

Books of the Week

For the editorial information of our readers, books received for review are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N.W., Washington 6, D. C.

APPLIED OPTICS, Vol. I, No. 1—John N. Howard, Ed.—*Optical Soc. of Am. (AIP)*, 86 p., illus., paper, \$2; bi-monthly, \$10 annually. Featuring optical masers in this first issue, this new journal for the optical engineering profession will carry articles on spectroscopy, infrared, biophysics, astronomy, interferometry and other uses of optics.

ARIEL: Essays on the Arts and the History and Philosophy of Medicine—Felix Marti-Ibanez—*MD Pub*, 292 p., illus., \$6.50. Perceptive essays on man, medicine and culture.

CANADA AND THE CANADIANS—Alistair Horne—*Macmillan (St. Martins)*, 329 p., photographs, map, \$7. Basically a British view, author presents comprehensive and detailed picture of the country and its people today.

CONCEPTIONS OF PERCEPTUAL DEFENCE—William P. Brown—*Cambridge*, 107 p., diagrams, paper, \$4.50. Monograph Supplement XXXV of

the British Journal of Psychology, summarizing experimental evidence.

COWBOYS AND CATTLE COUNTRY—Don Ward with J. C. Dykes—*Am. Heritage (Meredith Press)*, 153 p., illus., \$3.95. Colorful American Heritage Junior Library book, depicting the history of the working cowboy and his way of life.

DETERMINATION OF ORGANIC STRUCTURE BY PHYSICAL METHODS, Vol. 2—F. C. Nachod and W. D. Phillips, Eds.—*Academic Press*, 771 p., diagrams, \$16. Volume I of this reference work appeared in 1955, present volume is authoritative and comprehensive survey of the various physical methods of structural analysis, incorporating new developments.

DIET MANUAL—Compiled by Dietary Staff of Vanderbilt University Hospital—*Vanderbilt Univ. Press*, 157 p., \$4. Manual stresses positive approach, listing those foods the patient is allowed to eat on each diet, primarily intended as a guide for dietician, physician and professional nurse.

DISCRETE VARIABLE METHODS IN ORDINARY DIFFERENTIAL EQUATIONS—Peter Henrici—*Wiley*, 407 p., \$11.50. Intended both as text on senior level and up-to-date presentation of significant theoretical results.

DR. POSIN'S GIANTS: Men of Science—Dan Q. Posin—*Row*, 348 p., illus. by author, \$4.50. Based on the television program, book tells young people about the endeavors of great scientists, from Archimedes to Einstein.

THE ESKIMOS KNEW—Tillie S. Pine and Joseph Levine—*Whittlesey House*, 32 p., illus. by Ezra Jack Keats, \$2.75. Tells young readers in simplest language how Eskimos coped with their environment and suggests similar experiences for children to experiment with.

FOOD AND SCIENCE: Today and Tomorrow—William J. Darby and Gwen Lam—*Public Affairs Committee*, Pamphlet No. 320, 20 p., illus., paper, 25¢ direct to publisher, 22 E. 38th St., New York 16, N. Y. Discusses the functions

of food additives and their safe use.

GALEN ON ANATOMICAL PROCEDURES: The Later Books—Transl. by the late W. L. H. Duckworth; M. C. Lyons and B. Towers, Eds.—*Cambridge*, 279 p., \$7.50. Based on the only surviving Arabic translation of the final books, this volume includes Galen's writings on the brain, on the larynx, veins and arteries, the cranial and the spinal nerves.

GREAT CHEMISTS—Eduard Farber, Ed.—*Inter-science*, 1642 p., illus., \$29.50. Collection of more than 100 biographies, arranged in sequence of birth dates, presenting selected aspects of the evolution of chemistry during the last 3,000 years. No living chemists included.

GROUP THEORY and Its Application to Physical Problems—Morton Hamermesh—*Addison-Wesley*, 509 p., \$15. Presents group-theoretical methods as a useful tool to those working in crystallography, solid state, atomic and nuclear spectra, and fundamental particle physics.

HAS MAN A FUTURE?—Bertrand Russell—*Simon & Schuster*, 128 p., \$3. Lord Russell examines the causes of the nuclear arms race and outlines steps that could be taken now to reduce this threat to mankind.

INTRODUCTION TO CHEMICAL INSTRUMENTATION: Electronic Signals and Operations—Edward J. Bair—*McGraw*, 349 p., illus., \$10.75. Treats the fundamentals of instrument methods as applied to chemical problems, intended for beginning research workers.

AN INTRODUCTION TO ELEMENTARY PARTICLES—W. S. C. Williams—*Academic Press*, 406 p., illus., \$11. Introduction to the theoretical methods and ideas which are used to describe the behavior of elementary particles.

AN INTRODUCTION TO PHYSICAL OCEANOGRAPHY—William S. von Arx—*Addison-Wesley*, 422 p., illus., \$15. Text and reference, treating the geophysical aspects of oceans, physical concepts and theories related to the ocean-atmosphere system, and the practical side of the science.

LINEAR PROGRAMMING—G. Hadley—*Addison-Wesley*, 520 p., \$9.75. Presentation of the theory, computational techniques and applications of linear programming.

MAGNETIC AMPLIFIER ANALYSIS—David L. Lafuze—*Wiley*, 252 p., diagrams, \$9.75. Develops systematic procedure for analyzing magnetic amplifier circuits in general.

MOLECULAR ORBITAL THEORY for Organic Chemists—Andrew Streitwieser, Jr.—*Wiley*, 489 p., diagrams, \$14.50. Describes the derivation and limitations of the simple molecular orbital theory of quantum mechanics and its application to the chemical properties and reactions of organic compounds.

MYCENAEANS AND MINOANS: Aegean Prehistory in the Light of The Linear B Tablets—Leonard R. Palmer—*Knopf*, 264 p., illus., \$6. Addressed primarily to the general reader, this book by a British philologist tells the story of the decipherment of the tablets on which he bases his revised date of the destruction of the palace of Minos.

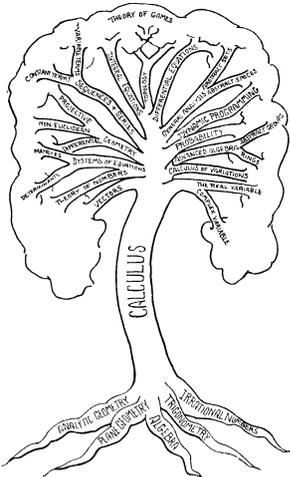
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Mortar, Concrete, Mineral Aggregates, Bituminous Materials, Soils—*Am. Soc. for Testing and Materials*, 1675 p., illus., \$21. A triennial publication, supplements will be published in 1962 and 1963.

OPERATION OF WASTEWATER TREATMENT PLANTS: Manual of Practice, No. 11—Subcommittee on Operation of Sewage Plants—*Water Pollution Control Federation*, 178 p., illus., paper, \$3. Training and reference volume with detailed outline, discussing all aspects of sewage plant operations.

OUTER SPACE: Prospects for Man & Society—Lincoln P. Bloomfield, Ed.—*Am. Assembly (Prentice-Hall)*, 202 p., paper, \$1.95. Non-partisan analysis of the complex issues and alternatives of the developing space age.

RHYTHMIC ACTIVITY IN ANIMAL PHYSIOLOGY AND BEHAVIOUR—J. L. Cloudsley-Thompson—*Academic Press*, 236 p., illus., \$6.80. Comprehensive review of present knowledge of animal rhythms among both vertebrates and invertebrates.

THE ROAD TO MODERN SURGERY: The Advances in Medicine and Surgery during the Past Hundred Years—Hugo Glaser, transl. from German by Maurice Michael—*Dutton*, 224 p., photographs, \$5.75. Physician reviews a period of revolutionary advance and discovery in medical science.

SCIENCE AND THE NATION: Policy and Politics—J. Stefan Dupre and Sanford A. Lakoff—*Prentice-Hall*, 181 p., \$3.95; paper, \$1.95. Examination and appraisal of the vital issues in areas where science, technology and political science interact in the interest of national affairs.

A SECOND COURSE IN NUMBER THEORY—Harvey Cohn—*Wiley*, 276 p., \$8. Second-semester course, gives historical development of number theory, with emphasis on quadratic fields and discussion of applications of ideal theory.

SEEING THE EARTH FROM SPACE: What the Man-Made Moons Tell Us—Irving Adler—*New Am. Lib.*, 144 p., illus. by Ruth Adler, photographs, paper, 60¢. Based in part on author's "Man-Made Moons," with new discoveries about radiation, magnetism, electric currents and other findings added.

SPACE GUIDE—Vincent F. Callahan, Jr., Ed.—

METEOROLOGY

Plan Weather Program

➤ A \$5 BILLION research program to conquer the atmosphere in the next decade was outlined at the American Meteorological Society meeting in New York by Dr. Sverre Pettersen, chairman of the department of geophysical sciences at the University of Chicago.

More than two-thirds of the funds will go for rocket and satellite experiments to probe the upper atmosphere and the fringe of space where physical and chemical processes are influenced directly by solar activity and cosmic rays. The remainder will go for studies of the lower atmosphere, motions and weather systems.

Reviewing the rapid progress in meteorological research in the past 30 years, Dr. Pettersen said, "An adequate description of the atmosphere by physically significant measurements is almost within our grasp." Automatic weather reporting stations plus the more recent advances in surveillance of the atmosphere by rockets and satellites promise the development of weather fore-

Callahan Publications, 2nd ed., 216 p., illus., paper, \$25. Up-to-date information on NASA organization, projects, procurement directory, contractors, subcontracting opportunities, ARPA and NBS programs.

A STUDY OF HISTORY, Vol. 1: Introduction. The Geneses of Civilizations, Part One. Vol. 2: The Geneses of Civilizations, Part Two. Vol. 3: The Growth of Civilizations—Arnold J. Toynbee—*Oxford Univ. Press*, 484 p., 452 p., 551 p., paper, \$2.45, \$2.35, \$2.75. First instalment of paper back edition of complete text of this work.

THE SUN AND ITS FAMILY—Irving Adler—*New Am. Lib.*, 126 p., illus. by Ruth Adler, paper, 60¢. Reprint of book first published in 1958, giving a short, readable review of our knowledge of the solar system.

TEXAS AND THE WAR WITH MEXICO—Fairfax Downey with Paul M. Angle—*Am. Heritage (Meredith)*, 153 p., illus., \$3.95. Fully illustrated with paintings of the period, this colorful book tells the story of the Mexican War, for young people.

THIS GREAT AND WIDE SEA: An Introduction to Oceanography and Marine Biology—R. E. Coker—*Harper*, 325 p., illus., paper, \$2.25. Reprint of book originally published in 1947, gives layman and student a grasp of the intricate relations of chemical, physical, dynamic and biological phenomena in the ocean.

TREES AND SHRUBS IN THE HEART OF DIXIE: Including Some Cultivated Plants and Common Vines—Blanche Evans Dean—*Coxe Pub. Co.*, 246 p., illus. by Forrest Bonner, \$7.50. An aid in learning to know the woody plants in all Southern states, except western Texas and southern Florida.

UNIVERSITY CALCULUS with Analytic Geometry—Charles B. Morrey, Jr.—*Addison-Wesley*, 754 p., diagrams, \$12.50. Textbook, emphasizing theory with the student required to prove many theorems as exercises, includes thorough treatment of limits and of differential.

VITAMINS AND HORMONES: Advances in Research and Applications, Vol. 19—Robert S. Harris and Dwight J. Ingle, Eds.—*Academic Press*, 366 p., \$13. Six of the chapters are concerned with hormones and two with vitamins.

• Science News Letter, 81:92 February 10, 1962

casting "on a firmer scientific basis, whereas such hopes even two decades ago would have been little more than an act of faith."

Highlights of the 10-year program include:

A tripling of Federal expenditures for research in the atmospheric sciences, not including operation of meteorological services, from the present \$200,000,000 to more than \$600,000,000 a year by 1971;

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Increasing the annual output of Ph.D.'s in the atmospheric sciences at least four times.

The vast undertaking to give man this understanding and control was planned by the National Academy of Sciences-National Research Council, Dr. Pettersen emphasized.

The plan is now in the hands of President Kennedy's Special Assistant for Science and Technology, Dr. Jerome B. Wiesner.

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