

production and control, suitable for a course for electrical engineers. The specialized fields of ultrasonics and of sound recording are not included, but the analysis of microphone and loudspeaker properties, of room acoustics, the treatment of noise measurement and control are given in considerable detail and are up-to-date. In addition there is a short discussion of the aspects of the psychoacoustics of hearing and of speech intelligibility which are pertinent to the rest.

The treatment is chiefly by use of the analogy between electric and mechanical circuits, the steady-state and transient behavior of the electrical, mechanical, and acoustical elements is expressed in terms of equivalent impedances, their intercoupling by means of equivalent circuits. There are discussions of directivity patterns for both loudspeakers and microphones, of the use of baffles and resonant enclosures to improve loudspeaker behavior and of the properties of horns of various shapes. The discussion of room acoustics includes some of the more recent developments of criteria for acoustic criteria. The section on noise control includes a discussion of the properties of noise sources and of the attenuation of sound by walls and through ducts. At the back of the book are 22 pages of problems, 12 pages of tables of conversion factors and a 12-page index. (481 pp.; McGraw-Hill Book Company, Inc., New York, 1954; \$9.00.)

Nuclear Engineering

Raymond L. Murray's *Introduction to Nuclear Engineering* (418 pp.; Prentice-Hall, Inc., New York, 1954; \$9.35) is a very comprehensive treatment on an advanced undergraduate level. Starting with a review of atomic and nuclear physics, the book treats reactor principles and construction, the design of auxiliary equipment such as heat exchangers, shielding, and detection instruments, and a description of some experiments that can be performed with neutrons. The last three chapters deal with the uses of isotopes, the nuclear propulsion of airplanes, submarines, and rockets, and the production of electrical power from reactors. Numerous references add to the utility of the text.

Books Received

THE ELEMENTS OF ASTRONOMY. A Nonmathematical Textbook for Use as an Introduction to the Subject in Colleges, Universities, etc., and for the General Reader (Revised Fifth Edition). By Edward Arthur Fath. 369 pp. McGraw-Hill Book Company, Inc., New York, 1955. \$5.50.

PROCEEDINGS OF THE EASTERN JOINT COMPUTER CONFERENCE (Philadelphia, December 1954). 92 pp. Published by the American Institute of Electrical Engineers, New York, 1955. \$3.00.

AN INTRODUCTION TO THE ELECTRONIC THEORY OF VALENCY (Revised Third Edition). By J. C. Speakman. 180 pp. (Edward Arnold, England) St. Martin's Press, Inc., New York, 1955. \$2.50.

EINFÜHRUNG IN DIE QUANTENELEKTRODYNAMIK. By Walter Thirring. 122 pp. Franz Deuticke, Vienna, Austria, 1955. DM 17.50.

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SOME ASPECTS OF THE CRYSTALLIZATION OF HIGH POLYMERS. Communication No. 276. By G. Schuur. 82 pp. Rubber-Stichting, Delft, Netherlands, 1955. Paperbound 5 Dutch florins.

SOME FUNDAMENTALS OF COMBUSTION. Volume II of Gas Turbine Series. By D. B. Spalding. 250 pp. (Butterworths, England) Academic Press Inc., New York, 1955. \$7.50.

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PETROGRAPHIC MINERALOGY. By Ernest E. Wahlstrom. 408 pp. (Chapman & Hall, England) John Wiley & Sons, Inc., New York, 1955. \$7.75.

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE OF THEORETICAL PHYSICS (Kyoto and Tokyo, Japan, September 1953). 942 pp. Maruzen Co., Ltd., and Kinokuniya Book Store Co., Ltd., Tokyo, Japan, retailers. Published by the Science Council of Japan, Conference Committee, 1955. \$10.00 (Postage \$1.00).

MACHINE TRANSLATION OF LANGUAGES. Fourteen Essays. Edited by William N. Locke and A. Donald Booth. 243 pp. (Chapman & Hall, England) The Technology Press of Massachusetts Institute of Technology and John Wiley & Sons, Inc., New York, 1955. \$6.00.

VAPOR-PLATING. The Formation of Coatings by Vapor Deposition Techniques. By C. F. Powell, I. E. Campbell, and B. W. Gonser. 158 pp. (Chapman & Hall, England) John Wiley & Sons, Inc., New York, 1955. \$5.50.

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MODERN PHYSICS. By John C. Slater. 322 pp. McGraw-Hill Book Company, Inc., New York, 1955. \$5.50.

ESSENTIALS OF BIOLOGICAL AND MEDICAL PHYSICS. By Ralph W. Stacy, David T. Williams, Ralph E. Worden, and Rex O. McMorris. 586 pp. McGraw-Hill Book Company, Inc., New York, 1955. \$8.50.

THIS WORLD OF OURS. By Abram Glaser. 492 pp. Philosophical Library, New York, 1955. \$5.00.

DIELECTRIC BEHAVIOR AND STRUCTURE. Dielectric Constant and Loss, Dipole Moment, and Molecular Structure. By Charles Phelps Smyth. 441 pp. McGraw-Hill Book Company, Inc., New York, 1955. \$9.00.

QUANTUM THEORY OF SOLIDS. By R. E. Peierls. 229 pp. Oxford University Press, New York, 1955. \$4.80.

BASIC PROCESSES OF GASEOUS ELECTRONICS. By Leonard B. Loeb. 1012 pp. University of California Press, Berkeley, California, 1955. \$13.50.

REPORT OF THE COMMITTEE ON THE MEASUREMENT OF GEOLOGIC TIME, 1953-54. NAS-NRC Publication 333. John Putnam Marble, Chairman. 193 pp. National Academy of Sciences-National Research Council, Washington 25, D. C., 1955. Paperbound \$1.75.

PRACTICAL PHYSICS (Second Edition). By Marsh W. White, Kenneth V. Manning, and Robert L. Weber. 484 pp. McGraw-Hill Book Company, Inc., New York, 1955. \$5.50.