BOOK REVIEWS

BIOLOGY

BIOLOGICAL PRINCIPLES AND PROCESSES (2nd Ed.)

C.A. VILLEE and V.G, DETHIER

W.B. Saunders Company, Philadelphia, 1976, pp. 999, ISBN0-7216-9029-7

With the abundance of college-level textbooks of biology, it is somewhat difficult for a student or indeed a teacher to choose a few on which to base the study. As recent progress has been made largely in the fields of molecular and cell biology, an important criterion for judgement is how well the physico-chemical concepts have been integrated into the text, presenting biology not only as a conglomeration of facts and information but as an integral part in the study of nature as a whole. This criterion has been well satisfied in this book, which places emphasis not on intricate biological information as such but on the underlying principles and general aspects both of structure and function. The length of the book allows the authors to do so without ignoring the descriptive parts of biology, eg., presentation of various kinds of organisms, although their relative significance is less compared to the more classical textbooks.

The book is divided into seven parts: cell and molecular biology, genetics and evolution, the kinds of organisms, the biology of organisms, behavior and its biological basis, reproductive biology and population biology. Each part contains a number of chapters and is generally well presented, with the exception perhaps of the last part which is relatively brief and could have been integrated with the rest of the text. The part on behavior and its biological basis presents a good example illustrating the approach of this book. Starting with neural and hormonal control systems, the book deals with various aspects first of the basis of behavior, then finally with behavior itself in increasing complexity. The various parts are not dissociated from one another but mutually connected on many topics. For example, the concept of food chains is introduced first in relation with the efficiency of cellular energy utilization (p. 144), elaborated in the chapter on biological interrelationships (p. 314), and finally discussed in the context of energy flow in ecosystems (p. 924). This treatment allows the student to recall a particular topic as well as to appreciate its many facets in biology.

The book contains an appendix on the classification of living things, and a glossary of biological terms, both of which provide convenient sources of reference for the user.

Yongyuth Yuthavong

ZOOLOGY

ZOOLOGY LABORATORY MANUAL

ART JAMMEK

Thai Watana Panich, Bangkok, 1977, in Thai, pp. 127, 35 baht

This small book for laboratory exercises is written in Thai in simple and readable style. As indicated by the title: Zoology Laboratory Manual, this book deals with structure and anatomy of animals throughout the kingdom. It begins with unicellular organisms e.g. amoeba, euglena etc. and runs through many well known invertebrates from sponge (Phylum Porifera) to starfish (Phylum Echinodermata). The only chordate treated in this manual is fish. This book would be most welcome, should other common vertebrates such as shark, frog and rabbit be included in the text. In each chapter there is an introduction to the subject which will be helpful to students and perhaps to instructors as well to familiarize the important features and characteristics of the animals to be studied. Most of the topics have assignments for drawing from the live and or preserved specimens and space for making additional notes. One attractive feature of the manual is suggestions for audio-visual aids such as film loops and movies. Suggestions for further readings is also included at the end of each chapter. There are a large number of simplified drawing diagrams with clear labelling. With all these features, I feel that this book will be of great help in laboratory classes. As stated by the author, it is intended for a course in general zoology at first year university level and teacher colleges. This book will serve well for that purpose. Some of the topics can also be selected for uses in certain exercises in a general biology course.

Visut Baimai