

of economic systems. Tustin suggests transmuting these models into analog computers to investigate their functioning in detail, and he gives specific designs that might find such application. A long chapter on the mathematical analysis of system behavior makes the book self-contained for the novice. Altogether a stimulating and intriguing study that many physicists will find of interest.

Combustion

The *Fourth Symposium on Combustion* (926 pp.; The Williams and Wilkins Co., Baltimore, Maryland, 1953; \$7.00) is a collection of summaries of nine survey papers, one hundred and three contributed papers, and the transcriptions of two round table discussions on combustion and detonation waves. The material was presented at an international symposium held at Massachusetts Institute of Technology, September 1952. The symposium emphasized the physical problems of combustion, particularly the experimental and theoretical aspects of wave phenomena and turbulence. The topics included flammability, ignition, laminar combustion and detonation waves, cellular flames and oscillatory combustion, turbulent flames, stabilization by flame holders, flames of fuel jets, burning of fuel droplets and combustion in rockets and engines. Although the book is directed primarily to workers in the field, its organization and the detailed survey papers make it a relatively simple matter for the outsider to become familiar with the subject. The various experimental and analytical techniques presented would alone recommend it to all physicists.

Progress in Physics

The latest edition of *Reports on Progress in Physics* (Vol. XVII; edited by A. C. Stickland; 280 pp.; The Physical Society, London, 1954; Non-Fellows £2 10s, Fellows 27s 6d) contains a total of eight articles on various topics of current interest. The first, by M. H. L. Pryce, is a summary of the present state of nuclear shell structure with emphasis on recent work. Diffraction theory is considered by C. J. Bouwkamp, whose comprehensive review is both a survey of progress in the field and an introduction to general diffraction theory. Papers by J. Alan Chalmers and C. W. Allen deal with several aspects of atmospheric electricity and the physical condition of the solar corona respectively. A short contribution by Edward Teller is devoted to the origin of cosmic rays. Atomic valence states and chemical binding are considered by W. Moffitt, who presents a general theory of the electronic structure of molecules. Experimental and theoretical work on antiferromagnetism are summarized by A. B. Lidiard, and the last paper, by B. H. Briggs and M. Spencer, surveys existing knowledge of horizontal movements in the ionosphere as obtained by radio methods. Each article is also available as an individual monograph: for information, write to The Physical Society, 1 Lowther Gardens, Prince Consort Road, London, S. W. 7.

Books Received

ART IN SCIENCE. 32 plates from *Scientific American*. Simon and Schuster, Publishers, New York, 1954. \$6.00.

EINIGE FRAGEN ZUR THEORIE DER LUMINESZENZ DER KRISTALLE. By E. I. Adirawitsch (Translated from Russian by H. Vogel). 298 pp. Akademie-Verlag, Berlin, East Germany, 1953. DM 19.00.

ADVANCES IN CATALYSIS AND RELATED SUBJECTS. Volume VI. Edited by W. G. Frankenburg, V. I. Komarewsky, and E. K. Rideal. 467 pp. Academic Press Inc., New York, 1954. \$10.50.

MASS SPECTROMETRY. By A. J. B. Robertson. 135 pp. (Methuen & Co., England) John Wiley & Sons, Inc., New York, 1954. \$2.00.

EXPLORING MARS. By Robert S. Richardson. 261 pp. McGraw-Hill Book Company, Inc., New York, 1954. \$4.00.

INTRODUCTION TO THEORETICAL MECHANICS. By Robert A. Becker. 420 pp. McGraw-Hill Book Company, Inc., New York, 1954. \$8.00.

MAGNETIC CONTROL OF INDUSTRIAL MOTORS (Second Edition). By Gerhart W. Heumann. 714 pp. John Wiley & Sons, Inc., New York, 1954. \$9.50.

PHYSIKERTAGUNG INNSBRUCK, HAUPTVORTRÄGE (September 1953 Conference). Edited by H. Auer, E. Brüche, and R. Steinmauer. 138 pp. Physik Verlag, Mosbach/Baden, Germany, 1954. DM 19.20.

TREASURY OF PHILOSOPHY. Edited by Dagobert D. Runes. 1280 pp. Philosophical Library, New York, 1954. \$15.00.

RELATIVITY FOR THE LAYMAN. By James A. Coleman. 131 pp. The William-Frederick Press, New York, 1954. \$2.75.

APPLIED GEOPHYSICS IN THE SEARCH FOR MINERALS (Fourth Revised Edition). By the late A. S. Eve and D. A. Keys. 382 pp. Cambridge University Press, New York, 1954. \$7.50.

NUCLEAR GEOLOGY (A Symposium on Nuclear Phenomena in the Earth Sciences). Edited by Henry Faul. 414 pp. (Chapman & Hall, England) John Wiley & Sons, Inc., New York, 1954. \$7.00.

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ACTIONS OF RADIATIONS ON LIVING CELLS (Second Edition). By the late D. E. Lea. 416 pp. Cambridge University Press, New York, 1955. \$6.00.

DEVELOPMENT OF THE GUIDED MISSILE (Second Revised Edition). By Kenneth W. Gatland. 292 pp. (Iliffe & Sons, England) Philosophical Library, Inc., New York, 1954. \$4.75.

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GLASS REINFORCED PLASTICS. Edited by Phillip Morgan. 248 pp. (Iliffe & Sons, England) Philosophical Library, Inc., New York, 1954. \$10.00.

THE DEVELOPMENT OF THE CONCEPT OF ELECTRIC CHARGE. ELECTRICITY FROM THE GREEKS TO COULOMB. Case 8 in Harvard Case Histories in Experimental Science. By Duane Roller and Duane H. D. Roller. 97 pp. Harvard University Press, Cambridge, Massachusetts, 1954. Paperbound \$1.60.