and Separation of the Sexes," or "Seduction and Rape, or, Female Choice and Male Sequestering." The book requires the conscientious concentration of the concerned reader.

Only the most widely read and thoroughly informed biologists will not be impressed by the breadth of Ghiselin's insight and the diversity of the literature cited to support a position or to illustrate a point. Even the most superficial reader cannot help but be impressed by the author's careful effort to marshall evidence to support conclusions. Ghiselin would not appear to be guilty of the ad hoc theorizing that he deplores in the thinking and writing of many students of evolution.

The biology teacher will be impressed with Ghiselin's deft use of analogy to clarify abstract points and by his willingness to examine alternative hypotheses that seemingly explain certain observations. Although the book will not be useful to the high school biology student, it may well be found to be helpful to the teacher who wishes to delve deeply into the evolution of sexual reproduction.

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Genetics

THE NEW GENETICS, by Margaret O. Hyde. 1974. Franklin Watts, New York. 144 p. $6.95 hardback.

"From peas to people, from simple laws of heredity to probing the secrets of cells," Hyde's short but concise book substantiates well the fact that geneticists are making exciting discoveries. These discoveries will be of major interest and concern to all. The moral and legal implications are sure to have such an impact that theologians, physicians, and jurists will be spinning and sputtering.

As the science of genetics progresses, young people need to be more informed about all of the possibilities that this special science offers. Hyde's book helps in the interpretation of some of these difficult concepts. For example, "cloning," a process of creating one human being identical to another, is discussed in such a way that the layman and the young reader can understand.

Perhaps the most important function of the book is to dispel much of the sensational publicity that has been generated by genetic engineering. Written for 9th-grade level and above, this book should prove helpful as supplementary reading in any general biology course. Suggestions for further reading, some organizations with special interests in the new genetics, and an index are included.

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Health

HUMAN SEXUALITY: SENSE AND NONSENSE, by Herant Katchadourian. 1974. W. H. Freeman & Co., San Francisco. 106 p. $2.95 softback, $5.95 hardback.

Katchadourian's sex, even in abridged form, is better than most. This book is a distilled version of his comprehensive textbook, *Fundamentals of Human Sexuality* and is one of a series, the Portable Stanford.

Sprinklings of erotic art intermingle with medical drawings. The text is similarly diversified. Divided into three main chapters, the Physical Basis of Sex, Sexual Behavior, and Sex and Society, this book is a welcomed supplement in the field, the school, and the home as well.

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HEALTH, ed. by Jean Mayer. 1974. D. Van Nostrand Co., New York. 543 p, $8.95 (softback).

Nineteen specialists from Harvard University have contributed to this book. Obviously, the accuracy of its scientific contents can seldom be disputed. It is designed for an undergraduate course in health and possibly could be used as a resource for a second biology course at the secondary level. It is subdivided into four parts: human biology, disease, health care delivery, and human dilemmas such as population growth and pollution. Generally, it is a valuable work and includes some minor benefits such as a wide margin for notes and periodic sidelights to provide background or additional materials.

Having thus related the major assets of this somewhat unusual and comprehensive book, I must outline my reasons for recommending against its use.

Chapters 1 and 2 ("The Human Body" and "The Cycle of Life") present too much introductory material too rapidly. One moves from the cell to a study of body systems in a short time, and with a massive number of terms, many of them unexplained (depolarization, replication, and so on). Chapters 13 and 14 ("Mental Illness" and "Drugs"), written by the same author, are aimed at two extremely crucial health issues yet devote too little space to them. Indeed, a general objection to most of the book is its attempt to present too much material, merely for the sake of completeness; and in so doing several major areas are given inappropriate coverage.

The illustrations of the book leave much to be desired. Seemingly, many have been included only as monotony-breakers. A lady's hand holding an alcoholic beverage; a section of brick wall showing six windows; a crowd of people; a stout lady reading a book; a pond; four people wading at the sea shore. The inclusion of other illustrations is questionable; incision of the vulva to assist birth, showing the actual cutting; 19 babies in incubators in a section on birth control.

In presenting some social dilemmas, there are statements which should be scrutinized carefully by anyone planning to adopt this book. (i) "Although good sex grows out of a good relationship, that is not to say that you can't enjoy sex with someone you only recently met. You can, and those who say you can't are still under the influence of . . . Victorian myths . . ." (ii) "Sexual activity is a . . . pleasurable form of human recreation." (iii) "[Masturbation] . . . may indeed be of some value psychologically in helping one to learn about his or her own likes and dislikes in sexual stimulation." (iv) ". . . people throughout this country are still being imprisoned for violations of the sex laws, many of which are cruel, vindictive, and archaic. These laws express the attitude of sex as sin which we have inherited as part of our Judeo-Christian culture." (v) [There is no] tendency for most users [of marijuana], as has been charged, to go on to hard drugs." (vi) "What method of contraception would you suggest for . . . a high school student hitchhiking to a rock festival?"

If evolution can cause as much controversy as it has, one must wonder how many telephone calls would be forthcoming if this book is used with no comment on the above statements.

Finally, too many of the "selected readings" following chapters are either biased, outdated, or inferior. This is especially true of chapters 4, 17, 19, and 22.

In a word, it is unfortunate that the valuable sections of this book, such as the chapters on human genetics and on epidemiology, are overshadowed by the encyclopedic, biased, unscientific, or somewhat outdated nature of other sections.

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THE STUDENT BIOLOGIST EXPLORES DRUG ABUSE, by Gabrielle I. Edwards. 1975. Richards Rosen Press, Inc., New York. 108 p. $4.80 hardback.

The opening chapter distinguishes between medicine and drugs, illegal and legal drugs, while the remaining discuss hallucinogens, amphetamines, barbituates, heroin, cocaine, volatile substances, alcohol, tobacco. Within each of the major headings is included some mention of almost any conceivable potentially dangerous substance. For example, the chapter on hallucinogens is concerned mainly with marijuana, but does include a brief table on mescaline, DMT, psilocybin, cocaine, and morning

glory; in the chapter on volatile substances, eight are listed ranging from modeling glue to non-stick cooking oil spray; and the chapter on amphetamines lists seven that are commonly abused. Each chapter, with the exception of the one on volatile substances, also includes a brief historical sketch of the substance. These histories are of varying depth and extent, with the best being those of heroin and tobacco. Here the reader learns that the opium poppy was cultivated as early as 4000 B.C. by the Sumerians, that the Roman emperor Tiberius moved his court to Capri to be near the poppy, that heroin was isolated in 1898 and originally believed to be a non-addicting substitute for morphine, and that research on the harmful effects of tobacco can be traced back at least as far as the French physician Bouisson who in 1859 noted the correlation between cancer of the oral cavity and pipe-smoking.

This book is intended for the secondary student and the preface states that its purpose is to provide answers about the biology of drug abuse. The chapters on amphetamines, alcohol, and tobacco do the most complete job of this. For the intended reader, the information presented through discussions and diagrams in these chapters as to how amphetamines affect nerve transmissions and how alcohol and tobacco cause physiological change and damage is quite adequate with but two exceptions: it is mentioned that nicotine and tars immobilize respiratory cilia, but this statement stands alone and is not elaborated upon or tied in with resulting effects; the very questionable statement that cirrhosis of the liver is "... a cancer condition..." is made on page 72. Furthermore, the discussion on what alcohol is (p. 66-67) may leave the reader with erroneous impressions. "Alcohol is a compound with the chemical formula C_2H_5OH" implies that all alcohols have this formula, and the statement "When alcohol is made from grain, it is called ethyl alcohol ..." is only partially correct.

As with the historical survey, the treatment given to the known or suspected biological effects in the other chapters is considerably less (for example, "The sniffing of volatile substances damages the liver, the lungs, the blood cells, and the brain" and "... opiate drugs depress respiration. This means that the rate at which the individual obtains and uses oxygen is slowed down"), but throughout the book much emphasis is given to the symptoms of drug abuse, its harmful social and psychological results, and warnings against drug use. As a result, the more advanced reader may be left with the nagging feeling of *deja vu* and wish for more physiological data and less exhortation. While there is a paucity of materials that gather together information on the many drugs subject to the abuse as this book has done, I feel that the more advanced or sophisticated reader would probably not gain too much new information other than a fairly extensive bibliographical reference for further reading.

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Microbiology

MANUAL OF CLINICAL MICROBIOLOGY, ed. by Edwin H. Lennette, Earl H. Spaulding, and Joseph P. Truant. 2nd ed., 1974. American Society for Microbiology, Washington, D.C. 970 p. $15.00 softback, $20.00 hardback.

This book will be one of the most widely used manuals in the laboratory or classroom of the microbiologist. 125 authors, each writing in his area of expertise, have contributed to this manual. The second edition has completely updated the materials presented and includes 20 new chapters.

The emphasis of this manual is on the organisms commonly found in human infections. Each organism is considered in terms of characteristics and clinical significance along with specific methods and procedures for examination, isolation, and identification. The nomenclature of bacteria has been revised, and the literature citations updated. The book is divided into 11 sections containing 96 chapters. There are 246 illustrations; among these are excellent tables, photographs, and diagrams.

The section on "Infection Prevention—Quality Control" contains some very useful general information for laboratory management such as a quality control program, methods of maintenance of microbial cultures, and suggestions on the selection of disinfectants and antiseptics. The final two chapters, on media, tests, reagents, and stains are of particular importance to the teacher. The preparations are written in detail with notations to guide the most inexperienced laboratory person. This manual should be found on the desk of every microbiologist.

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HANDBOOK OF MICROBIOLOGY, ed. by A. L. Laskin and H. Lechevalier. Cond. ed., 1974. CRC Press, Cleveland. 944 p. $14.95 (softback).

Long a favorite among microbiologists, the comprehensive four-volume *Handbook of Microbiology* is now available in a condensed edition. The handbook is organized into seven sections: bacteria; fungi; algae; protozoa; viruses; and miscellaneous. The section on bacteria is reproduced entirely from volume 1 of previous editions and presents a thorough discussion of the various groups of bacteria, including information on genetics and cell wall structure. A general survey of the fungi is presented in the second section, followed by sections on the algae and protozoa. These sections are not as thorough and complete as the other sections but they are adequate. Viral systematics and bacteriophage linkage maps are presented in the viral section. The last section provides primarily information of a biochemical nature, genetic information, and material on immunocompetent cells. These seven main sections are followed by a glossary and general reference sections that provide several useful tables ranging from the periodic table of the elements to foreign alphabets. A foldout 1974 metabolic pathway chart is also included.

There is no doubt in my mind that the editors have succeeded in their goal of producing a highly useful and inexpensive desktop data center. The price and the breadth of the material make it a useful reference for the intermediate or advanced microbiology student, high school biology teachers, or anyone in need of a current concise microbiology reference.

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Physiology

FUNCTION OF THE HUMAN BODY, by Arthur C. Guyton. 4th ed., 1974. W. B. Saunders Co., Philadelphia. 481 p. $10.50.

A LABORATORY MANUAL FOR GUYTON'S *FUNCTION OF THE HUMAN BODY*, by George G. Armstrong. 3rd ed., 1974. W. B. Saunders Co., Philadelphia. 284 p. $6.50 softback.

Significant to any evaluation of this textbook by Guyton is the observation that this is actually the third book of a group of three. The other two are *Textbook of Medical Physiology* (1971) and *Basic Human Physiology* (1971). It appears that the basic, original work is the medical physiology, technical and comprehensive in scope, which has been skillfully abridged and simplified to serve different readerships. *Basic Human Physiology* is shortened for a college physiology offering while *Function of the Human Body* is still more elementary and abbreviated.

Specifically, the book under review is a fine example of Guyton's clarity of thought and gift for exposition and communication. There have been selected the salient areas of physiology—beginning with cells and tissues and proceeding through the systems—that most instructors would want to be included. Illustrations are simple and appropriate; there is one color plate on blood cells. The index is adequate. Overall, this book should con-