helping to elucidate the mysteries of life is itself no longer a secret, but it is well to have these contributions emphasized from time to time in clearly written popular books like the one under review, the work of a professor of physical chemistry in the University of London.

Professor Butler has a fascinating story to tell of the nature of life, starting with the chemical composition and behavior of the living cell and winding up with the universe, which is after all a description of human experience through the agency of the greatest collection of cells in the human organism, namely the brain. This provides considerable scope for his narrative and he makes the most of it. He describes how cells divide and how the mechanism of heredity is provided by the gene theory; he describes the effects of radiation on cells and mutations, the organization of cells into large-scale organisms, the hormones or chemical messengers from one group of cells to another, the origin of life, and photosynthesis and the specialization of cells.

Four chapters are devoted to the brain and the important position it occupies in the contacts between the human organism and its environment. Feedback in the nervous system and cybernetics come in for attention and the recent attempts to look upon the brain as a calculating machine are discussed. The final two chapters deal with aging and death and life in the universe as a whole. The author reaches the interesting conclusion that in spite of all the arguments which have been adduced in favor of increasing the life span, on the whole and on the average, human beings now live long enough!

At every stage the cooperation of physics and chemistry in the task of understanding the nature of life is clearly brought out but with a minimum of complicated biological terminology. This book can be heartily recommended to physical scientists who are looking for a popular but authoritative discussion of problems of modern biology.

Advances in Biological and Medical Physics, Vol. 6. Edited by Cornelius A. Tobias and John H. Lawrence. 639 pp. Academic Press Inc., New York, 1958. \$16.50. *Reviewed by Joseph G. Hoffman, University of Buffalo.*

A DOZEN chapters by nineteen contributors make this a substantial survey of widely diverse topics. Even the four chapters dealing with the effects of ionizing radiations show this diversity since they cover radiation induction of lysogenic bacteria (by H. Marcovitch and R. Latarjet), effects of radiation on tumors (by O. C. A. Scott), fallout from nuclear weapons tests (by C. L. Dunham), and basic mechanisms of cell injury (by P. Howard-Flanders). Of the many highlights in these chapters the discussion of fallout will arrest the reader's attention with its statements of optimistic facts about world-wide contamination. The brief re-

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