

Books of the Week

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ANALYSIS INSTRUMENTATION 1964: Proceedings of the Tenth National Analysis Instrumentation Symposium—L. Fowler, R. J. Harmon and D. K. Roe, Eds.—Plenum Press, 340 p., illus., \$14.50. Covers latest developments in process and laboratory instrumentation.

ANIMALS OF THE FAR NORTH—Charles Paul May—Abelard-Schuman, 160 p., illus. by Edward Osmond, \$3.50. Tells boys and girls about the mammals, birds, fishes and insects that live within the Arctic Circle.

ASTRONOMY FOR THE LAYMAN—Arthur T. Adams—Vantage Press, 228 p., illus., \$3.95. Amateur astronomer's presentation of facts about the universe.

BARRON'S PROFILES OF AMERICAN COLLEGES: All the Facts You Need to Choose Your College—Benjamin Fine—Barron's Educ. Series, 696 p., paper, \$3.95. Summaries of every aspect of more than 1100 regionally accredited four-year colleges and universities, arranged by states.

BASIC CONCEPTS OF GEOMETRY—Walter Prenowitz and Meyer Jordan—Blaisdell Pub. Co., 350 p., diagrams, \$7.50. Intended primarily for an advanced undergraduate or introductory course for mathematics majors.

BIBLIOGRAPHY OF PROCEEDINGS OF INTERNATIONAL MEETINGS HELD IN 1958—Union of International Assns. (Brussels), 398 p., \$10; paper, \$8. Volume two of series supported by the National Science Foundation to serve as a reference tool for scientists and others concerned with the results of international meetings.

THE COMPUTER AGE: And Its Potential for Management—Gilbert Burck and the Editors of FORTUNE—Harper, 148 p., illus., \$3.95. An examination of the growing importance of the computer and the competitive battle of the computer manufacturers.

COMPUTER AND INFORMATION SCIENCES: Collected Papers on Learning, Adaptation and Control in Information Systems—Julius T. Tou and Richard H. Wilcox, Eds.—Spartan Bks., 544 p., diagrams, \$13.85. Papers presented at 1963 COINS Symposium cover wide variety of topics such as storage of neural networks, pattern recognition and problems in adaptive control.

COST CONTROL IN SOUTHERN FORESTRY—Robert W. McDermid, Ed.—La. State Univ. Press, 131 p., \$4. Symposium proceedings, deal with the economic reasoning involved in the establishing, managing and harvesting of timber products.

DICTIONARY OF HYPNOSIS—Ralph B. Winn—Philosophical Lib., 124 p., \$3.75. In layman's language explains related terminology from Abreaction to Zoomagnetism.

DOCUMENTS ON DISARMAMENT 1963—U.S. Arms Control and Disarmament Agency—GPO, 740 p., paper, \$2. Indexed volume of basic official docu-

ments regarding international developments on disarmament and related matters arranged in chronological order.

DUCKS, GEESE AND SWANS—Bertel Bruun—Odyssey Bks., 45 p., illus. by Leif Rydeng, 95¢. Pocket-size guide to the habits of some water birds.

ENVIRONMENT AND ARCHEOLOGY: An Introduction to Pleistocene Geography—Karl W. Butzer—Aldine Pub. Co., 524 p., illus., maps, \$12.50. A comprehensive introduction to Pleistocene research, reconstructing the physical environments and man-land relationships of prehistory.

EXPLODING WIRES, Vol. 3—William G. Chace and Howard K. Moore—Plenum Press, 410 p., illus., \$17.50. Proceedings of the 1964 Conference reporting progress on exploding wire phenomenon theory, methods of study, and the various applications of exploding wires, foils and films.

FACTS OF INDIAN THOUGHT—Betty Heilmann—Schocken Bks., 177 p., \$4.95. Scholarly discussion of Hindu metaphysics, religion, ethics, logic, mathematics, psychology, geography and etymology.

FLUID AMPLIFIER APPLICATION STUDIES—General Electric Company—NASA (OTS), multipaged, illus., paper, \$3. Presents data and conclusions concerning reliability studies and best applications of fluid amplifiers.

GENTLE WILDERNESS: The Sierra Nevada—John Muir; David Brower, Ed.—Sierra Club, 167 p., photographs in color by Richard Kaufman, \$25. A visual delight, this book acquaints the reader with the seasonal changes in the Sierra wilderness, from Sequoia woods to glacial lakes.

INTERPRETED INFRARED SPECTRA, Vol. 1—Herman A. Szymanski—Plenum Press, 293 p., illus., \$10.75. Series of spectral recordings with all significant bands identified, groups of compounds included are alkanes, alkenes, benzene ring compounds, cyclobutane, cyclohexane and cyclopentane derivatives.

LOGIC FOR BEGINNERS: Through Games, Jokes and Puzzles—Irving Adler—Day, 158 p., illus. by Ruth Adler, \$3.50. Presents 285 simple brain teasers for boys and girls.

MAKE YOUR OWN MOBILES—T. M. Schegger—Sterling, 96 p., illus., \$2.95. Fun with balance, shapes and colors.

MAN AND THE WORLD OF SCIENCE—Harry A. Kuljian—Barnes, A. S., 142 p., illus., \$6.50. Gives a condensed outline of man's history in relation to the universe, from the early Greek philosophers and mathematicians to present-day theories in physics and astronomy.

MATHEMATICAL THEORY OF OPTICS—R. K. Luneburg, foreword by Emile Wolf, supplementary notes by M. Herzberger—Univ. of Calif. Press, 448 p., illus., \$12.50. A highly original, thorough and systematic account of the foundations of several branches of optics, showing the relationship of both geometrical and scalar diffraction optics to electromagnetic theory.

MATHEMATICS AND LOGIC IN HISTORY AND IN CONTEMPORARY THOUGHT—Ettore Carruccio, transl. from Italian by Isabel Quigly—Aldine Pub. Co., 398 p., diagrams, \$8.75. Covers the evolution of mathematics from ancient times to our own day.

MICROWAVE CIRCUITS—Jerome L. Altman—Van Nostrand, 462 p., diagrams, \$15. A graduate course dealing with such microwave passive devices as hybrids, couplers, attenuators, polarizers and filters, treatment is largely mathematical.

MIRACLE PLASTICS—Ellsworth Newcomb and Hugh Kenny—Putnam, 157 p., illus. by Robert Bartlam, \$3.50. Survey of the development of plastics, for young people.

MOTION OF CHARGED PARTICLES IN THE EARTH'S MAGNETIC FIELD—Joseph W. Chamberlain—Gordon & Breach, 33 p., diagrams, \$3.95; paper, \$1.95. Brief introduction to an area of plasma physics of primary interest to geophysicists, deals with the orbit theory of particles in a magnetic field.

PARTICULATE CLOUDS: Dusts, Smokes and Mists, Their Physics and Physical Chemistry, and Industrial and Environmental Aspects—H. I. Green and W. R. Lane, foreword by Sir Harold Hartley—

Van Nostrand, 2nd ed., 471 p., 8 plates, \$13.50. This enlarged edition of textbook incorporates advances since 1957.

PESTS OF FIELD CROPS—F. G. W. Jones and Margaret G. Jones—St. Martins, 406 p., 32 plates, illus., \$10. Covers the whole range of animal pests, arthropods, slugs, nematodes, mammals and birds, and discusses crops and their pests together with control measures.

PROBLEMS OF SOLAR ACTIVITY—B. M. Rubashev, transl. from Russian—NASA (OTS), 393 p., diagrams, paper, \$7. Monograph deals with the cyclic character of solar activity, the structure and dynamics of the subphotospheric layers, energy sources and manifestations of solar activity in the upper and lower layers of the earth's atmosphere.

PROCEEDINGS, FOOD IN THE FUTURE: Concepts for Planning—Dairy & Food Industries Supply Assn., 88 p., illus., paper, \$2.50 direct to publisher, 1145 - 19th St. NW, Washington, D.C. Symposium papers and discussions on technological and scientific changes in the food industry.

PROCEEDINGS OF THE AMERICAN DOCUMENTATION INSTITUTE, Vol. 1: Parameters of Information Science Annual Meeting 1964—Arthur W. Elias, Ed.—Spartan Bks., 521 p., illus., \$15.85. Preprint of papers ranging from concept analysis by syntax processing to document compaction by variable length encoding.

PROTEINS: THEIR CHEMISTRY AND POLITICS—Aaron M. Altshul—Basic Bks., 337 p., illus., \$7.50. In nontechnical language the book deals with the role of proteins in the human diet and the problems of world protein supply.

THE PSYCHOANALYTIC STUDY OF SOCIETY, Vol. III—Warner Muensterberger and Sidney Axelrad, Eds.—Internat'l Univ. Press, 408 p., illus., \$7.50. Continuation of series originally founded by Geza Roheim under the title Psychoanalysis and the Social Sciences.

PUBLIC HEALTH SERVICE GRANTS, FISCAL YEAR 1963 FUNDS AND AWARDS—Part V: Summary Tables for the Extramural Programs—PHS (GPO), 725 p., paper, \$2.25. Tables provide a broad view of requests for support and the nature of the support given by the U.S. Public Health Service.

THE SCIENTIFIC PRINCIPLES OF CROP PROTECTION—Hubert Martin—St. Martins, 5th ed., 376 p., \$15. The object of this survey is to present to the mycologist and entomologist the physicochemical factors and to provide the chemist and physicist with a means of approach to the biological side of the problem of crop protection that requires the coordinated efforts of all.

SPACE: Its Impact on Man and Society—Lillian Levy, Ed.—Norton, 228 p., \$4.50. Twenty experts present their views on political, economic, social, religious and philosophical implications of space exploration.

THE UNIVERSE AND DR. EINSTEIN—Lincoln Barnett, foreword by Albert Einstein—New Am. Lib., 128 p., photographs, illus., paper, 60¢. Reissue of second revised edition.

• Science News Letter, 87:60 January 23, 1965

EDUCATION

Nobel Laureate Stresses Need of Mathematics

► A NOBEL PRIZE WINNER proclaims that no one should receive a college degree unless he knows calculus.

Dr. I. I. Rabi, Higgins professor of physics at Columbia University and Nobel laureate, told a science symposium at The Colorado College, Colorado Springs, that without a firm knowledge of mathematics there can be no communication between scientists and the rest of the world.

Once such mathematical knowledge has been attained, Dr. Rabi stated, "the general educated public would then begin to be capable of sharing with the scientific community the thrill and the excitement of scientific discovery." Dr. Rabi made the plea for more emphasis on science in education. He believes that the gulf is widening between scientists and non-scientists.

He warned of future difficulties as a result of a lack of common standards. If science is to become the central theme of the liberal arts education, he said, it must be taught and learned in the intellectual setting appropriate to the importance of its position.

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