

first will be found in abundance chemical structural formulas that relate to biochemical genetics; scientific names of domesticated species used in genetics experiments; and terms that are essential to an understanding of the statistical concepts of population genetics. Charts of protein synthesis, glycolysis, the citric acid cycle, the pentose phosphate pathway, and the ornithine cycle are included. More traditional geneticists will be pleased to find that the extensive explanations of mitosis and meiosis have not been deleted, and more modern geneticists will be pleased with the emphasis on protein synthesis and biochemical genetics.

The four appendices of the first edition have been updated. These are a chronology of genetics, 1590-1971; a list of journals of genetics and cytology; a list of North American laboratories engaged in human-genetics research; and a list of sources of teaching aids and laboratory materials. The new edition is 45 pages longer than the first edition and is said to contain 700 new entries. Amniocentesis, average life, conditional dominance, and interphase cycle-terms that are coming into the standard vocabulary in genetics—have been added here. However, it appears that a large number of the new entries relate to human hereditary diseases arising from various enzymatic deficiencies.

One of my colleagues, Percy H. Baker, who teaches an introductory-genetics course for biology and pre-medical majors, points out that "the majority of students get their introduction to genetics before they have the background in biochemistry and statistics on which genetics concepts are based. The definitions in this book are generally understandable without benefit of courses in these and other contributory sciences, although the chemical formulas may still be mystifying." I concur with Baker's statement and need only add that those of us who teach general-education biology courses welcome the book's increased emphasis on human genetics.

The book is recommended for first-priority purchase by secondary-school and college teachers of biology.

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### Human Behavior

DRUG MISUSE: A PSYCHIATRIC VIEW OF A MODERN DILEMMA, by the Group for the Advancement of Psychiatry, Committee on Psychiatry and Law. 1971. Charles Scribner's Sons, New York. 93 p. \$1.95 softback, \$4.95 hardback.

"Basic research concerning the etiology, the psycho-social issues, and the physiologic effects—particularly long-

term—of drug misuse is essential before formulating policy." This sentence, in the preface, states the premise on which this book is based. Written by a committee of psychiatrists, *Drug Misuse* presents a clear, readable picture of the medical and legal status of drug use and misuse in America through 1970. The short, interesting introduction traces drug use through the ages. The first two chapters focus on the contemporary drug problem and factors contributing to it; chapter 3 is devoted to detailing what is and is not medically known about marihuana, amphetamines, inhalants, LSD, and opiates.

After outlining American drug legislation since 1900 (chapter 4), the committee squarely faces the question of marihuana legalization. Suggestions are made for legalization guidelines, and the pros and cons of such legislation are discussed. This summary report ends with seven recommendations, which stress medical treatment of the drug-user and further medical research to find out more about the true nature of drugs and drug misuse.

This is the least emotional and best-documented work on drug use and misuse that I have encountered. The bias is toward treatment of users and dissemination of correct information to potential users. This book could well serve as the core of a high-school or college unit on the drug problem. The text is short (40 p.) and is accompanied by seven pages of footnotes, a glossary, literature references, and film resources.

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THE SCIENCE OF WAR AND PEACE, by Robin Clarke. 1972. McGraw-Hill Book Co., New York. 335 p. \$10.00.

Clarke says he does not want to include in this book any information of dubious scientific value. He doesn't. This is a thoroughly objective, fascinating, and cautious treatise on the quantification of human behavior as directed to military innovation. Clarke gives us a panoramic view of international communication, by detaching us from patriotic ties and preconceptions. He scans the tragic folly of reciprocating escalation, of deterrence, of military planning and war games—whatever the country or the century.

One may leave the first half of the book stunned by the morbid plans of the world's military strategists: the attainment of overkill potential, the use of sea and space for purposes of strategy. One also learns how the world's military has impregnated the scientific establishment, by entangling in its grasp 80% of the world's scientists. Oceanography, weather-forecasting and control, communication satellites, the biology of fishes: no field seems impenetrable to the strategists.

The second half of the book surveys the research in the mathematics of the arms race, the theory of deterrence—even the possible "science" of diplomatic note-writing. Clarke also ties the waging of war to the ideas of Ardrey, Lorenz, Morris, Freud, and Montagu.

Clarke casts an eye on all wars, hot or cold, and attempts to blend the economics of military funding with the biology of human aggression. He does so without anger and without undue bias. The value of this book is enhanced by its absence of political ends: no administration is chided; few men are attacked directly. Rather, Clarke treats of the waging of war as internationally as he can. And he paints man as a young child handicapped by an animal aggression that is difficult to shed. He suggests that if we can learn the mechanics of such behavior, we may be able to avoid it.

Although some of his tables are difficult to interpret and although Clarke's positions may be at times debatable, chances are the reader will rush to the library to pursue the book's thesis, via its excellent bibliography. The biologist who wishes to enhance his knowledge of human behavior will use the book as a primer on human aggression as applied internationally.

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### Microbiology

NATURAL HISTORY OF INFECTIOUS DISEASE, by J. A. Boycott. 1971. St. Martin's Press, New York. 40 p. \$13.95.

At the outset the author describes disease-producing organisms but neglects some aspects of morphology, such as the association of the lipid envelope with certain viruses (important in their classification). His identification of the psittacosis group as viral rather than bacterial is not in keeping with the current view. The succeeding chapters, on the nature and cause of infectious disease and the survival of the parasite within the host, are informative and interesting. Perhaps most helpful to the biology student are the pages on cellular and humoral defenses. The last chapters present classic examples of infectious diseases; here, important aspects of epidemiology are discussed, such as the features that distinguish one epidemic from another and the spread of parasites to man from animal (the zoonoses).

Boycott has attempted to summarize parasitism in too few pages. And the cost is excessive: much of the material is contained in standard biology and microbiology textbooks of comparable price.

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