Political Ornithology

Bird Study. Andrew J. Berger. Wiley, New York, 1961. 400 pp. Illus. $9.

Bird Study is designed, according to its preface, to be used in a one-semester ornithology course for liberal arts students. Such students have seldom had extensive biological training, and their approach to ornithology can hardly be expected to be highly sophisticated. It is, therefore, a surprise to find that this text contains caustic criticisms of other workers or schools of workers (particularly in the chapters on behavior and systematics), "witty" jibes at ideas not held by the author, and facetious statements meant, apparently, to demolish the opposition. Little evidence for the views accepted or rejected is given, and students may thus be left with a biased attitude toward widely held ideas which they actually are unprepared to judge fairly. It is certainly advisable to expose beginning students to the different interpretations and approaches within a science, and, after the conflicting evidence has been fairly covered, it is perhaps even permissible for an author to indicate his own views. But care must be exercised lest students be led to accept these views uncritically. Sarcastic witticisms are out of place in such a text.

Personal bias is especially manifest in the chapter on conservation (which covers much material having little to do with ornithology), where federal farm policies are roundly lashed and a political cartoon from *Life* magazine is included. It is unusual to learn so much of an author's political position by reading his ornithology text.

The organization of the material is somewhat disturbing; portions of a subject may be covered in several different chapters. Thus anatomy appears in both the first and ninth chapters, and behavior theory is treated in at least four chapters, only one of which is entitled behavior.

The discussion of ethology includes some misleading sections; for example, displacement activities are poorly treated and mistakenly related to vacuum activity; a conflict between a "social-stimulation school" and a "hostile-behavior school" is emphasized, though it hardly exists in fact (fighting is considered by Berger as a device for "mutual stimulation," but it is difficult to see why he feels this automatically cancels its hostile nature).

A good introductory ornithology text has long been needed, and this one is certainly superior to its predecessors for it gives more extensive coverage to newer aspects of the subject and has an approach more in tune with modern evolutionary thought. It represents a welcome advance, but, unfortunately, not as great an advance as could be desired.

WILLIAM T. KEETON
Biology Section, Cornell University

Sinews or Fat

Educating Gifted Children. Robert F. DeHaan and Robert J. Havinhurst. University of Chicago Press, Chicago, Ill., ed. 2, 1961. x + 362 pp. $5.

This volume, one of several on its topic recently appearing, is a third larger than the first edition of only 4 years ago [reviewed in *Science* **126**, 615 (1957)], and it well indicates the growth of interest in the subject. Concepts of giftedness are broadening; new to this edition are chapters on creativity and on "non-intellectual" talents, as in leadership and the arts. A fifth of the total school population is considered to deserve special attention, as superior in some respect. Selection should be on the basis of a variety of testings and other evidence, should begin early (so "creative rhythms" tests may be given in the first grade "to see how well a child could follow a definite dance pattern"), and should be reviewed periodically.

A new chapter on objectives and curriculum stresses adequate planning: the teachers of each local school district should study "the characteristics of the gifted children in its own schools . . . the lives of great men . . . and our national purposes and the desires of humanity all over the world." The values of and research support for acceleration are recognized. But enrichment is "the key concept." A great variety of materials and methods are suggested for use in the regular classroom, in special groups or classes, or in the community—the book ends with a description of a "junior theatre," with a professionally trained director, to serve children with dramatic talent from the third grade through high school. Sample programs for the gifted from elementary school through college are described.

No mention was noted of possible values of work in the total education of the gifted, though a relevant summer job has been part of some programs. The chapter on evaluation omits career and other outcomes in adult life, though Terman and others have shown the importance of such follow-ups.

But, in sum, the volume inclusively reports current experimenting in this field, much of it generously subsidized. Indeed, the necessity might be inferred of an elaborateness of approach beyond the ordinarily feasible, or perhaps sometimes desirable. Might an able youngster, eager to get ahead with his education and into his life-work, need help in avoiding some of the plentitude of testings and guidings and enrichings! Might a crowded school, with no Carnegie grant in sight, refuse to consider any program for its gifted! I believe that there can be lean vigorous programs, realistic about such problems, and that more consideration should be given them.

SIDNEY L. PRESSEY
Department of Psychology,
Ohio State University

Glucuronic Acid

Chemistry of Drug Metabolism. William H. Fishman. Thomas, Springfield, Ill., 1961. xvii + 235 pp. Illus. $10.50.

The study of drug metabolism is an important field with an extensive and expanding literature; therefore current reviews are of considerable value to those engaged in research on the metabolism of drugs and toxic chemicals. William H. Fishman, the author of this monograph, is well known for his significant contributions to the study of metabolic conjugation of drugs with glucuronic acid and the biochemical role of β glucuronidase. His discussion of this topic, which comprises one-half of the book, is a welcome and timely reference. He considers in detail the chemistry of glucuronic acid, its role in carbohydrate metabolism, and its physiological and pharmacological significance. He relates drug metabolism to normal biochemical mechanisms and presents some interesting conclusions concerning the role of conjugation in solubility, penetration, and the transport of active substances to target organs. The enzymatic functions of β glucuronidase are also discussed in this context.

The remainder of the book deals with the metabolism of drugs by pathways other than glucuronic acid conjugation, and it might be considered somewhat sketchy and incomplete—for example, epinephrine metabolism is covered in two short paragraphs. Perhaps it would have made for easier reading had the author started with general mechanisms of drug metabolism rather than with specific examples. Despite these minor criticisms the book should be received with appreciation by those engaged in research on the metabolism of organic chemicals and drugs, both for its content and for its excellent bibliography.

LLOYD J. ROTH
Department of Pharmacology, University of Chicago

Controlling Hazards

Radioactive Wastes. Their treatment and disposal. J. C. Collins, Ed. Wiley, New York; Spon, London, 1960. 239 pp. Illus. $8.

The benefits of atomic energy cannot be attained without accepting the risks. Radioactive wastes provide one insidious hazard. This timely book is one of the most complete volumes yet published dealing solely with that waste problem. Eight authorities combined their talents in this excellent, highly technical but easily readable symposium volume, and they summarize work throughout the world. Of course they concentrate on Great Britain's problems and the solutions so far obtained there.

The authors are properly conservative but realistic. They offer four general precepts or guides: (i) disposal is ultimate only after radioactive decay, (ii) dispersed radioisotopes may be reconcentrated to hazardous levels, (iii) carefully scaled-up experiments are necessary before full-fledged disposal, and (iv) extensive and exhaustive environmental sampling and evaluation are necessary to document safe operation, to provide factual knowledge of the processes involved, and to relate theory, experimental data, and practice.

Half the book deals with fundamentals of radioactivity (the nature, hazards, measurement) rather than with disposal or disposal practice. That part provides a complete background, however, and is well keyed to waste disposal. Many examples enlighten the subject.

The section concerned with actual disposal describes thoroughly the theory and practice of disposing of gaseous wastes into the atmosphere, burying solid waste on land and in the sea, and disposing of liquid waste in rivers and oceans. Numerous case histories and experiences are cited. Disposal of liquids in the ground, a dominant practice in some large-volume separation plants in the United States, is treated only briefly, and only brief mention is given to problems of long-term storage of wastes in tanks, on ceramics or other materials, until adequate decay occurs. For the length of time involved in this process, no container can be guaranteed corrosion- or fail-proof and no radioactive ceramic or other fixation product guaranteed unleachable. Hence the earth features that regulate waste behavior need be known.

The experience recounted here, because it reflects the waste disposal philosophy of the United Kingdom Atomic Energy Authority, makes their practices well worth studying. More discussion of the long-term and international aspects may well be warranted.

RANDALL E. BROWN
Hanford Laboratories Operation, General Electric Company, Richland, Washington

New Books

Mathematics, Physical Sciences, and Engineering

Analytical Elements of Mechanics. vol. 2, *Dynamics*. Thomas R. Kane. Academic Press, New York, 1961. 353 pp. Illus. $6.25.

Atlas of the Universe. H. E. Butler, Ed. Nelson, New York, 1961. 226 pp. Illus. $9.95.

Ballistic Missile and Space Vehicle Systems. Howard S. Seifert and Kenneth Brown. Wiley, New York, 1961. 538 pp. Illus.

Basic Concepts of Physics. Chalmers W. Sherwin. Holt, Rinehart, New York, 1961. 421 pp. Illus. $6.50.

Calculus of Finite Differences. Charles Jordan. Chelsea, New York, ed. 2, 1960. 673 pp. $6.

Combustion, Flames and Explosions of Gases. Bernard Lewis and Guenther von Elbe. Academic Press, New York, 1961. 750 pp. Illus. $22.

Concepts of Mass. In classical and modern physics. Max Jammer. Harvard Univ. Press, Cambridge, Mass., 1961. 230 pp.

Dyeing of Cellulosic Fibres and Related Processes. S. R. Cockett and K. A. Hilton. Academic Press, New York, 1961. 430 pp. Illus. $12.

Explosion Studies of Continental Structure. Publ. 622. John S. Steinhart and Robert P. Meyer. Carnegie Institution of Washington, Washington, D.C., 1961. 422 pp. Illus. Paper, $2.50; cloth, $3.

Geology of the Arctic. vols. 1 and 2. Gilbert O. Raasch, Ed. Univ. of Toronto Press, Toronto, Canada, 1961. 1210 pp. + maps. Illus. $25.50.

Introduction to Chemical Engineering. L. Bryce Andersen and Leonard A. Wenzel. McGraw-Hill, New York, 1961. 376 pp. Illus. $9.50.

An Introduction to Information Theory. Fazlollah M. Reza. McGraw-Hill, New York, 1961. 517 pp. Illus. $13.50.

Lectures on the Calculus of Variations. Oskar Bolza. Chelsea, New York, ed. 2, 1961. 280 pp. Illus. Paper, $1.19; cloth, $3.25.

Mathematics in the Making. Lancelot Hogben. Doubleday, Garden City, N.Y., 1960. 320 pp. Illus. $9.95.

A Modern Introduction to Organic Chemistry. William B. Smith. Merrill, Columbus, Ohio, 1961. 271 pp. Illus.

Namenreaktionen der Organischen Chemie. Ein Beitrag zur Terminologie der organischen Chemie, Biochemie und theoretischen organischen Chemie. Helmut Krauch and Werner Kunz. Hüthig, Heidelberg, Germany, 1961. 591 pp. Illus. DM. 46.

New Thinking in School Mathematics. Organization for European Economic Cooperation, Paris, 1961. 246 pp. $2.50.

The Organic Chemistry of Boron. W. Gerrard. Academic Press, London, 1961. 318 pp. Illus. $9.

Pressurized Packaging. Aerosols. A. Herzka and J. Pickthall. Academic Press, New York; Butterworth, London, ed. 2, 1961. 520 pp. Illus. $15.

Principles and Applications of Paper Electrophoresis. Ch. Wunderly. Elsevier, New York, 1961 (order from Van Nostrand, Princeton, N.J.). 253 pp. Illus.

Programming and Coding for Automatic Digital Computers. G. W. Evans and C. L. Perry. McGraw-Hill, New York, 1961. 261 pp. Illus. $9.50.

Progress in Cryogenics. vol. 3. K. Mendelssohn, Ed. Academic Press, New York, 1961. 177 pp. Illus. $8.

Quantitative Organic Microanalysis. Al Steyermark. Academic Press, New York, ed. 2, 1961. 682 pp. Illus. $16.50.

The Rare Earths. F. H. Spedding and A. H. Daane, Eds. Wiley, New York, 1961. 652 pp. Illus. $14.75.

The Royal Society International Geophysical Year Antarctic Expedition, Halley Bay, Coats Land, Falkland Islands Dependencies, 1955-1959. vol. 1. Introductions. Aurora and airglow. Geomagnetism. Sir David Brunt, Ed. Royal Society, London, 1960. 420 pp. Illus. $23.

Space Power Systems. Nathan W. Snyder, Ed. Academic Press, New York, 1961. 649 pp. Illus. $6.

Stability in Nonlinear Control Systems. Alexander M. Letov. Translated from the Russian by J. George Adashko. Princeton Univ. Press, Princeton, N.J., 1961. 330 pp. Illus. $8.50.

Theory of Elasticity. V. V. Novozhilov. Translated from the Russian by J. K. Lusher. Pergamon, New York, 1961. 460 pp. Illus. $12.50.

Transactions of the Second Prague Conference on Information Theory, Statistical Decision Functions, Random Processes. Publishing House of the Czechoslovak Acad. of Sciences, Prague; Academic Press, New York, 1960. 843 pp. $22.