

FRESHWATER FISHES OF EASTERN CANADA, 2nd Ed., W. B. Scott, 137 pp., \$5.50 (\$2.25 pap.) University of Toronto Press, Toronto, Ontario, 1967.

Prepared as a guide for game and commercial fishermen in the six eastern provinces of Canada, this book describes 154 species. In most cases a full page is used for each species. Below a photograph the common and scientific names are given along with distinguishing features, size, occurrence, life history and habits, food, and other comments. The section on life history and food is usually very brief. Under "comments" there is sometimes a discussion of the economic importance or other information useful to the fisherman. There are seven pages of keys and an extensive index.

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BIRD SONG: ACOUSTICS AND PHYSIOLOGY, Crawford H. Greenewalt, 194 pp., \$12.50, Smithsonian Institution, City of Washington, 1968.

If one could imagine that a Renaissance man existed in the latter half of the twentieth century, where might he be found? In government? In the theater? In a university? Four centuries ago he might have been in all three. But times have changed and now an establishment is said to stifle creativity in all these institutions.

Consider now the author of this book—a writer of grace and clarity, an engineer of distinction, a scientist, a scholar, a man whose delight in color is evidenced by an earlier book, *Hummingbirds*. Surely a free and searching soul. So, too, were the great figures of the Renaissance. But it is often forgotten that they were also "men of affairs." So, too, is Crawford H. Greenewalt—a business administrator, chairman of the board and tenth president of one of the exemplars of the modern soulless corporation, DuPont. Had this book no other merit it would deserve to be on school library shelves as a reminder that achievement in arts and sciences is still no more incompatible with the marketplace than it was in the agora of fifth century Athens.

So much for the author; what of his book? It is a technical contribution solidly advancing knowledge of a subject that has often been redundantly exploited. It achieves its thrust by dealing with an aspect of bird song that has previously received relatively little investigation: the physics of vocalization. What is known of the vocal organs of birds is assembled in a background chapter, and another such chapter describes the instruments used in the analysis of songs. These include the sonograph, which has been much used by ornithologists, and, additionally, modified oscilloscopes, oscillographs,

and wave analyzers. Electronic details of the instruments are given in an appendix. Most of the abundant illustration in the book is derived from the visualization of bird song by means of these instruments. Two recordings in a jacket on the back cover provide aural referents to some of the visual presentations. From the bases of anatomy, physiology, and acoustical analysis Greenewalt develops data, some of which support older hypotheses, some of which refute hypotheses, and most of which initiate the formulation of new hypotheses and problems.

In short, the book is almost a model of a scientific investigation. This may be an additional reason for putting it on the high school library shelf. An occasional senior with a background in both physics and biology and with a yen for research may find it fascinating and inspiring. Otherwise, it must be admitted, it is likely to attract few high school readers.

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HUMAN BIOLOGY

THE SCIENCE OF HEALTH, Warren R. Guild, Robert E. Fuisz, and Samuel Bojar, 532 pp., \$8.95, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1969.

A new text in health education for the undergraduate and absolutely a top-flight book. The authors are skilled writers, the illustrations are largely new line drawings, cartoon characterizations are common, and there is a frequent use of short case histories to illustrate a point. The organization is traditional enough, starting out with a definition of health, chapters on the cell and genetics, a review of the body systems with appropriate additional chapters where the system's anomalies and health implications warrant, excellent chapters on drugs, alcohol, etc., mental health and development, and concluding chapters on various aspects of health practice.

What is unusual about the text, beyond its currency, is the accurate treatment of genetics and its attention to the environmental health problems which are dealt with so inadequately in traditional books. It is a fine model for those in the business of health education and a splendid resource for the biology teacher.

GENETICS AND EVOLUTION

BIOLOGY OF THE GENE, Louis Levine, 334 pp., \$9.50, The C. V. Mosby Company, St. Louis, 1969.

A new text for a one-semester undergraduate course in genetics. It is obvious that the author has taught such a course for each chapter progresses logically to the next, and each chapter has a wealth of chapter-end

materials which show a true teacher's touch.

The title tells the emphasis, for DNA and transformation are the first topics, then chromosomes, Mendelian genetics, and finally, a variety of chapters on various aspects of genetics make up most of the book. It is a readable account and probably quite useful for teaching, and for many in high school teaching a good resource.

GENETICS AND MAN, C. D. Darlington, 382 pp., \$2.95, Schocken Books, Inc., New York, 1969.

A paperback first published in 1953, revised in 1964, and then further revised and expanded in this form. This is not a book on human genetics but rather a remarkable tour-de-force by a skilled writer on the history of genetics and the relevance of genetics for man and some of his large concepts such as evolution. The book is not for the uninitiated in genetics; yet in reading it the biologist or the biology teacher will find a wealth of new and interesting information about genetics. One is struck by the beauty of an historical approach in teaching genetics if this book could be used as a text.

This is a highly recommended book for reading by teacher and student, and for eventual use in the library.

CELL BIOLOGY

TEXTBOOK OF CYTOLOGY, Walter V. Brown and Eldridge M. Bertke, 607 pp., \$14.00, C. V. Mosby Company, St. Louis, 1969.

A new text with a veritable cornucopia of beautiful electronmicrographs. Each part of the cell has a chapter devoted to it, with ample illustrative materials, and a bibliography. The glossary alone is valuable. The organization is logical enough, starting with chapters on historical and definitive materials; chapters on techniques, instrumentation, and chemistry; chapters on cell parts; and finally chapters on cytogenetics, differentiation, and reproductive cells.

The book's currency and detail should make it an invaluable aid to biology teachers in their teaching.

Books Received

TEXTBOOK OF HISTOLOGY, 4th Ed., William F. Windle, 551 pp., \$13.50, McGraw-Hill Book Company, New York, 1969.

BEHAVIOR OF ENZYME SYSTEMS, 2nd Ed., John M. Reiner, 345 pp., \$14.50, Van Nostrand Reinhold Company, New York, 1969.

PRINCIPLES OF PHYSICAL, ORGANIC, AND BIOLOGICAL CHEMISTRY, John R. Holum, 728 pp., John Wiley and Sons, Inc., New York, 1969.