

Reviews

HOWARD-JONES, DR. N. (Editor). *Applied Biophysics*. A Symposium. Chemical Publishing Co., Inc. Brooklyn, N. Y. vii + 293 pp. illus. 1949. \$6.75.

Applied Biophysics is a symposium by 17 leading British scientists contributing to a survey of the physical methods used in medicine. As many of the diagnostic and therapeutic procedures in medicine and surgery are based on the elementary principles of physics, the work of the radiologist, physiologist and biochemist are correlated with the physicist in the speciality of biophysics. As Dr. Andrew H. Dowdy, of Rochester, New York, so aptly states in the foreword, "the biophysicist is frequently a catalytic agent, facilitating the successful progress of a coordinated research program."

This 293 page book brings the specialized research of many authorities towards the solution of such specific problems as the biological effects of penetrating radiation, the biophysical factors in drug actions, an extremely interesting chapter on genetic effects of radiations, several chapters on the technical methods in X-Ray and radium therapy and a chapter on histological analysis of radiation effects by Alfred Glucksmann, M.D., to mention a few.

This book would be very appropriate for high school and college libraries. Physiologists, biologists, and physicians will enjoy the review of old and the presentation of new biophysical material.

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MARX, DAVID S. *Learn the Trees from Leaf Prints*. The Botanic Publishing Company, Cincinnati. 42 pp. illus.

This is the 7th printing of Mr. Marx's collection of leaf prints from 194 common trees of the Central and Eastern states. The prints are arranged by related groups on 34 plates so that it should be possible to recognize almost any leaf found in these regions by comparison with the prints. The purpose of the book is to supplement personal instruc-

tion where available and to make the study of trees attractive for those who find more technical information difficult and tedious. Most of the prints are extremely distinct and the venation is well demonstrated. They represent typical leaves from the trees and in many instances indicate the texture of the leaf as well as its shape and margin. It would have been helpful for those not acquainted with the technique had Mr. Marx described his procedure in the preparation of the prints.

The plates might possibly have shown up to a better advantage if the labeling had been done with more precision; however, the author may have wished to produce the effect of a student's notebook. The addition of the scientific names of the trees would have made the book more suitable for use in college classes, but for high school or general use this is not necessary.

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ANDERSON, EDGAR. *Introgressive Hybridization*. 1st ed. John Wiley & Sons, Inc., New York. ix + 109 pp. illus. 1949. \$3.00.

This volume points up an important problem of biology and shows the way for observing biologists to contribute to its solution even though they have little equipment and no access to a laboratory. The problem deals with speciation of living things, how this speciation came about and the methods by which it is now molding living things. It discusses the intimate interrelations between the habitat and the genes accumulated by the living forms which do or are to occupy this environment. It shows how new genes may be introduced into the species by hybridization and be sifted for their fitness.

Introgressive hybridization is a name given to the process when the introduced genes enter the species first through the direct crossing of two dissimilar species and then hybrids breed back for many generations to one or the other of the parent species. Examples of natural experiments of this type are cited in *Iris*, *Helianthus*,

Lactuca, etc. The book is given over to a discussion of the ecological and genetic bases for this introgression,—its effects on finite population and on evolution, the special techniques thus far developed for its detection and analysis, and on the need for the study of the methods of introgression. With a little practice, all can contribute to these studies by recognizing and recording the peculiarities of plants and locations in ever-varying natural habitats. By the methods outlined, it is possible to apply critical tests and make valid estimates of the part introgression is playing in shaping the living world.

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MAVOR, JAMES W. *A Brief Biology.* The Macmillan Company, New York, 427 pp. illus. 1949. \$4.00.

This brief general biology follows in style and method of presentation the more complete and detailed *General Biology* of Mavor. The text has been divided into five major portions, The Nature of Life, Plant Life, Animal Life, Human Anatomy and Physiology, each relatively independent of each other so that the order may be taught at the instructor's discretion. The plan and the sequence of topics is comparable to that of the longer text. Especially fascinating and well written are the ideas and implications presented in the material covering The Development of the Individual, Heredity, Environment and Organisms, Evolution, and Early Man. Unusual to most general biology texts is a rather thorough over all view of life in a fresh water pond with a presentation of some of the relationships between plants and animals.

The comprehensive glossary not only includes the pronunciation of words but also indicates the original derivation of the words. The appendix consists of a synoptic table of the plant and animal kingdoms. The number of pages on which illustrations occur are printed in bold face type in an accurate index. The photographs used are excellent;

frequent illustrations from other sources are provided and many diagrammatic drawings are an aid in assimilating the contents of the text. Diagrams to illustrate particular phases of evolution in plants and animals, along with comparative illustrations and charts, help to establish general concepts and relationships.

As a whole, the material is presented in a clear and concise manner with explanations of the different phenomena written for the purpose of easy digestion; however, some chapters seem to be far too technical for the average biology class. More emphasis could be placed on general views and principles with less detail on structural parts, particularly concerning the chapters in part II on plant life and part III on animal life, whose content would be better for general botany or zoology texts respectively. For a course which maintains a laboratory with dissection, these chapters contain enough material to serve as a laboratory guide. *A Brief Biology* can be considered as a text which will stimulate considerable thought for a one semester general biology course. The learning of much of the technical material may or may not be pursued according to the prerogative of the instructor.

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DE TURK, E. E. Freedom from Want. Chronica Botanica Co., Waltham, Mass., 1948. *Chronica Botanica*, Vol. 11, No. 4, pp. 207-284. illus. \$2.00.

This symposium is a survey of the food needs of the world and the present and future possibilities for meeting those needs. The separate papers, dealing with population and food supply, world soil and fertilizer resources, crop production, animal production, the economics of freedom from want and the obligations of science. The articles are well written and coordinated with each other and with the main theme. The illustrations and tables add much to the usefulness of the book, which includes a wealth of information not easily located elsewhere.

JOHN BREUKELMAN