

continuity of chemical messengers from single-cells to vertebrates.

Hadley clarifies data and concepts through well-conceived tables, flow-charts and appendices. Illustrations lack color and the text is sometimes dry; however, the author's enthusiasm is apparent in discussions of research. He ably communicates that endocrinology is a dynamic field in which new information and insights will arise daily.

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EVOLUTION

THE ORIGIN OF LIFE

by Carl R. Woese. 1984. Carolina Biological Supply Company, Burlington, NC 30 p. \$2.00 softback.

This brief monograph is far more than a rehash of the traditional versions of how life first originated on earth. The author begins the discussion with a thorough review of the physio-chemical nature of extant life forms and the basic concepts of the Oparin model of chemical evolution. He then describes the problems of "traditional" chemical evolution models in light of current understandings of the prebiotic environment and the metabolic processes of contemporary organisms. Finally the author proposes an alternate scenario in which life began some four billion years ago in mineral-rich water droplets suspended above the surface of a planet too hot to permit the accumulation of significant quantities of liquid water. He further suggests that the earliest life forms were photoautotrophs and that heterotrophs evolved later on in time.

The monograph is well thought out and extremely well written. It is an excellent supplementary text for any advanced high school or elementary college course where the origin of life is considered.

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GENESIS ON PLANET EARTH: THE SEARCH FOR LIFE'S BEGINNING

by William Day. 2nd ed., 1984. Yale University Press (92A Yale Station, New Haven, CT 06520). 200 p. \$35.00 hardback, \$12.95 softback.

The author provides a detailed, vivid account of modern views on the evolution of the first life on the earth. The contents include discussions of the building blocks of life, physical

features of the early earth, the evolution of prokaryotes and eukaryotes, the molecular architecture of life, and energetics. There is a cohesive flow to the story and the writing style is excellent. The author has succeeded in telling the story in a clear, lucid, interesting manner. There are many technical details, and readers will need some background in biology and chemistry in order to derive maximum benefit from the book. The author includes many highlights in the history of biology, and explains a number of basic biological principles.

Although the softback version of this book has an interesting cover, the internal design is not very appealing. Small print, off-white page color, small, crowded figures and the condensed format are disconcerting.

This is a fascinating, well-written, thought-provoking book that is well worth reading. Except for the design features and the scarcity of good illustrations, I would recommend this book for the serious science student who wants to capture the thinkings and findings concerning this intriguing subject.

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GENETICS

UNDERSTANDING DNA AND GENE CLONING: A GUIDE FOR THE CURIOUS

by Karl Drlica. 1984. John Wiley and Sons (605 Third Avenue, New York, NY 10158). 205 pp. \$11.95 softback.

Drlica's objective is to provide a nontechnical exposition of gene cloning technique and point to ways such techniques can further our understanding of life and be applied to society's benefit.

His presentation goes beyond superficial discussions of molecular genetics and does so in a style easily accessible to those with only limited background in biology and chemistry. Clear writing and illustration, coupled with a glossary, brings the concepts within an average college student's grasp. A useful (though limited) collection of references, ranging from *Scientific American* reviews to technical research reports, will benefit more advanced students.

The theoretical foundations of gene cloning are nicely balanced with practical applications. DNA recombination and cloning techniques are introduced via discussions of DNA replication, transcription and translation. Examples from recent literature are well

chosen and discussed in ample detail to give a basic understanding of the processes involved.

Drlica has succeeded in his efforts to bring molecular genetics to a general audience. The book is adaptable for use with nonscience majors and can serve biology majors as an introduction to more technical presentations.

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MICROBIOLOGY

MICROBIOLOGY: INTRODUCTION FOR HEALTH PROFESSIONALS

by Paul A. Ketchum. 1984. John Wiley & Sons (605 Third Avenue, New York 10158). 544 p. \$27.95 hardback.

This textbook is specifically intended for introductory courses for students who are preparing for careers in any of the many and varied health fields. The material presented deals with the basic science of microbiology with an emphasis on the health of man.

Ketchum consistently organizes materials that aid the student in assimilating the facts. He relates microbiology to the tenets of physics and chemistry with meaningful illustrations.

There are questions and topics for discussion at the end of each chapter to supplement these discussions, a literature search of articles and reviews found elsewhere. The usefulness of the book is further enhanced by several appendices, each unique for a specific topic such as Krebs Cycle, Glycolysis and the like; an excellent glossary and complete index enrich this book. Any professor who uses this excellent textbook will be overjoyed at the comprehension of accurate, up-to-date and well illustrated materials that are contained therein.

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PHYSIOLOGY

EXERCISE PHYSIOLOGY

by G.A. Brooks, and T.D. Fahey. 1984. John Wiley & Sons (604 Third Avenue, NY 10158). 810 p. \$27.95 hardback.

In these days when exercise programs have entered the mainstream of daily activity, textbooks updated in mechanisms underlying the biologic effects and in applications to human