

selected with care and good judgment, then organized to show sequential magnifications of the same field from light microscopy to low-magnification electron microscopy as well as medium- and high-magnification electron microscopy. This pleasing arrangement of large, clean, well-selected photos in immediate juxtaposition with the captions and the text is certain to satisfy the student who desires both a text and an atlas.

There are good histology textbooks and there are good histology atlases; each type of publication is well-known and easy to find. However, this new book by Rhodin is a singular accomplishment, succeeding in combining pictorial and verbal descriptions of animal and human tissues. There are no line drawings, schematic diagrams, or color plates, but the high quality of the photographs makes these unnecessary and fosters consistency throughout.

There is no doubt that every secondary-school library will want this book as a reference. For the high-school instructor and his students, this can become an indispensable tool for clarifying and elaborating microscopic structure. At least some of the large and lucid photographic plates can find a place in biology and other science courses at any level of sophistication. Remember, every other page is filled with large, lucid photographs; consequently, one gets a very attractive and serviceable format for what is a moderate price these days.

*Raymond E. Henzlik*  
Ball State University  
Muncie, Ind.

**INTRODUCTION TO MOLECULAR EMBRYOLOGY**, by Jean Brachet. 1974. Springer-Verlag, New York. 172 p. \$5.90 (softback).

In this book, the author poses the two main questions of embryology: how can the fertilized egg, with DNA from male and female parent, give rise to all the organs of the adult; and how can a limited number of cells, in a given time and place, differentiate into specialized tissues and organs? Reviewing the classical work of first the descriptive and then the chemical embryologists, Brachet discusses the investigations of cell biologists, geneticists, and molecular embryologists that have contributed to our present state of knowledge in this intriguing and important area of research. Further, he points directions in which research of the future may proceed.

Brachet is himself perhaps the foremost authority in this field, and his expertise is apparent throughout the volume. The material is beautifully organized and clearly presented. In reviewing the work of various investigators, he fails however to give exact re-

ferences; this becomes a frustration for the person who would like to find the original papers. He includes a bibliography at the end of each chapter, but these are not complete.

The advanced undergraduate or beginning graduate student should find this book most useful. It could be used as a supplement in a traditional course in embryology or as background for a research project.

*Margaret L. Watson*  
Simpson College  
Indianola, Iowa

**THE SHELL MAKERS: INTRODUCING MOLLUSKS**, by G. Alan Solem. 1974. John Wiley & Sons, New York. 289 p. \$9.95.

The serious shell collector who has always wanted to know what manner of creature produced a shell will welcome the publication of this book. It is not about shells, nor is it a guide to collecting; it is about the shell makers. The author deals with the second largest group of animals, the mollusks, describing each kind as a living functional unit that has evolved and faced many problems in its developmental history. Emphasis is placed on anatomical development in relationship to ecology.

The three introductory chapters, "Understanding Variety," "The Molluscan Patterns," and "From Life's Start to Shells" include the importance of mollusks to man, their diversity, scientific literature concerning mollusks, major groups, and origins. The remaining chapters deal with the habits, anatomy, and evolution of the various molluscan groups. The author includes an interesting discussion on endangered molluscan species—with man and his reservoir-building activities the main villain. The final chapters present an interesting block of topics with particular emphasis on the ecology and habits of land mollusks.

Format, pictures, diagrams, and color photos are well done and make this a valuable book for amateur shell collectors and for teachers who require anecdotal information about mollusks.

*David E. Kidd*  
University of New Mexico  
Albuquerque

**INSECTS IN FLIGHT**, by Werner Nachtigall. 1974. McGraw-Hill Book Co., New York. 158 p. \$12.95. Translated from German by H. Oldroyd, R. Abbott, and M. Biederman-Thorson.

This is neither a textbook nor a laboratory manual. The author says it is "a book of popular science in the boundary between biology and physics." It deals with the biophysics of

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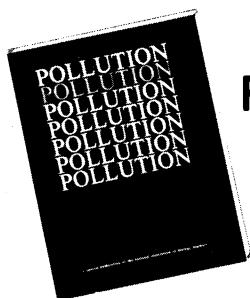
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insect flight in 44 short chapters that describe basic structure, flight patterns, mechanics and chemistry of flight, flight instrumentation, and so on. Here and there the author takes a brief detour into some tangential area. His chapter entitled "Watching Insects for Pleasure" quotes several famous naturalists, whose descriptions of insect behavior border on poetry. One chapter explains how a fly lands on the ceiling. Another tells of migratory flights of locusts, butterflies, and other insects.

This is hardly a book for general reading by high-school students. It is more appropriate for the graduate student in biophysics. The author states that he is hoping to "convey to the reader the joy of discovery that comes to research workers." To do this, he describes some exquisitely delicate techniques used for the experimental study of flight. It is highly unlikely that any high-school pupil can find a science project here. The techniques are too difficult, the equipment too cumbersome and too costly. For example, the author assembled \$30,000 worth of equipment to study muscle contraction in a 10-cent grasshopper. Then he used several hours of time at the \$5,000,000 computer center to analyze the data. In another experiment a blowfly was attached to a special suspension that allowed free movement. (How light and

delicate those joints and swivels must be!) The apparatus was placed in a miniature wind tunnel where the fly could be photographed at 8,000 frames per second. When the film was later projected at 2 frames per second, the author was able to determine the rate of wing action as well as the manner in which the wings operated during various maneuvers.

Some of the photographs are reproduced in the book as black-and-white enlargements. The sharp, clear, and instructive pictures of various insects in mid-flight are probably the highlight of the book. Unfortunately, the captions are often long and complicated. They are set in such tiny type that great concentration is required to read them. Worse still, in many cases the caption is printed on the obverse of the photo. This makes it impossible to look at the picture and read the caption at the same time. In fact, the entire book was set in type that is just a trifle small for the aging eyes of this reviewer.

Type size aside, the book leaves the reader with a sense of awe. Can a tiny insect really be such a complex flying machine? Can nature be so inventive as to produce flying mechanisms which satisfy all the basic principles of aerodynamics?

If science is a way of looking at nature, then the author has given us a

peek at one tiny corner. The reader must be left with a feeling of wonderment at what he saw in that small glimpse.

*Philip Goldstein*  
Miami, Fla.

### For Young Readers

**THE GUPPY: ITS LIFE CYCLE**, by William White, Jr. 1974. Sterling Publishing Co., New York. 64 p. \$5.95 hardback.

This book, for the most part, reads easily. The author starts with an interesting history of the guppy and its name, followed by general fish body plan, feeding preferences, environmental tolerances, reproductive cycle, and a few behavioral characteristics. There are three pen diagrams which clearly represent the information. However, the color photography, which no doubt contributes to the high cost of this small book, is often so poorly focused as to obscure the reason for its presence, especially for a younger reader. In many cases, high-quality black-and-white film could have conveyed the ideas at a much lower cost.