brated the study of such populations, but a definitive discussion of their determinants remains to be written. Perhaps this must wait on the accumulation of data, for some of the most critical, especially concerned with the ecological relationships of breeding groups, are lacking. Nevertheless, summation and discussion of such as do exist would greatly advance our understanding of the *processes* of evolution.

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Reviewed in Brief

Cell Physiology and Pharmacology. J. F. Danielli. New York: Elsevier, 1950. 156 pp. $3.00.

For some time it has been apparent that the field of pharmacology needed to be reexamined with a view toward reducing as many experimental observations as possible to the cellular level. Such an approach was attempted by A. J. Clark in 1929, and his book has remained a classic in the field of cellular pharmacology.

In this book, which resulted from a series of lectures given at University College, London, Professor Danielli reexamines the possibilities for physicochemical explanations of the mode of action of drugs at the cellular level. Many may find the analysis too speculative, and surely there is much one could criticize in some of the postulated mechanisms. One cannot deny, however, that the possibilities for the prediction of the pharmacological action of certain types of reagents is quite nicely demonstrated here. If the book does nothing more than cause commercial pharmacologists to give consideration to theoretical possibilities of predicting drug action over the hit-or-miss method of trying thousands of compounds, it will have served a very useful purpose.

The chapters are as follows: The Cell as a Physico-Chemical Unit, Possible Action of Drugs on Surfaces, Membrane Permeability and Drug Action, Enzymes and Drug Action, The Action of Narcotics, and Responses of Cells on the Biological Level.

Pneumoconiosis: Beryllium, Bauxite Fumes, Compensation. Arthur J. Vorwald, Ed. New York: Hoeber, 1950. 659 pp. $7.50.

This volume, dedicated to Dr. Leroy U. Gardner, is a detailed record of the Sixth Saranac Symposium, held September 29 to October 3, 1947. In 1934, Dr. Gardner instituted the first of the series of Saranac Symposia in recognition of the need for informal discussion of problems resulting from the inhalation of dust—not only changes in the lungs (pneumoconiosis), but the industrial and legal phases as well. During the war years a new disease, which appeared to be caused by the inhalation of dust containing beryllium, was recognized among industrial workers. Concurrently with these observations, attention was directed to a disease entity occurring among workers exposed to the fumes arising from bauxite furnaces. The industrial uses of beryllium were so far-reaching that the symposium was organized to obtain a comprehensive and authoritative exposition of present knowledge concerning the disease, its control, and the social and medicolegal implications. Thirty-nine papers were presented, and the discussions evoked are included in the volume. Twenty-nine cover the various aspects of the beryllium problem, 3 are devoted to the subject of bauxite, and 7 contributions are grouped under the heading "Compensation for Occupational Disease." A bibliography of 684 references brings the pertinent literature concerning beryllium up to January 1950.

The approach to the solution of the problem has been an outstanding example of cooperation between science and industry. It is hoped that this series of symposia will be continued and that the deliberations will be presented in the same effective manner as this one has been.

Viruses 1950. M. Delbrück, Ed. Pasadena, Calif.: California Inst. of Technology, 1950. 147 pp. $2.50.

This small volume contains the proceedings of a conference, held at the California Institute of Technology, March 20–22, 1950, on the similarities and dissimilarities among viruses attacking animals, plants, and bacteria, respectively. There are 12 short essays on subjects ranging from bacteriophage to immunological properties of plant viruses. The concluding article, covering 47 pages, is: "A Syllabus on Procedures, Facts and Interpretations in Phage." The book is well printed and well edited. It can be unhesitatingly recommended to all interested in obtaining fundamental knowledge of the viruses.

Scientific Book Register

Advances in Radiochemistry and in the Methods of Producing Radioelements by Neutron Irradiation. Engelbert Broda. New York: Cambridge Univ. Press, 1950. 152 pp. $2.75.

Fundamentals of Acoustics. Lawrence E. Kinsler and Austin R. Frey. New York: Wiley; London: Chapman & Hall, 1950. 516 pp. $6.00.

New Atoms: Progress and Some Memories. Otto Hahn; W. Gaade, Ed. Elsevier, 1950. 183 pp. $1.75.

The Flight of Thunderbolts. B. F. J. Schonland. New York: Oxford Univ. Press, 1950. 152 pp. $3.00.

Textbook of Intermediate Plant Science. George B. Cummins *et al.* Minneapolis, Minn.: Burgess, 1950. 222 pp. $3.25.

Cybernetics: Circular Causal, and Feedback Mechanisms in Biological and Social Systems. Transactions of the Sixth Conference, March 24–25, 1949. Heinz von Foerster, Ed. New York: Josiah Macy, Jr. Foundation, 1950. 209 pp. $3.50.

Introduction to Algebraic Geometry. W. Gordon Welchman. New York: Cambridge Univ. Press, 1950. 349 pp. $4.50.

Modern Chemical Processes. A series of articles describing chemical manufacturing plants by the editors of *Industrial and Engineering Chemistry.* New York: Reinhold, 1950. 222 pp. $4.00.

Machine Shop Methods. Lorus J. Milne. New York: Prentice-Hall, 1950. 376 pp.