

Books of the Week

For the editorial information of our readers, books received for review since last week's issue 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. Request free publications direct from publisher, not from Science Service.

ADVANCES IN CANCER RESEARCH, Volume V—Jesse P. Greenstein and Alexander Haddow, Eds.—*Academic*, 463 p., \$10.80. Includes discussions of tumor-host relations and specific tumor antigens.

AIDS TO ORGANIC CHEMISTRY FOR MEDICAL STUDENTS—George A. Maw, foreword by Leslie Young—*Bailliere (Williams & Wilkins)*, 5th ed., 176 p., \$2.50. A simple presentation of the chemistry of compounds of biological and medical interest.

AN APPROXIMATE ANALYTICAL METHOD FOR STUDYING ENTRY INTO PLANETARY ATMOSPHERES—Dean R. Chapman—*National Advisory Committee for Aeronautics*, Technical Note 4276, 103 p., illus., paper, single copies free upon request direct to publisher, 1512 H Street, N.W., Washington 25, D. C.

THE ATOM AND THE ENERGY REVOLUTION—Norman Lansdell—*Penguin*, 200 p., paper, 85¢. A short comprehensive introduction to the subject of atomic energy in relation to the other sources of energy.

AUTOMATIC CONTROL: Principles and Practice—Werner G. Holzbock—*Reinhold*, 258 p., illus., \$7.50. Offers the practical results of scientific research on control systems in non-mathematical terms.

AVIATION FACTS AND FIGURES 1958—Compiled by Rudolf Modley and others, Ben S. Lee, Ed.—*Am. Aviation Publications*, 135 p., illus., paper, \$1.50. A compilation of facts gathered from many sources.

BIOGRAPHICAL MEMOIRS, Volume XXXI—Alfred H. Joy and others—*Columbia Univ. Press* for Nat. Acad. of Sciences, 396 p., illus., \$5.00. Biographies, portraits and bibliographies of deceased members of the N.A.S.

BIOLOGY AND HUMAN PROGRESS—Louis Eisman and Charles Tanzer—*Prentice-Hall*, 2nd ed., 544 p., illus., \$4.80. A general biology text based on classroom experiences of hundreds of teachers.

DARWIN'S CENTURY: Evolution and the Men Who Discovered It—Loren Eiseley—*Doubleday*, 378 p., illus., \$5. Less a biography of individuals than a story of how humanity came,

by degrees, to accept an idea foreshadowed two centuries earlier.

ENCYCLOPEDIA OF PHYSICS, Volume XLV Nuclear Instrumentation II—S. Flügge and E. Creutz, Eds.—*Springer Verlag*, 544 p., illus., \$31. The latest volume of the famous "Handbuch der Physik." In English.

ENERGY FOR MAN: Windmills to Nuclear Power—Hans Thirring—*Indiana Univ. Press*, 409 p., illus., \$6.95. Deals with power production. A book useful to all those concerned with economic and industrial planning.

EVIDENCE OF PRENATAL FUNCTION OF THE CENTRAL NERVOUS SYSTEM IN MAN—Davenport Hooker—*Am. Mus. of Natural Hist.*, 41 p., paper, 75¢. James Arthur Lecture on the "Evolution of the Human Brain."

FLORENCE NIGHTINGALE AND THE DOCTORS—Zachary Cope—*Lippincott*, 163 p., illus., \$5.00. Based on her voluminous correspondence this book gives an account of how Florence Nightingale influenced some of the doctors of her time.

FLUID PRESSURE MECHANISMS—H. G. Conway—*Pitman*, 2nd ed., 235 p., illus., \$6.75. Covers hydraulic, pneumatic and compressed gas systems of high, medium and low pressure.

FUNDAMENTALS IN CARDIOLOGY—John B. Wild—*Thomas, C. C.*, 83 p., illus., \$4.50. A textbook for medical students.

GENETIC RESISTANCE TO DISEASE IN DOMESTIC ANIMALS—Frederick Bruce Hutt—*Comstock Pub. Associates (Cornell Univ. Press)*, 198 p., illus., \$3.50. On the desirability and feasibility of breeding stock that can resist exposure to disease.

THE HEAT BALANCE OF THE EARTH'S SURFACE—M. I. Budyko, translated from Russian by Nina A. Stepanova—*Office of Technical Services*, 259 p., illus., paper, \$4. A monograph of interest to those working in the fields of climatology, meteorology, land geography and oceanography.

HOW TO FORCE CHECKMATE—Fred Reinfeld—*Dover*, 2nd ed., 112 p., illus., paper, \$1.25. New edition of 1947 work titled "Challenge to Chessplayers." 300 practical immediate checkmates selected from master play.

HOW TO LIVE WITH DIABETES—Henry Dolger and Bernard Seeman—*Norton*, 192 p., \$3.50. Concerned with the problems of daily living for the person with diabetes.

HYPERMODERN CHESS: As Developed in the Games of Its Greatest Exponent, Aaron Nimzovich. The Definite Collection of Nimzovich's Revolutionary Games—Fred Reinfeld, Ed.—*Dover*, 221 p., illus., \$1.35. New edition of work first published in 1948 under the title "Nimzovich: The Hypermodern."

INDUSTRIAL NOISE MANUAL—AIHA Noise Committee, Kenneth M. Morse, Chairman—*Am. Industrial Hygiene Assn.*, 180 p., illus., paper, \$7.50. Information on the physical characteristics of noise, its measurement, its effect on exposed persons and its control.

AN INTRODUCTION TO CHEMISTRY—Charles Compton—*Van Nostrand*, 607 p., illus., \$6.85. Emphasis in this text is placed, through the use of condensed case histories, on the methods chemists employ.

MATTER, EARTH, AND SKY—George Gamow—*Prentice-Hall*, 593 p., illus., \$10. As the author puts it: "The plan for this book is that of a trilogy dealing first with things our size, secondly with things much smaller, and finally with things much larger than ourselves."

NATURAL SELECTION IN MAN—J. N. Spuhler, Ed.—*Wayne State Univ. Press*, 72 p., illus., \$3.50. Papers of the Wenner-Gren Supper Conference held at the University of Michigan in 1957, during a meeting of the Am. Soc. of Human Genetics and the Am. Assn. of Physical Anthropologists.

1958 HEAT TRANSFER AND FLUID MECHANICS INSTITUTE: Preprints of Papers—Howard W. Emmons and others—*Stanford Univ. Press* for the Institute, 264 p., illus., paper, \$8.50. Held at the University of California in June 1958.

PERSON PERCEPTION AND INTERPERSONAL BEHAVIOR—Renato Tagiuri and Luigi Petrucci, Eds.—*Stanford Univ. Press*, 390 p., illus., \$7.50. A contribution to the field of social psychology.

PHYSICS AND MATHEMATICS, Volume 2—D. H. Hughes, J. E. Sanders and J. Horowitz—*Pergamon*, 375 p., illus., \$14. Covers developments in the basic experimental and theoretical aspects of reactor physics since the 1955 Geneva Conference.

POPULATION: An International Dilemma—Frederick Osborn—*Population Council*, 97 p., graphs, \$2.00. A summary of the proceedings of the Conference Committee on Population Problems—1956-1957.

THE POPULATION AHEAD—Roy G. Francis, Ed.—*Univ. of Minn. Press*, 160 p., illus., \$3.75. Papers read at the Second Symposium on Population Problems held in 1957 at the Center for Continuation Study of the University of Minnesota.

THE PRENTICE-HALL WORLD ATLAS—Joseph E. Williams—*Prentice-Hall*, 122 p., 158 maps, \$9. Uses techniques of modern cartography; in addition to regional maps, geographic phenomena of the world are presented in graphic form and world economic maps are included.

PRINCIPLES OF GENETICS—Edmund W. Sinnott, L. C. Dunn and Theodosius Dobzhansky—*McGraw-Hill*, 5th ed., 459 p., illus., \$6.75. This revision of the standard senior-graduate textbook puts increased emphasis on biochemical aspects and on the genetics of micro-organisms generally.

THE PSYCHIATRIC HOSPITAL AS A SMALL SOCIETY—William Caudill—*Harvard Univ. Press* for the Commonwealth Fund, 406 p., illus., \$6.50. A social anthropologist examines the attitudes of the different groups—patients, nurses, resident doctors, and staff physicians—of a psychiatric hospital in operation.

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UNIVERSITIES, COLLEGES, AND JUNIOR COLLEGES, 1957-58—Ray C. Maul, Project Director—Research Division, N.E.A., *Nat. Educ. Assn.*, 55 p., \$1.

THE STORY OF EYES—S. Sutton-Vane—*Viking*, 221 p., illus. with drawings by Anthony Ravielli, \$3.50. For the layman the author here brings together the many provocative facts about vision, ranging from microscopic sea creatures to man in space.

THE STRENGTH TO MOVE A MOUNTAIN—W. Storrs Lee—*Putnam*, 318 p., illus., \$5. The story of the building of the Panama Canal, which took 10 years of work and cost \$375,000,000 in days when labor was demanding 20-30 cents an hour.

STUDIES ON FOSSIL VERTEBRATES—T. Stanley Westoll, Ed.—*Essential Bks.*, 263 p., illus., \$5.60. A volume of essays in honor of the great British vertebrate paleontologist, D.M.S. Watson.

TECHNOLOGY OF INSTRUMENTATION—Eric B. Pearson—*Van Nostrand*, 202 p., illus., \$4.75. An introductory textbook on the theory and practice involved in the instrumentation of measurement, control and computing processes.

THE VOCABULARY OF DENTISTRY AND ORAL SCIENCE: A Manual for the Study of Dental Nomenclature—George B. Denton—*Am. Dental Assn.*, 207 p., \$4. Since 1877 the A.D.A. has concerned itself with dental nomenclature. This book is a study of the principles of nomenclature applied to the problems of dental terminology.

WHAT'S GOING ON IN SPACE? A Chronicle of Man's Exploration into Space beyond this Earth—David C. Holmes—*Funk*, 256 p., illus., \$3.95. A U. S. Navy Commander reports on the events and the people engaged in pushing outward into space.

YOU CAN REDUCE: A Practical Plan for Controlling Weight Safely and Comfortably—*National Live Stock and Meat Board*, 30 p., illus., paper, single copies free upon request direct to publisher, 407 S. Dearborn St., Chicago 5, Ill. Eating meat is part of the dieting plan. The American Medical Association checked the statements for accuracy.

Science News Letter, June 21, 1958

PHYSIOLOGY

Brain Waves Measure Depth of Natural Sleep

► SCIENTISTS can now tell just how soundly a person is sleeping at any time all during the night.

This information is obtained by a continuous measurement of brain waves, those electric signals tapped directly from the brain itself. As a person drifts off from wakefulness to the deepest sleep, the record of brain waves shows a gradually diminishing number of peaks of amplitude.

The record can be obtained without waking or disturbing the sleeper, Dr. David Lester of the Yale Laboratory of Applied Biodynamics reports to *Science* (June 6).

The brain wave record shows for any moment during the night whether the sleeper was awake, in a drowsy state or in light, moderate or deep sleep. This record of the depth of natural sleep will be useful in research on the factors that lead to deep or disturbed sleep.

Dr. Lester checked the method by comparing the depth of sleep as shown by the record with the judgments of three judges, based on examination of the record.

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