

nical terminology. Scant use is made of figures and the 29 plates are not only of mediocre quality but crammed together in the center of the book rather than being interspersed in the text as you might expect in a book in this price range. The price alone would preclude its use as a textbook in many courses or even as a reference in libraries with tight budgets. Such a comprehensive treatment (22 pages of references and 16 pages of subject and scientific indexes) of this very timely topic should not be priced out of the hands of those who could derive immediate benefit from it.

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WORLD PROTEIN RESOURCES, by Allen Jones. 1974. Halsted Press, New York. 381 p. \$17.50.

Protein is essential to life. Inadequate amounts and types of protein in the diet are major problems throughout the world. The author feels that there is no shortage of protein world-wide, rather that the problem is in inefficient distribution of protein foods, the failure to utilize certain protein sources and to thoroughly explore other sources. The book is divided into five parts. The first, an extensive "Introduction to Proteins" has nine chapters. Protein and amino acid chemistry, proteins in the diet, vitamins, proteins, minerals, allergy, and food preservation are covered in an informal and interesting style. This introduction provides a sufficient review of general nutrition so that the importance of proteins, interacting with the other components of an adequate diet, is made clear.

In the second part, "Animal Proteins," the author discusses common and uncommon sources of meat throughout the world. Among the more uncommon examples of interest to protein technology are snakes, which the author considers to be the sources of medical protein because boiled snakes are thought to have curative powers. Variability in meat, fat content, and simulated meat products are also discussed in this section. There are additional chapters on poultry, dairy protein, and fish products.

Chapters on cereals, fresh vegetables, oilseeds, legumes, vegetable genetics, and green leaf protein are found in part three. The pros and cons of individual plants as potential and actual protein sources are presented and discussed in an effective manner. There is hope that algae will provide low-cost protein from the sea. Algal protein sources, along with fungi, yeasts, and bacteria are considered as possible and actual sources of usable protein in part four. Areas of interest discussed in this section include aspects of the utilization of oil and of waste products as raw materials for protein production.

The fifth, final, and most valuable part of this book is entitled "Protein Economics." The problems facing world agriculture are many and complex, ranging from inflation to obsolete laws. The author attempts to calculate the potential output of protein possible on earth and suggests ways to approach this theoretical maximum. He also lists those factors, such as labor problems and the failure to utilize land suitable for cultivation, which tend to inhibit protein production. A discussion of the unique protein situation in about 40 selected countries is interesting and adds much to the book. In many cases it is apparent that solutions to the protein problem are not easy nor will they be quick in coming. Trends that may affect protein technology and thereby the future of man on earth are presented in the final chapter. Population growth, urbanization, fuel costs, health problems, and numerous other factors are shown to influence and be influenced by protein.

Tables of data are numerous, easy to understand, and provide much for the reader to consider. Unfortunately, references to literature used in the preparation of this book are not included. The literature available to the author must have been extensive and a collection of these sources of information would be helpful to many readers. This book is both well-written and timely and it should be of special value to nutritionists, agriculturalists, biologists, and concerned lay people.

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Education and Professional Concerns

U.S. COLLEGE SPONSORED PROGRAMS ABROAD, ACADEMIC YEAR, by Institute of International Education. 1974. Unipub, New York. 89 p. \$3.50 softback.

Available programs are listed country-by-country along with information on dates, cost, and sponsoring institutions and a short synopsis. The concise listings give a quick grasp of possibilities for the teacher desiring to study abroad for a year or for the undergraduate seeking a college or university that sponsors overseas study as part of a particular curriculum.

SUMMER STUDY ABROAD, by Institute of International Education. 25th ed., 1974. Unipub, New York. 86 p. \$3.00 softback.

This listing of college and university summer courses abroad is published yearly. The book includes a country-by-country listing of courses and sponsoring institutions and a brief summary of

the course with all-inclusive dates and costs. As with all IIE booklets, the thorough coverage of the area is apparent and the style permits easy access to desired information.

TEACHING ABROAD, ed. by Marjorie Beckles. 1973. Unipub, New York. 68 p. \$4.00 softback.

This booklet provides information on (i) U.S. Government Programs, (ii) foreign government programs, (iii) multinational programs, (iv) international corporation programs, (v) private associations and schools, (vi) volunteer teaching opportunities, and (vii) a list of publications and embassy addresses for future information. Each program listing includes criteria for employment, application deadlines, remuneration, and addresses of the sponsoring groups.

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Evolution

THE ECONOMY OF NATURE AND THE EVOLUTION OF SEX, by Michael T. Ghiselin. 1974. University of California Press, Berkeley. 358 p. \$12.95.

Michael T. Ghiselin may be familiar to the readers of *American Biology Teacher* as the author of the well-received *Triumph of the Darwinian Method* (reviewed in *ABT* 35[6]:360), which in 1970 won the Pfizer Prize of the History of Science Society. In his new book Ghiselin reveals the depth and breadth of his understanding of biology and the underpinning philosophical positions on which biological science is based. Ghiselin seeks to develop a Darwinian nonteleological view of the "natural economy," using a laissez-faire model rather than the traditional cooperative ideal. He reviews a variety of theoretical topics, most of which concern the evolutionary interpretation of sex and related reproductive phenomena.

Ghiselin repeatedly challenges the validity of purely theoretical systems and emphasizes the importance of empirical evidence, citing a large body of factual material on "reproductive strategies" in both the plant and animal kingdoms. The author's discussion is extensively documented with literature citations and the book is concluded with 69 pages of cited references. This extensive bibliography rightly suggests that this book is not light reading, but is rather an endeavor to be engaged in by the serious student of evolutionary biology. The casual observer must not be misled by such humorous chapter titles as "The Loves of the Plants, or, the Biological Role of Sex," "Love's Labor Divided, or the Union

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 marshal 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