

# Book Reviews

## Cell and Molecular Biology

### INTRODUCTION TO EMBRYONIC DEVELOPMENT

by Steven B. Oppenheimer. 1980. Allyn and Bacon, Inc. (470 Atlantic Avenue, Boston 02210). 416 p. \$18.95.

This textbook provides an excellent treatment of the major aspects of developmental biology. It is divided into thirteen well organized, clearly written, concise, yet easily readable chapters. It contains a twenty-page glossary of terms mainly used in the text, a list of readings of primary and secondary sources at the end of each chapter, and an index.

The chapter on organogenesis stands out as particularly lucid. It is presented in six sections and covers eye development, development of nervous integration and behavior, heart development, limb development and regeneration, urogenital organogenesis, and the development of the immune system.

The first five chapters deal with gametogenesis, fertilization, cleavage, gastrulation, neurulation and germ layer formation. There are also chapters on early human development and primary germ layer derivatives; embryonic induction; mechanisms of morphogenesis, which includes a section of plants; differentiation of nucleic acids, proteins, and higher orders of structure; and a final chapter on cancer and embryology.

Throughout the book the author poses many unanswered questions and hypotheses, which the budding embryologist might test and ultimately add to our knowledge of developmental biology. The diagrams, photographs, and especially the many scanning electron micrographs are excellent.

There are relatively few minor typographical errors such as prolambium instead of procambrium on p. 281. A more serious error occurs on page 329 where the term glucagon appears instead of glycogen. Several times experimental results are given, but the experimental organism is not mentioned. The morula does not hatch out of a zona pellucida during human development; rather,

the zona pellucida degenerates and disappears. The author uses the terms isolecithal and oligolecithal as synonyms, which they are not. Also, to describe a frog egg as moderately telolecithal, is incorrect. Telolecithal refers to the polar distribution of yolk and not to the amount. The frog egg would be correctly referred to as being mesolecithal and telolecithal.

Nevertheless, the value of this book far outweighs these few shortcomings. It is an excellent introduction to developmental biology and teachers of such courses should welcome this up-to-date, authoritative, and easy-to-read textbook.

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### CELL AND MOLECULAR BIOLOGY

by E. D. P. Derobertis and E. M. F. Derobertis 7th ed., 1980. Saunders College (West Washington Square, Philadelphia 19105). 673 p. Price not given.

This textbook is an updated, extensively revised and rewritten version of the now classical *Cell Biology*. The authors recognize the inseparability of cell and molecular biology and have integrated these two fields in a very well-written, well-illustrated, and up-to-date book.

The book assumes a knowledge of organic chemistry. A knowledge of biochemistry would also be helpful as the authors only give a cursory introduction or review of the chemistry of the cell. This is demonstrated by the fact that the authors discuss the involvement of disulfide bonds in stabilizing protein quaternary structure without having given the structure of cysteine and cystine.

The discussion of cell membranes, cellular organelles, methods of study, and recent advances in molecular biology is excellent. The electron micrographs are also excellent and not seen in most other books.

In some cases graphs need a more in-depth explanation for the student to fully comprehend the experimental procedures and results leading to the graph.

A major weakness of the book is that it contains neither a unified discussion of the abnormal cell (cancer) nor a unified

discussion of viruses although a treatment of both is interspersed throughout the book. Another weakness is that it contains no discussion of the cell and molecular biology of aging.

The book is suitable for advanced undergraduate courses in cell biology that strongly emphasize molecular biology. Some other recent publications, however, are likely to be strong competitors of this book.

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## General Biology

### BIOLOGY

by Richard A. Goldsby. 2nd ed., 1979. Harper and Row, Publishers (10 East 53rd Street, New York 10022). 896 p. Price not given.

Goldsby, with the assistance of 14 "collaborating authors," has put together an excellent collegiate textbook of biology. Modern textbooks are usually big, and this one is no exception—about 2 kg and 900 pages. "Read them?," one backpack-laden student told me, "I can barely carry them!" But read them they do, to my continuing surprise and approbation.

One hundred pages are devoted to a summary of the groups of living organisms. A test boring to sample the insects found a very thin stratum, only two pages, but the salient features of their place in nature were well conveyed.

The emphasis on function at the molecular level is appropriate and well done. However, I think that with increasing experience it will over the years prove feasible to leave out much of the detailed terminology, with its crop of acronyms, and to point up the essentials in precise and brief fashion.

The organizational plan is effective. In the preface one is told what is to be said. Then it is said with a good text and somewhere between 350 and 400 pictures. A series of short essays ("Focus") scattered through the book introduce the reader to frontier or overview aspects of biology, and there are four "portfolios" of color photos.