

out this book and extensive relationships between many plasmids both within and between species are shown. The effects of the microbial world on humankind's industrial, agricultural, and medical activities are dramatically brought to the fore.

This book is unique in its field. It contains an excellent summary of the research that has been done and is continuing in this important field. The text is suitable for the advanced undergraduate and students of molecular biology genetics and medical research. There are over 40 pages of references and both a subject and author index. A glossary would have enhanced this book.

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### DNA REPLICATION

by Arthur Kornberg. 1980. W.H. Freeman and Company (660 Market Street, San Francisco 94104). 724 p. \$28.

Kornberg's successor to *DNA Synthesis* is certainly the most up-to-date treatment of a rapidly changing area. *DNA Replication* is a three-directional focus, biochemical, genetic, and physiological view of DNA replication and metabolism. An attempt is made to synthesize the literature related to DNA activities that determine the structure and function of the gene.

Approximately seven of the seventeen chapters are devoted to the enzymology of DNA. Ligases, nucleases, protein configurations, and the like are treated in detail. The reader must have a thorough grounding in biological chemistry to appreciate the depth to which the author probes the molecular level of action.

Subsequent chapters provide molecular insight into viruses, plasmids, and various organelles. The discussion of these topics might be considered superficial in comparison with the detailed treatments of replication enzymes, nevertheless, the reader is led to see similarities and differences of DNA activity in as much as it is known. Brief discussions of such topics as repair, recombination, transformation, and restriction are provided.

Although the publishers suggest that *DNA Replication* will serve well as a text for courses in molecular biology, genetics, and biochemistry, such courses would necessarily be at advanced or graduate level. The book is an excellent reference. Citations and references are listed at the bottom of each page. Separate subject and author indices are provided at the

end of the book along with a list of journal abbreviations.

Clearly, every two-year and four-year college library that serves science majors should have a copy as well as university research libraries. However, potential use at the secondary school level is limited, if not nonexistent.

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## Ecology and Environmental Biology

### LIVING IN THE ENVIRONMENT

by G. Tyler Miller, Jr. 1979. Wadsworth Publishing Company (Belmont, California 94002). 470 p. Price not given.

*Living in the Environment* is a textbook for an introductory course in environmental studies. It would best be used at the college or university level by teachers in the biological sciences, although it might also be used in other disciplines such as geography and geology. The book is organized in such a way that it can readily be adapted to a variety of teaching situations and academic sessions of varying lengths.

The second edition of the book is organized like the first edition but is about 70 pages longer. The basic text consists of twenty chapters, all extensively revised, and this is followed by a series of 20 enrichment studies. In the basic text there are two short introductory chapters that do an excellent job of setting the stage for the rest of the book. These are followed by five chapters that emphasize basic ecological concepts. Miller does a masterful job of integrating the rest of the chapters with these basic ecological concepts. The remaining chapters focus on environmental concerns that include population, the several pollutions, resources, land use, energy, environmental economics, and environmental politics. In this edition the author has added an additional chapter on energy that presents energy alternatives in some detail. Energy relations and problems constitute a very important theme that tends to unify much of the book. The basic text stands by itself but the considerably revised 17 enrichment studies may be used to expand upon certain topics and provide an excellent format for classroom discussion.

A guest editorial by a prominent environmentalist is included at the end of each chapter along with a series of discussion questions and a list of further

readings. An appendix lists appropriate periodicals, environmental organizations, and governmental organizations and is followed by a glossary, a list of over 4,000 references, and an index.

This book is comprehensive in its treatment of environmental problems and proposed solutions and is well written so that almost anyone would find it interesting. The extensive revision of the first edition has included an updating of information and an unusually high level of factual accuracy. This is undoubtedly due largely to the use of some 90 manuscript reviewers. The book includes large numbers of graphs, tables, maps, and diagrams that reinforce, summarize, and illustrate the textual material very effectively. The extensive use of maps to illustrate a wide variety of things is particularly effective. Few photographs are included but their absence is not noticed because of the large number of diagrams and line drawings.

In addition to achieving the difficult task of writing an interesting textbook that integrates a variety of topics relating to the environment, the author has achieved a balance in his presentation by providing many facts and arguments supporting opposing viewpoints. This book is certainly one of a small number of outstanding textbooks in environmental studies.

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### INTRODUCTION TO ENVIRONMENTAL SCIENCE

by Joseph M. Moran, Michael D. Morgan, and James H. Wiersma. 1980. W.H. Freeman and Company (660 Market Street, San Francisco 94104). 658 p. \$16.95.

This is a well-written, informative textbook designed for college but it could be used in advanced high school classes. The approach is refreshingly different in that it states the action that can be taken, possible solutions, and even the consequences that may result when dealing with environmental problems.

Accordingly, the book is divided into three main sections. The first establishes a background of knowledge of the principles governing the environment; the second covers environmental quality and management. It is the third section, though, that sets the book apart as it establishes problems of environmental issues such as human population growth and food shortages and then commendably offers possible solutions that could be compatible to both the environmen-