were important at the undergraduate and graduate level as producers of humanists. The processes of educational selection and educational and occupational choice are very complex. Knapp has done a good job in presenting one part of the picture in a readable fashion. It would be a more valuable study if he had been able to analyze more of the variables that are important in the process of becoming a humanist. It may seem unfair to criticize a study for something it did not attempt, but the importance of variables like socio-economic background, ability level, and institutional quality have been demonstrated in other research. Failure to include them in this study limits to a considerable degree the importance of the findings.

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Nuclear Engineering

Numerical Methods of Reactor Analysis. Melville Clark, Jr., and Kent F. Hansen. Academic Press, New York, 1964. xiii + 340 pp. Illus. $10.50.

Numerical Methods of Reactor Analysis is a noteworthy addition to the list of textbooks available for use in educational programs in nuclear engineering. This excellent book, which assumes an intermediate-level familiarity with nuclear reactor analysis and a basic knowledge of differential equations, develops those aspects of numerical analysis most frequently encountered in reactor analysis and discusses specific applications. Emphasis is placed on problem-solving techniques and numerical methods commonly used in the application of digital computers to the solution of problems in reactor physics.

The first three chapters are devoted to matrix theory and numerical analysis. These chapters are sufficiently comprehensive and detailed to provide a self-contained course of study for the nonspecialist. Later chapters describe multigroup diffusion theory, transport theory, and the Monte Carlo method. The Boltzmann transport equation, velocity relations for nuclear events, the moments method for neutrons, and special functions are described in useful appendices. Each chapter is provided with problems that illustrate the material covered or extend the breadth and depth of the coverage. The individual chapters are well referenced. In addition, succinct comments that accompany the reference lists direct the reader's attention to the most fruitful sources for specific topics.

The book is written in a crisp, lucid style that should appeal to the engineer who is interested in the practical aspects of reactor analysis. In general, the material is well chosen and the presentation is factual and objective. One exception is the chapter on Monte Carlo techniques. Here, in my opinion, the discussion of limitations, though appropriate, is overly severe.

Numerical Methods of Reactor Analysis should serve admirably as the principal text for an intermediate-level course in reactor analysis or as a supplementary text for an advanced course in reactor physics. In addition to its usefulness as a textbook, the volume will provide an informative survey for the practicing engineer or an introduction to the field for the would-be specialist in reactor computation.

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Book Award

Kirtley F. Mather's *The Earth Beneath Us* (Random House, New York, 1964) has been awarded the Thomas Alva Edison Foundation's tenth Edison award for the best science book for young people. This book was reviewed in *Science* [**147**, 852 1965)].

New Books

Biological and Medical Sciences

Advances in Protein Chemistry. vol. 20. C. B. Anfinsen, Jr., M. L. Anson, John T. Edsall, and Frederic M. Richards, Eds. Academic Press, New York, 1965. 389 pp. Illus. $14.50. Four papers: "Thrombosthenin, the contractile protein from blood platelets and its relation to other contractile proteins" by M. Bettex-Galland and E. F. Lüscher; "Hydrolysis of proteins" by Robert L. Hill; "The unusual links and cross-links of collagen" by John J. Harding; and "The chemistry of keratins" by W. G. Crewther, R. D. B. Fraser, F. G. Lennox, and H. Lindley.

Advances in Radiation Biology. vol. 1. Leroy G. Augenstein, Ronald Mason, and Henry Quastler, Eds. Academic Press, New York, 1964. 295 pp. Illus. $11. Six papers: "Recent research on the radiation chemistry of aqueous solutions" by Harold A. Schwarz; "Physical mechanisms in photosynthesis" by Gordon Tollin; "Effects of intracellular irradiation with tritium" by Donald E. Wimber; "Effects of small doses of ionizing radiations" by Arne Forssberg; "The radiation chemistry of amino acids" by J. Liebster and J. Kopoldová; and "The relative roles of ionization and excitation processes in the radiation inactivation of enzymes" by Leroy G. Augenstein, Tor Brustad, and Ronald Mason.

Advances in Tracer Methodology. vol. 2. A collection of papers presented at the sixth (New York, November 1962); seventh (Los Angeles, March 1963); and eighth (Chicago, November 1963) symposia on tracer methodology plus other selected papers. Seymour Rothchild, Ed. Plenum Press, New York, 1965. 329 pp. Illus. $12.50. Thirty-four papers: Methods for Labeling Compounds (6 papers); Special Analytical Techniques (9 papers); Biochemical Applications (5 papers); Clinical Applications (13 papers); and Health Physics (1 paper); and a paper on the early history of carbon-14.

Bacterial and Mycotic Infections of Man. René J. Dubos and James G. Hirsch, Eds. Lippincott, Philadelphia, ed. 4, 1965. 1039 pp. Illus. $14.50.

Biochemical Aspects of Neurological Disorders. John N. Cumings and Michael Kremer, Eds. Davis, Philadelphia, Pa., 1965 (second series). 336 pp. Illus. $11. Eighteen papers contributed by J. M. Barnes, John N. Cumings, G. Curzon, P. C. Gautier-Smith, R. W. Gilliatt, R. A. Henson, Michael Kremer, Walpole Lewin, Brian McArdle, Vincent Marks, D. M. Matthews, R. J. Pennington, R. T. C. Pratt, Derek Richter, J. A. Simpson, Eliot Slater, R. H. S. Thompson, and John N. Walton.

Biology. Alfred M. Elliott and Charles Ray, Jr. Appleton-Century-Crofts (Meredith), New York, ed. 2, 1965. 895 pp. Illus. $8.50.

The Biology of Tissue Transplantation. Paul S. Russell and Anthony P. Monaco. Little, Brown, Boston, 1965. 217 pp. Illus. $6.75.

The Biosynthesis of Macromolecules. Vernon M. Ingram. Benjamin, New York, 1965. 239 pp. Illus. Paper, $3.95; cloth, $8. Biology Teaching Monograph Series.

Cell Biology. John Paul. Stanford Univ. Press, Stanford, Calif., 1965. 207 pp. Illus. $4.75.

Chemotaxonomie der Pflanzen. vol. 3, *Dicotyledoneae: Acanthaceae-Cyrillaceae*. R. Hegnauer. Birkhauser, Basel, Switzerland, 1964. 743 pp. Illus. F. 123.

Clinical Phonocardiography. Dennis C. Deuchar. Van Nostrand, Princeton, N.J., 1965. 144 pp. Illus. $3.75.

Cold Spring Harbor Symposia on Quantitative Biology. vol. 29, *Human Genetics*. Biological Laboratory, Long Island Biological Assoc., Cold Spring Harbor, N.Y., 1964. 506 pp. Illus. $15. Forty-five papers given at the symposium; the topics included: Population Studies (13 papers); Genetics of Somatic Cells and Cells in Culture (13 papers); and Human Proteins (19 papers).

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