Holiday Science Lectures

Heredity and the Nature of Man. Theodosius Dobzhansky. Harcourt, Brace, and World, New York, 1964. x + 179 pp. $4.75.

This book, based on the Holiday Science Lectures sponsored by the American Association for the Advancement of Science, is an outstanding statement of the genetical view of mankind and the humanistic view of genetics. Its five chapters contain a remarkably succinct, completely authoritative statement of biological and evolutionary problems literally vital to all of us.

The first two chapters enliven and unify the discussion by following a historical sequence. Chapter 1, on the nature of heredity, proceeds from the earlier organismic genetics, still so active and fruitful in the hands of this author, among others, to the recent triumphs of molecular genetics. The second chapter relates those facts to human individuality and to the interactions of genotypes and phenotypes. The ever-present and burning problems of race are next treated with calmness and great common sense: races do exist and do differ in genetic qualities; the differences do not warrant any conclusion with respect to overall superiority; race has no sensible connection with human worth and rights.

A chapter on genetic load and radiation hazard reviews evolutionary principles at rather less than the irreducible minimum. The explanation of stated issues involved in induction of harmful mutations also seems insufficient. Yet here, too, what is too briefly said is well said and is worth saying. The final topic, "Whither mankind," includes the interaction of biological and cultural evolution, with special note that natural selection does continue to act strongly within civilized populations and with complex effects, neither all good nor all bad. The author views the human future with mild optimism.

The subjects of this book were earlier treated by Dobzhansky with much greater technical detail and fuller documentation in *Mankind Evolving* [Yale University Press, 1962; reviewed in *Science* **136**, 142 (1962)]. *Heredity and the Nature of Man*, a briefer and simpler restatement, should reach an even wider audience.

G. G. SIMPSON
Museum of Comparative Zoology, Harvard University

Research Résumé

Spectroscopy and Photochemistry of Uranyl Compounds. Eugene Rabinowitch and R. Linn Belford. Pergamon, London; Macmillan, New York, 1964. x + 370 pp. Illus. $12.50.

In the preface the authors state that their aim in writing this book was to provide a comprehensive guide to past work as an aid to active researchers in the field. They have certainly succeeded in this purpose.

In the first two chapters Rabinowitch and Belford present a large amount of data on the ultraviolet and visible absorption and fluorescence spectra of uranyl complexes in the solid state and in solution. Some infrared absorption and Raman spectral studies are also reported. The results are presented in a fairly complete fashion, and the interpretations by the original workers are presented. Work done from 1833 to 1960 is covered. In the chapter on solutions, work on hydrolytic species, as well as on uranyl ions complexed with anions in aqueous solution and in some organic solvents, is considered.

The third chapter, on intensity and decay of uranyl fluorescence, commences with a concentrated presentation of the theory of intensity and decay of fluorescence as it applies to the uranyl ion. A discussion of such work done on fluorescence in crystals and in solutions is then presented.

Chapter four, on the photochemistry of uranyl compounds, begins with a fairly thorough discussion of the photochemical reaction of UO_2^{++} with I^- to form U(IV) and I_2. Brief mention of photochemical reactions with other inorganic reductants precedes a long section on photochemical reactions of uranyl ions with various organic acids, and finally such reactions with alcohols.

A brief discussion of the present status of the theory of electronic structures and spectra of the uranyl ion is given in the final chapter. It is made clear that much remains to be done toward developing a satisfactory theory.

This book is a very important one for research workers in the field of electronic absorption and fluorescence spectroscopy or photochemistry of uranyl compounds. There are a few typographical errors and careless statements, but they should not cause much trouble. Those who are working in the field will find that this book saves them countless hours of literature searching and provides a composite picture of the work that has been done. It also indicates in what direction future research may be profitable.

LLEWELLYN H. JONES
Los Alamos Scientific Laboratory, University of California, Los Alamos, New Mexico

New Books

Biological and Medical Sciences

Advances in Agronomy. vol. 16. A. G. Norman, Ed. Academic Press, New York, 1964. 426 pp. Illus. $13.50. Nine papers: "Field plant physiology" by D. E. McCloud, R. J. Bula, and R. H. Shaw; "Crop response to fertilizers in relation to content of 'available' phosphorus" by G. L. Terman, W. M. Hoffman, and B. C. Wright; "Objectives in corn improvement" by G. H. Stringfield; "Salinity in relation to irrigation" by Lowell E. Allison; "Response of plants to the physical effects of soil compaction" by Norman J. Rosenberg; "Nitrate accumulation in crops and nitrate poisoning in animals" by Madison J. Wright and Kenneth L. Davison; "Characterizing soil oxygen conditions with a platinum microelectrode" by L. H. Stolzy and J. Letey; "Some parameters of population variability and their implications in plant breeding" by R. W. Allard and P. E. Hansche; and "Amorphous inorganic materials in soils" by B. D. Mitchell, V. C. Farmer, and W. J. McHardy.

Advances in Lipid Research. vol. 2. Rodolfo Paoletti and David Kritchevsky, Eds. Academic Press, New York, 1964. 511 pp. Illus. $16. Eight papers: "Triglyceride structure" by R. J. VanderWal; "Bacterial lipids" by M. Kates; "Phosphatidylglycerols and lipoamino acids" by Marjorie G. Macfarlane; "The brain phosphoinositides" by J. N. Hawthorne and P. Kemp; "The synthesis of phosphoglycerides and some biochemical applications" by L. L. M. van Deenen and G. H. de Haas; "The lipolytic and esterolytic activity of blood and tissues and problems of atherosclerosis" by T. Zemplényi; "Evaluation of drugs active against experimental atherosclerosis" by Robert Hess; and "Comparative evaluation of lipid biosynthesis *in vitro* and *in vivo*" by P. Favarger.

Arachnida. Theodore Savory. Academic Press, New York, 1964. 303 pp. Illus. $9.50.

Biochemical Diseases (Chemical Pediatrics). I. Newton Kugelmass. Thomas, Springfield, Ill., 1964. 1249 pp. $35.50.

Biochemistry of Muscle Contraction. Proceedings of a conference (Dedham, Mass.), May 1962. John Gergely, Ed. Little, Brown, Boston, 1964. 608 pp. Illus. $18. The papers are presented in the following sections: Myosin (11 papers); Actin (7 papers); Interaction of myosin and actin (9 papers); Structure of striated muscle (4 papers); Smooth muscle, paramyosin, and

(Continued on page 431)