

marihuana and change our existing laws and enforcement, which are unrealistic and vary irrationally from place to place and case to case. Grinspoon's book should play an important role in effecting this reevaluation and change, and for this reason it is worthwhile reading, at least in part.

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LOVE AND SEX AND GROWING UP, by Eric W. Johnson and Corrine B. Johnson. 1970. J. B. Lippincott Publishing Co., New York. 119 p. \$3.95.

This book is one in the publisher's series on human sexuality. The format and the simple, direct style convey interesting, factual material for a large reading audience of middle-school age. As in *Sex: Telling It Straight* (1970) and *Love and Sex in Plain Language* (1967), the topic is treated in a frank but inoffensive manner. The biologic, psychologic, and sociologic parameters of sex are considered in a balanced way. There is considerable redundancy in content in this series; however, *Love and Sex and Growing Up* accents the sociologic aspects. The major contribution of the book is a comparison of Iroquois (Indian) and Japanese social structures, which have different but successful concepts of the various roles to be played by the sexes. Such a discussion assists in breaking down stereotyped thinking about the established and the emerging roles of the sexes in our own society.

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THE TRUTH ABOUT DRUGS, by Geoffrey Austrian. 1971. Doubleday & Co., Garden City, N.Y. 141 p. \$3.50 (hardback).

This book, written for the young reader, discusses in an adequately objective way the drug problems in our society. The author gives a brief history of the use of drugs in the United States, mentioning the widespread use of morphine in the Civil War, the opium-smoking by Chinese railroad-workers, and the use of household medicines containing opium, such as laudanum and Dover's powder. The changing popularity and availability of drugs are mentioned in the review of marihuana, opium, heroin, and LSD.

Austrian has an excellent section on the effects of drugs, including the range of individual reactions. He considers such variables as the amount; the way a drug is taken; the time of day; other drugs taken beforehand; a person's size, age, and weight; the condition of his body organs; his emotional makeup; his mood; and his expecta-

tions. Because the reaction to a drug is an individual thing, Austrian indicates, no general standards can be stated.

"Drug dependence" (the term replacing "addiction") is discussed. This is followed by information on the "ups" and the "downs": the amphetamines and the barbiturates. The unknowns of LSD are presented, and marihuana is discussed at length. The move to decrease the severity of the penalty for drug users is described. Organized crime's role in the drug traffic has a chapter devoted to it, and the book concludes with a discussion of the organizations and programs that are designed to aid the addict.

That this book is of interest to the young reader was verified when my 11-year-old son discovered it at home one evening and read it in three sittings. And my concern that the book might be too objective for a young reader was allayed as the result of the discussion we had about it: the dangers, the uncertainties, the costs, and the effects come on strongly enough to make the idea of drug-taking objectionable to the young reader.

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Microbiology

MICROORGANISMS AND MAN, by Orville Wyss and Curtis Eklund. 1971. John Wiley & Sons, Inc., New York. 398 p. \$9.50.

The authors state in the preface, "this textbook is a study guide for an elementary course. . . . It is not a compendium in microbiology." Therein lies one of its main strengths. It seems all too often of late that textbooks, even for elementary courses, are being written not for students but for peers. This book avoids that trap nicely without sacrificing information essential to the student and without saddling the student with a volume that by its sheer size alone would scare the wits out of most beginners in the discipline.

The title suggests that the book is about the interrelationships of microbes and man. These applied aspects of microbiology are indeed stressed—but not without first giving the student adequate fundamentals to permit a fuller appreciation of the applications. The 21 chapters flow smoothly from an introduction and history of microbiology, through an up-to-date but properly abbreviated section on the basics of the science, and then into the various kinds of microbes and their pertinence to medicine, to water, to milk and food products, to industry, and to the soil.

A format of heavy print for key terms is used with skill and supplemented by

a useful glossary. Each chapter has a succinct summary, which could be profitably read both before and after a study of the content. The book lacks color illustrations, but perhaps this was in the interest of the student's pocketbook. If so, it was a good choice: the illustrations, for the most part, are quite adequate in black and white. However, a more liberal use of illustrative material would have been helpful. In addition, I would have liked to see a series of guide questions at the end of each chapter; but for a skillful teacher they may not be necessary.

Wyss and Eklund have made a genuine contribution to the teaching of elementary microbiology. They have kept their audience in mind. I hope this concern will not be at the expense of peer-group disapproval, as is sometimes the case. I believe the man to whom the book is dedicated—the late O. B. Williams, of the University of Texas—would have taken pride in *Microorganisms and Man*.

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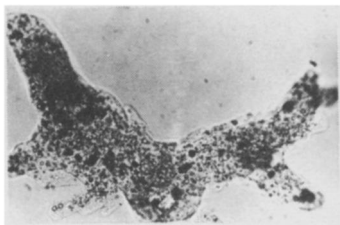
Molecular Biology

MOLECULES, MEASUREMENTS, MEANINGS: A LABORATORY MANUAL IN BIOCHEMISTRY, by David W. Krogman. 1971. W. H. Freeman & Co., San Francisco. 100 p. \$3.25 (softback).

Perusing the table of contents of this manual, one is likely to surmise that it has just what an introductory laboratory program in biochemistry should contain: work on proteins, enzymes, ATP, photosynthesis, respiration, lipids, nucleic acids, enzyme regulation, and biochemical differentiation. There are 18 experiments and an index. The exercises are designed to illustrate the chemical basis of the main topics of an introductory biochemistry course.

Examining the experiments, one finds this manual more attractive. There are several illustrations, borrowed from *Scientific American* or drawn in a similar clear style. In a number of experiments use is made of several kinds of models; this is an important technique, used increasingly in the classroom and the laboratory. The exercises within each unit are well chosen. For example, the unit on the photosynthetic reducing power of isolated chloroplasts includes exercises on the absorption spectrum of chlorophyll, measurement of oxygen production by illuminated chloroplasts, chloroplast concentration and dye reduction, dye concentration and rate of dye reduction, effect of light intensity, effect of wavelength of light, and effect of an inhibitor.

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equipment list and a preparations list, is available. This manual should find extensive use in introductory biochemistry courses, particularly one-semester survey courses. Krogman is to be congratulated on his conceptualization and execution of this manual.

Thomas A. Cole
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Source Books

McGraw-Hill Encyclopedia of Science and Technology, ed. by D. N. Lapedes. 3rd ed., 1971. McGraw-Hill Book Co., New York. 15 vol., \$360.00.

This is the outstanding reference work of its kind. The third edition represents more than a thorough updating of material: according to the editors, almost 1,000 articles and more than 2,500 illustrations have been added. I was sent one volume for review; it indicates that the encyclopedia provides remarkably complete and authoritative information and provides it in an easy and attractive fashion. (I consulted my colleagues; they agreed.) The frequent illustrations are the most effective and relevant I've ever seen in any encyclopedia. In general, the editors have made

certain that each article is understandable to the nonspecialist. It is my opinion that an interested high school senior with a good background in science would have no difficulty understanding over 70% of the articles; the more technical articles, of course, would require considerably more sophistication and scientific background. Because of the broad scope of this kind of encyclopedia it would have been easy for the editors to overlook many biologic concepts, but I am pleased to report that such omissions are few.

This encyclopedia is a must for any school or public library. It presents current and definitive information on scientific and technologic subjects in an understandable and attractive manner.

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A RESOURCE BOOK OF TEST ITEMS FOR BSCS GREEN VERSION "HIGH SCHOOL BIOLOGY," by Biological Sciences Curriculum Study. 1971. Educational Improvement Corp., Boulder, Colo. 154 p. \$6.95.

RESOURCE BOOK OF TEST ITEMS FOR "BIOLOGICAL SCIENCE: AN INQUIRY INTO LIFE," 2ND ED. 1971. [Same issuance.] 179 p. \$6.95.

These are extensive revisions of the experimental test booklets published in 1966. They provide items to measure the mastery of objectives in the BSCS courses. The items for each chapter are designed to measure two arbitrarily selected levels of ability; however, the authors (who are not identified) have wisely stated that any such category system is only valid when compared with what has gone on in the classroom.

Except for a few free-answer questions the items are multiple-choice. In general the multiple-choice items are far superior to the free-answer items. The former show evidence of careful editing—an improvement over the original booklets. Most noticeably, the multiple-choice items are relatively free of technical flaws and unnecessary verbiage. The free-answer questions, however, suffer from a lack of careful editing and of imagination. The least that could be expected is a larger number of questions permitting the student to use a greater range of newly acquired knowledge and skills in considering solutions to societal problems.

Although of value to the teacher, the introductory sections are uneven. One example is a chapter devoted to the assessment of inquiry skills with investigative activities—"laboratory prac-