

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.

ATLANTIC HIGHWAY—Warren Armstrong—*Day*, 258 p., photographs, \$4.75. The story of transatlantic passenger transportation and the race for speed of the great luxury liners.

ATOMIC ENERGY COMMISSION: Annual Report to Congress for 1961—Glenn T. Seaborg, Chmn—*US AEC (GPO)*, 540 p., illus., paper, \$1.75. Summarizes advances in industrial and nuclear power reactor programs, Commission's activities in Plowshare program, recovery of radioisotopes from atomic wastes, and isotopic power sources.

BIOLOGICAL TRANSMISSION OF DISEASE AGENTS—Karl Maramorosch, Ed.—*Academic Press*, 192 p., illus., \$7. Symposium held under the auspices of the Entomological Society of America, Atlantic City, 1960.

A CATALOG OF MAYA HIEROGLYPHS—J. Eric S. Thompson—*Univ. of Okla. Press*, 458 p., illus. by Avis Tulloch, \$20. Dealing exclusively with noncalendrical signs, catalog comprises 370 affixes, 356 main signs, 88 portraits and 48 in the "purgatory" group.

CIVIL DEFENSE IN THE SOVIET UNION—Leon Goure, Rand Corporation, foreword by Willard F. Libby—*Univ. of Calif. Press*, 207 p., illus.,

paper, \$2.45. Study pieces together what evidence there is that the USSR is progressively improving protection of individuals, groups and communities against all war threats, including nuclear fire power.

COMPARATIVE NEUROPATHOLOGY—J. R. M. Innes and L. Z. Saunders—*Academic Press*, 839 p., illus., \$32. Combination atlas, text and reference work, covering neurological diseases in animals for veterinary pathologists and those who use animals for experimental study connected with the nervous system. Up-to-date international bibliography included.

CONCISE GERMAN-ENGLISH CHEMICAL DICTIONARY, Including Chemical Engineering and Fundamentals of Allied Sciences—Richard Ernst and Ingeborg Ernst von Morgenstern—*Crowell*, 727 p., \$7.95. Nearly 45,000 definitions of up-to-date terminology, compact reference for scientist and student.

DEEP-HOLE DRILLING WITH EXPLOSIVES—A. P. Ostrovskii, transl. from Russian—*Consultants*, 133 p., illus., paper, \$17.50. Discusses the so-called non-bit processes of shattering rocks when drilling deep holes, and experimental material on the effect of explosions in solid media.

DIAGNOSIS AND TREATMENT OF ACUTE RADIATION INJURY—International Atomic Energy Agency and World Health Organization—*Int. Doc. Serv. Columbia Univ.*, 425 p., illus., \$8. Papers on radiation accidents, tissue and bone marrow transplantations, and experimental therapy.

DISTILLATION: Principles and Design Procedures—R. J. Hengstebeck—*Reinhold*, 365 p., \$11.50. Information for the practising engineer.

ENGINEERING FUNDAMENTALS FOR PROFESSIONAL ENGINEER'S EXAMINATIONS—Lloyd M. Polentz—*McGraw*, 366 p., diagrams, \$9.50. Reviews all phases of engineering needed for state licensing exams.

THE FIRST BOOK OF THE VIKINGS—Louise Dickinson Rich—*Watts*, F., 66 p., illus. by Lili Rethi, \$1.95. Tells boys and girls about vikings at home and at sea.

Fossils: An Introduction to Prehistoric Life—William H. Matthews III—*Barnes & Noble*, 337 p., illus., \$5.75; paper, \$2.25. Designed primarily for the amateur fossil-collector and student of historical geology.

FROM THE EAGLE'S WING: A Biography of John Muir—Hildegard Hoyt Swift—*Morrow*, 287 p., illus. by Lynd Ward, \$3.95. Dramatized biography for young people.

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FUNDAMENTALS OF ROCKETS, MISSILES AND SPACECRAFT—Marvin Hobbs—*Rider, J. F.*, 275 p., illus., \$8.95. Simplified treatment of the basic elements of space propulsion.

GROUP PSYCHOANALYSIS: Theory and Technique—Norman Locke—*N.Y. Univ. Press*, 253 p., \$6.50. Deals with the principles and practices of using the group to help treat the individual.

GUIDE TO THE STUDY OF ROCKS—L. E. Spock—*Harper*, 2nd ed. 298 p., illus., \$8.75. Systematic guide to the identification, physical characteristics and origins of rocks.

HOW A JET FLIES—Gil Paust—*Sterling*, 72 p., illus., \$2.95. Pilot explains the special differences between propeller-driven and jet-propelled flight.

THE HUMAN SPECIES: A Biology of Man—Anthony Barnett—*Penguin Bks*, rev. ed., 354 p., illus., paper, \$1.85. Zoologist presents the study of human biology in relation to some of the social problems of today.

A LABORATORY SURVEY OF BIOLOGY—Lawrence S. Dillon and William A. Cooper—*Macmillan*, 282 p., illus., paper \$3.95. Includes exercises covering the newer aspects of biology.

THE LANGUAGE OF ANIMALS—Millicent E. Selsam—*Morrow*, 96 p., illus. by Kathleen Elgin, \$2.75. Tells young people how animals communicate by sound, sight and smell.

MATHEMATICAL DISCOVERY, Vol. I: On Understanding, Learning and Teaching Problem Solving—George Polya—*Wiley*, 216 p., \$4.75. Presents useful patterns of problem solving and methods to improve analytical ability.

MICHIGAN WILDFLOWERS—Helen V. Smith—*Cranbrook Inst. of Science (Univ. Pubs.)*, 465 p., illus. by Ruth Powell Brede, \$5. Handbook describes and depicts 483 species of plants found in Michigan, mostly herbaceous.

NEW APPROACHES TO DISARMAMENT—Jerome H. Spingarn—*Foreign Policy Assn*, 62 p., illus., paper, 50¢. Overview of current Western thinking on a workable international agreement.

OUR WILDLIFE LEGACY—Durward L. Allen—*Funk*, rev. ed., 422 p., photographs, \$6.50. Gives insight into the principles of wildlife conservation and tells about what is happening to one of our great natural resources.

PERMANENT MAGNETS AND THEIR APPLICATION—Rollin J. Parker and Robert J. Studders—*Wiley*, 406 p., illus., \$16. Basic concepts, problems of magnetization and measurement, and description of the properties of commercially useful permanent magnet materials.

RAND McNALLY ROAD ATLAS: United States, Canada, Mexico—*Rand McNally*, 38th ed., 115 p., maps, paper, \$1.95. Up-to-date state maps, 170 major city maps, thoroughly indexed.

RETARDATION OF EVAPORATION BY MONOLAYERS: Transport Processes—Victor K. La Mer, Ed.—*Academic Press*, 277 p., illus., \$10. Papers concerned with theoretical and practical problems of conserving water in lakes and reservoirs.

SCIENTISTS IN INDUSTRY: Conflict and Accommodation—William Kornhauser with Warren O. Hagstrom—*Univ. of Calif. Press*, 230 p., \$6. Analytical study of the relations between professional employees, the professions to which they belong, and the organizations for which they work.

SCHOLARSHIPS, FELLOWSHIPS AND LOANS, Vol.

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IV—S. Norman Feingold—*Bellman*, 368 p., \$10. Detailed information about where and when to apply for \$138 million awarded annually for education beyond high school.

SEADRAGON: Northwest Under the Ice—Commander George P. Steele, USN—*Dutton*, 255 p., photographs, \$4.95. The story of the nuclear submarine's discovery of an underwater passage beneath the Arctic ice pack.

SIMPLE, PRACTICAL HYBRIDIZING FOR BEGINNERS—D. Gourlay Thomas—*St Martins*, 127 p., illus., \$3.95. Mendel's law of plant heredity and its application in horticulture.

SOIL ANIMALS—D. Keith McE. Kevan, foreword by Sir E. John Russell—*Philosophical Lib.*, 237 p., illus., \$10. General introduction to fauna in soil and litter, life in the soil, sampling, ecology and effects of animal activity on soil.

SOUND—Its Uses and Control, Vol. I, No. 1—R. Bruce Lindsay, Ed.—*Acoustical Soc. of Am.*, 52 p., illus., paper, \$2; bi-monthly, \$8 per year. Devoted to the popular presentation of information on noise control, shock and vibration.

THEORETICAL INORGANIC CHEMISTRY—M. Clyde Day, Jr. and Joel Selbin—*Reinhold*, 413 p., \$12. Textbook on advanced undergraduate level.

TURTLES—Lois and Louis Darling—*Morrow*, 64 p., illus. by authors, \$2.75. For boys and girls.

VICTORY IN SPACE—Otto O. Binder, introd. by Willy Ley—*Walker & Co.*, 211 p., illus., \$6. Concerned with space projects underway and planned, data on space race, nuclear propulsion, and man in space.

WHO WAS WHO, Vol. V: 1951-1960—Adam and Charles Black—*Macmillan*, 1,206 p., \$17.50. A companion to WHO'S WHO, containing the biographies of those who died during the decade 1951-1960.

THE WONDERFUL WORLD OF NATURE: Fauna and Flora in 300 Pictures—English version by Mary Phillips, introd. by Edwin Way Teale—*Viking*, photographs by F. A. Roedelberger and others, \$7.50. Printed in Switzerland, takes reader on field trip with camera capturing unique close-up views of wildlife.

THE WORD AND PICTURE GUIDE TO AMERICAN ANIMALS—Dorothy Knight—*Arco*, 94 p., photographs by Leonard Lee Rue III, \$2.50. For lovers of wildlife.

THE WORLD OF TEACHING MACHINES: Programmed Learning and Self-Instructional Devices—Charles I. Foltz—*Electronic Teaching Labs*, 116 p., illus., paper, \$4.95. Brings together for the layman information on programming methods and devices.

THE YOUNG PATHFINDER'S BOOK OF THE POLAR REGIONS—James T. Radcliffe—*Hart*, 128 p., illus. by Hilda Simon, \$1.95. Introduces boys and girls to Arctic and Antarctic.

YOUR TELEPHONE AND HOW IT WORKS—Herman and Nina Schneider—*Whittlesey House*, 96 p., rev. ed., illus. by Jeanne Bendick, \$2.50. Updated to include recent advances, told in the same lively and clear manner.

• Science News Letter, 81:220 April 7, 1962

PHYSIOLOGY

"Boneheads" Studied For Space Flight

➤ SCIENTISTS soon may discover what makes a low, medium or high grade bonehead, something many laymen have puzzled about.

Current studies on stress impact on human skulls at Southwest Research Institute, San Antonio, Tex., are expected to

provide the answer. The object of the research is to use this knowledge to develop methods and devices that will protect all grade heads from injury from crash and blast that may occur to men on earth as well as in space.

The investigation is made by applying a "birefringent" coating, a type of plastic, over the skeleton skulls and then subjecting the skulls to extreme stress. The plastic coat reflects the degree and pattern of stress by changing color when viewed under polarized light.

Scientists hope to reveal what makes

people bone-tired. Being bone-tired is more than a figure of speech. It can result in fractures experienced by many infantrymen during marching, a program that has been subjected to medical investigation and speculation for a long time. Bone fatigue studies may help prevent such fractures as well as explain why certain stresses to bones result in injury.

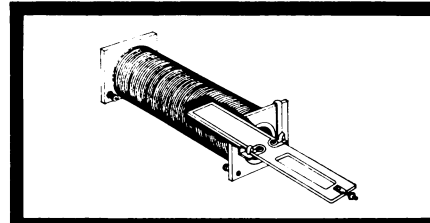
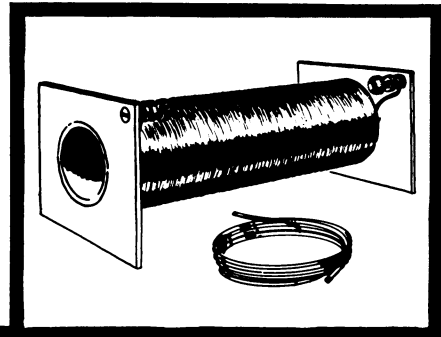
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The leading causes of death of infants during the first 28 days after birth are immaturity, asphyxia, birth injuries, and congenital malformations.

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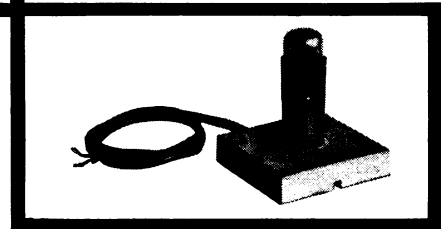
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Air Core Solenoid—used to perform the experiments "The Measurement of a Magnetic Field in Fundamental Units" and "The Mass of the Electron". The coil is also used in demonstrations of voltage induced by relative motion between the coil and a permanent magnet. Induced voltage is examined with respect to magnet strength, rate of flux change, and direction of the field. Transfer of mechanical energy of a moving magnet into heat energy in the coil is shown. Induction between the solenoid and an auxiliary winding of a few turns of wire can be shown. Each \$8.30.



Current Balance Kit—used with the Solenoid to measure a magnetic field in fundamental units of mass length and current. The force of gravity at one end of a mechanical arm balance counteracts the magnetic force of interaction between an unknown field and a current-carrying segment of wire at the other end. Each \$1.75.

Mass of the Electron Apparatus Kit—used to calculate the Mass of the Electron from the measurement of the radius of curvature of the electron beams. From the curvature, the magnetic field strength, and the accelerating voltage of the electron, the mass of electron can be calculated. The field is derived from an air core solenoid carrying a known direct current. Each \$3.50.



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