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## DIALOGUES IN MODERN BIOLOGY

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and several major types of human diseases.

The introduction provides a brief and clear survey of the basic principles of genetics, along with a discussion of the classical and modern experiments which led to their development. The sections on Mendelisms and the chemical basis of inheritance are unquestionably within the grasp of readers with a minimal background in genetics and no more than an introductory biology course. Emery has made a concerted effort to define terms and illustrate basic relationships. The presentation of the Jacob and Monod model and the possible effects of mutation in a diploid organism is especially lucid. The effects of molecular genetics are explored in the discussion of inborn metabolic errors, hemoglobinopathies, and immunoglobulinopathies.

In the section on hemoglobinopathies, the embryonic hemoglobin is noted as  $\alpha_2 \epsilon_2$  which is Grower II, but no mention is made of Grower I ( $\epsilon_4$ ). Although they are governed by separate genes, the formation of beta ( $\beta$ ), gamma ( $\gamma$ ), and delta ( $\delta$ ) chains are affected by the linkage of the genes, resulting in Lepore, Kenya, and other hemoglobinopathies. With the decrease in  $\beta$ -chain production in thalassemias, there is an increase in HB A, and occasionally elevation of Hb F in adult life. HB Bart's hydrops fetalis is the  $\alpha$ -thalassemia that is subject to straightforward genetic interpretation. The deletion mentioned in this type of thalassemia may be explained by probably heterogeneity of  $\alpha$ -thalassemia alleles at a single locus. I found particularly noteworthy the explanation of immunoglobulinopathies and transplantation genetics, an area often inadequately discussed or entirely omitted.

Cell division is included in the presentation of chromosomal abnormalities, but unfortunately interphase which is listed as a part of mitosis should be designated as a period between cell division, and DNA replication during interphase is neglected. The delineation of linkage and cytogenetics is skillfully presented so that the notation for chromosomal classification and abnormality description is clear. The presentation of heterogeneity in sex chromosome abnormalities and mosaics is clear and lucid and should dispel the confusion and misunderstanding surrounding the syndromes and disorders. In addition to the usual discussion of familial inheritance, the chapters on genetic factors in common diseases and pharmacogenetics provide the necessary information to improve the understanding of the relationship between the environment and gene expression. The

intricacies of mathematics for understanding population genetics have been minimized without impairing the ability of the reader to fully comprehend the pressure of natural selection on the gene pool.

While the concluding chapter on "Genetics and the Physician" is clearly intended for medical students, any general genetics student or biology teacher will find it both enlightening and helpful in either making decisions or assisting others in making decisions concerning rare genetic errors. To aid the reader in further research on possible explanations for the causes of genetic diseases, the author has included an excellent list of references. In addition, a complete glossary and index is available to the reader as he or she enjoys this worthwhile study of the genetic factors involved in human diseases.

David L. Parker  
Northern Virginia Community College  
Alexandria

### THE HUMAN PEDIGREE

by Anthony Smith. 1976. McGraw-Hill Book Company, (1221 Avenue of the Americas, New York 10020). 308 p. \$3.95.

This book could be useful to biology teachers who teach students on all levels because the facts deal with possible problems that all young people could experience in a lifetime.

The author introduces his subject as a very controversial issue in human genetics. The material examines personal values from a political, moral, legal, and medical standpoint.

In essence, if a child is born with defective genes, should that child live or die? Should parents be made to raise children who are defective and carry mental anguish throughout life? Is it right to allow defective children to live and continue to spread genetic defects when they marry?

This book leads you into thinking about the problem.

Bessie Yarborough  
North Lenoir High  
LaGrange, North Carolina

### Microbiology

#### MICROBIOLOGY AND HUMAN DISEASE

by George A. Wistreich and Max D. Lechtman. 2nd ed., 1976. Glencoe Press (8701 Wilshire Blvd., Beverly Hills, California, 90211). 905 p. \$15.95.

Students are convinced that book revisions are undertaken to force them to purchase new copies instead of used. Not so in this case. Selected sections have been rewritten and information has been added to update the book. Topics such as: "Hemagglutination Inhibition," "Endotoxin Detection," "Applications of Diagnostic and Investigative Electron Microscopy," and others have been added, while the section on "Complement Fixation and Its Mechanism" has been rewritten. Behavioral objectives have been added to each division of the book and new review questions have been included. There is a new chapter on Oncogenesis and Microorganisms. The glossary is well developed and references are made to the literature as well as to other texts.

As stated in the Preface, this is a comprehensive book and is suggested as being appropriate for both introductory and advanced classes in microbiology. This may be its one failing. Introductory students may be so overwhelmed by the plethora of material that they may not be able to identify relatively simple concepts. An adroit teacher can overcome this handicap and this may indeed be the basis for two separate courses in microbiology. Use in the advanced class would be enhanced by the students' previous familiarity with the book.

James Horton  
California State College  
Bakersfield

#### THE BATTLE AGAINST BACTERIA: A FRESH LOOK.

by Peter Baldry. 2nd ed., 1976. Cambridge University Press, (32 East 57th Street, New York 10022). 179 p. \$9.95.

The first edition of this book published in 1965 traced man's progress in his fight against bacteria from the earliest times up to the discovery of antibiotics in the 1940s. This revised edition continues with an account of a large number of other antimicrobial agents discovered during the last 25 years. It is an account of how man's success in the fight against bacteria is the result of shrewd observations followed by long-term cooperative research and practice in university laboratories and pharmaceutical industry. With the extension of several chapters, more profuse illustrations, and a complete renaming and rewriting of the last chapter, the reader gets a "fresh look" at the battle against bacteria.

The book begins with a brief history of research telling how bacterial enemies were identified and named. It relates methods of defense against the enemy and carries the reader briefly through

research and discoveries involved in the successful production of antimicrobial agents.

The text is knowledgeably written and attractively printed. The interspersing of scientific facts with profiles of major figures, illustrations, and social comments make the book more enjoyable and profitable to a wide range of readers. Its emphasis on the major aspects and the most outstanding persons involved in the battle against bacteria also add to the ease with which the book can be read.

This book was written to be used by professionals in medicine and nursing, students (including upper high school), and a wide range of the general public. It is a concise, accurate account of the development and use of therapeutic agents.

Willie J. Lanham  
Aiken High School  
Aiken, South Carolina

#### GENERAL MICROBIOLOGY—THE STUDENT'S HANDBOOK

by Peter Hunter. 1977. The C.V. Mosby Company (111836 West Line Industrial Drive, St. Louis Missouri 63141). 366 p. \$9.95.

This textbook should be especially useful in a one semester introductory course designed for students of medical laboratory technology, nursing, food technology, industrial microbiology, or environmental studies. The author presents an overview of the subject with an emphasis on techniques and applications. The book is divided into two sections: (1) basic background information; and (2) applied microbiology.

The first six chapters cover classification, nomenclature, microscopy, cell structure and function, metabolism, cultivation, growth, and control of microorganisms. In the introductory chapter, the author compares the 7th and 8th editions of *Bergey's Manual of Determinative Bacteriology*. A discussion of numerical taxonomy is also included. The chapter on protists contains several helpful tables comparing various protists and organisms within each group. The addition of more nutritional information could improve the chapter on metabolism without changing the nature of the book. The techniques included in the chapter on cultivation, growth, and control of microorganisms are usually described in a microbiology lab book.

The last four chapters discuss particular topics in applied microbiology. The chapter on the microbiology of water, sewage, air, and industry has especially good flowcharts of sewage and water treatment and the industrial processes for the production of alcoholic beverages,

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