

## Genetics

### THE ELEMENTS OF GENETICS

by Irwin H. Herskowitz. 1979. Macmillan Publishing Company (866 Third Avenue, New York 10022). 422 p. \$16.95.

Molecular genetics is one of the central topics among the biological sciences, and *The Elements of Genetics* summarizes in simple language advances in research and their relationship to many social aspects of our lives. The textbook is intended for use in introductory college courses, by students in related health fields, and would be useful to secondary school teachers wishing to update their background in genetics.

The book begins with a description of the physical and chemical properties of nucleic acids as a basis for understanding replication, transcription, and translation. It incorporates recent information on viral and bacterial genetics in explaining recombination in transformation, transduction, and conjugation. Each chapter is fully illustrated with photographs, diagrams, and charts from current scientific publications.

Eukaryotic principles involving such phenomena as mitosis, meiosis, sex-linkage, crossing-over, and whole chromosome changes are explained with examples of human traits and disorders. Each chapter of the book ends with a summary of main ideas and a series of questions varied with riddles, anagrams, problems, and thought questions involving values. In addition, the author has provided a separate instructor's manual of additional exam questions and instructional diagrams.

Sex determination, differentiation, and development are topics covered in another section of the textbook emphasizing human genetics in explaining the basis for gene action and the interaction of gene products. Those readers finding this area of study more difficult are aided by the author's effort to shorten details and avoid unnecessary technical terms. In addition, there is a glossary at the end of the book and individual bibliographies for each chapter.

"Present and Future Consequences of Genetics" is the title of the last section of the book; it suggests the applications and implications of genetics for agriculture, ecology, behavior, and medicine. This section will especially appeal to those aware of the growing body of knowledge relating one's genetic constitution to intelligence, immunological response, susceptibility to cancer, and the aging process.

*The Elements of Genetics* is an interesting, attractively organized body of information that can be recommended for its many additions and improvements

over previous textbooks in this field that assumed an historical approach or emphasized classical genetics.

Jane E. Mazur  
Pikesville Senior High School  
Baltimore

### GENETICS

by John B. Jenkins. 2nd ed., 1979. Houghton Mifflin Company (110 Tremont Street, Boston, Massachusetts 02107). 772 p. \$18.95.

In this revised edition of a general genetics textbook intended for a one semester college course, Dr. Jenkins has included some useful extras. The discussion of the historical expansion of Mendelism has been increased from one to two chapters. An entire chapter is now devoted to DNA replication. The regulation of gene activity in eukaryotes is now more fully discussed. There is increased coverage of population genetics. The last chapter of the book entitled, "Genetics: Past, Present, and Future," places the science of genetics in an interesting historical perspective covering modern genetics from 1900 to the present. This entirely new chapter considers such bioethical problems as eugenics, the I.Q. controversy, recombinant DNA, and environmental mutagenic hazards.

This large well-organized volume provides many resources for the instructor. Ample problems and questions are provided at the end of each chapter. A new section at the end of the book provides 75 carefully selected problems and answers for a review of the whole course. Answers for selected questions and problems from each chapter are given at the end of the book also. Answers to all chapter questions and problems are contained in an instructor's manual, which is available. References at the end of each chapter are up-to-date and adequate. A moderate glossary is provided in this new edition. The book is profusely interspersed with diagrams, line-drawings, charts and black-and-white photographs. The use of color would have enhanced many of these excellent illustrations. The text is very readable.

It would seem a bit ambitious to attempt to cover all of the topics included in this large book in a one semester genetics course, but with selectivity it should still be a useful resource for that purpose. All college and high school biology instructors should find this new edition of *Genetics* a valuable resource. College students and advanced high school students should also benefit from this volume.

Arthur D. Meyer  
Lakewood High School  
Lakewood, Ohio

### GENETICS WITH THE COMPUTER

by Thomas G. Luce. 1978. Entelech (Wark-Whidden House/The Hill, P.O. Box 1303, Portsmouth, New Hampshire 03801). 249 p. \$14.95.

Computers are increasingly becoming part of a student's educational experience, and *Genetics With the Computer* could provide another dimension to learning genetics. This book of programs was designed to supplement the text of a one-semester undergraduate genetics course. Though E.J. Gardner's book *Principles of Genetics* (5th ed., John Wiley and Sons, Inc., New York 1975) is referenced, most genetics textbooks could be correlated to the basic concepts explored in these programs.

Luce covers Mendelian and molecular genetics, sex and autosomal linkage, gene mapping, population genetics, and the necessary statistical computations of chi-square, t-test, standard deviation, and probability sampling. Each chapter begins with a brief description of the concepts, contains a typical student run, and ends with a listing of the program, which is in DEC-10 BASIC.

These programs offer another way for students to test and practice the concepts and skills of genetics. The obvious advantages are instant feedback from the computer and the opportunity to practice until a concept is mastered. The object of these programs is not to replace the textbook, laboratory experience, or educator.

Luce's programs adequately cover the necessary foundations of genetics. By expanding the introduction to molecular genetics the chapter could be made more valuable in teaching genetic transcription and protein synthesis and its application to genetic research at the biochemical level. Several chapters could be used to supplement other courses, e.g., review statistical measurements in ecology or transcription of DNA in general biology.

Sandra M. Yayanos  
Torrey Pines High School  
Del Mar, California

### Health

### LEARNING ABOUT SEX: A GUIDE FOR CHILDREN AND THEIR PARENTS.

by Jennifer J. Aho and John W. Petras. 1979. Holt, Rinehart and Winston (383 Madison Avenue, New York 10017). 79 p. \$7.95 hardback, \$3.95 softback.

This book covers anatomical differences between boys and girls, puberty, masturbation, sexual intercourse, preg-