

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 priced at 95¢ or over, 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 COMPUTERS, Vol. I—Franz L. Alt with A. D. Booth and R. E. Meagher, Eds.—*Academic*, 316 p., \$10. Articles on general-purpose programming for business, numerical weather prediction, automatic translation, machine recognition of spoken words and binary arithmetic.

ALEXANDER VON HUMBOLDT: Scientist, Explorer, Adventurer—M. Z. Thomas, transl. from German by Elizabeth Brommer—*Pantheon Bks.*, 192 p., illus. by Ulrik Schramm, \$3.50. Biography for young people.

AMERICAN INDUSTRY IN EUROPE—Hugo Uytendaele with Richard F. Messing and Duane M. Feeley—*Arthur D. Little*, 99 p., color graphs, \$3. Report on the Arden House Conference on the European Common Market and the American chemical industry.

THE ARITHMETIC HANDBOOK—Martin H. Ivener—*Martin Pub. Co.*, 60 p., paper, \$1. Written for junior high school level, definition of commonly used terms, charts and reference tables.

AUTOMATIC TRANSLATION—D. Yu. Panov, transl. from Russian by R. Kisch, A. J. Mitchell, Ed.—*Pergamon*, 73 p., \$3.50. Gives account of early experiments made in translating scientific material from English into Russian, using the BESM electronic computer of the USSR Academy of Sciences.

BIRTH CONTROL AND PUBLIC POLICY—Norman St. John-Stevan—*Center for the Study of Democratic Institutions*, 83 p., paper, single copies free upon request direct from publisher, Box 4068, Santa Barbara, Calif. Annotated study of the history, English and U. S. laws, church attitudes and extent of acceptance of birth control.

ENGINEERING MATHEMATICS—J. Blakey and M. Hutton—*Philosophical Lib.*, 603 p., \$10. The more theoretical chapters of Dr. Blakey's earlier **UNIVERSITY MATHEMATICS** have been replaced by chapters on numerical solutions of equations,

statistics, relaxation methods and Laplace transformations.

A GUIDE TO EVERGLADES NATIONAL PARK AND THE NEARBY FLORIDA KEYS—Herbert S. Zim—*Golden Press*, 80 p., illus. by Russ Smiley, paper, \$1. Guide to animals, plants and history of the area.

HANDBOOK OF SOCIAL GERONTOLOGY: Social Aspects of Aging—Clark Tibbitts, Ed.—*Univ. of Chicago Press*, 770 p., \$10. Authoritative study dealing with the effects of aging on the individual as a member of society, and with the impact the presence of aging people has on the values, institutions and organization of society.

AN INTERDISCIPLINARY APPROACH TO ACCIDENT PATTERNS IN CHILDREN—Irwin M. Marcus and others—*Child Development Publications*, 79 p., paper, \$2.50. Discussion of a four-year pilot study and its results, with summary of psychological, physical and intrafamily factors related to accident repetition.

AN INTRODUCTION TO STOCHASTIC PROCESSES, with Special Reference to Methods and Applications—M. S. Bartlett—*Cambridge Univ. Press*, 312 p., paper, \$2.95. Reprint of 1955 edition.

THE LIVING HOUSE—George Ordish—*Lippincott*, 265 p., illus. by Graham Oakley, \$4.50. Most original account of the interrelation of living creatures—eighteen generations of humans and up to 4,000 generations of wood-borers, bats, mice, birds, beetles and bugs—in a Kentish farmhouse built in 1555.

MARINE BIOLOGY: Twentieth Annual Biology Colloquium, 1959—Ivan Pratt and James E. McCauley, Eds.—*Ore. State College*, 96 p., illus., paper, \$2.50. On trends in marine biology, plant-animal relationship in the marine environment, biochemical changes in fish during maturation and physiological and ecological problems in brackish waters.

THE MOBILE MANUAL FOR RADIO AMATEURS—*American Radio Relay League*, 2nd ed., 282 p., illus., paper, \$2.50. Selected articles on mobile receivers, transmitters, antennas and power supplies. Section on emergency and portable rigs.

MODERN UNIVERSITY PHYSICS—James A. Richards Jr. and others—*Addison-Wesley*, 993 p., illus., \$10.75. First course in physics for students of science and engineering, stresses the developments of the 20th century, including the theory of relativity and the quantum theory.

NATURAL SELECTION IN HUMAN POPULATIONS—D. F. Roberts and G. A. Harrison, Eds.—*Pergamon*, 76 p., \$3. Contains papers on mathematical models for selection, on the relative fitness of human mutant genes and on selection of gene systems in natural populations.

THE NEW INTERNATIONAL YEAR BOOK: A Compendium of the World's Progress for the Year 1959—Drenka Willen, Ed. Dir.—*Funk*, 560 p., photographs, \$10. Encyclopedic survey of major events and developments in 1959,

including the sciences; physics section prepared by Science Service. Also lists leading national and international organizations. Fully indexed.

THE PHYSICAL UNIVERSE—Konrad Krauskopf and Arthur Beiser—*McGraw*, 536 p., illus., \$8.95. Attempts to present in simple form the essential elements of physical science, with emphasis on the frontiers of knowledge, such as elementary particles, cosmic rays, DNA and RNA, and the origin of the universe. Intended as text for two-semester course and for the general reader.

PHYSICS OF THE UPPER ATMOSPHERE—J. A. Ratcliffe, Ed.—*Academic*, 586 p., illus., \$14.50. Leaders in their field treat the composition of the atmosphere and its extensions into outer space, the effect upon it of the sun's radiations, and the light which it emits when it is undisturbed and when disturbed during auroral display.

POLICIES FOR SCIENCE EDUCATION—Frederick L. Fitzpatrick, Ed.—*Teachers College*, 219 p., \$3.95. Report concerned with the need to develop continuous science programs in the schools of all communities. It considers factors relating to the teaching of science on elementary and secondary school level.

RADIATION TECHNOLOGY in Food, Agriculture and Biology—Norman W. Desrosier and Henry Rosenstock—*AVI Pub. Co.*, 401 p., illus., \$12.50. Introduction to radiation and its effects, radiation source technology, interaction of radiation with living organisms and practical details of radiation processing technology.

RETICULOENDOTHELIAL STRUCTURE AND FUNCTION—John H. Heller, Ed.—*Ronald*, 473 p., illus., \$12. Papers presented at Third International Symposium, 1958. Covers such broad areas of RES as morphological aspects, antibody synthesis, host defense mechanism, radiation and isotopic studies, tumors, and cholesterol and lipid metabolism.

THE RHYTHM WAY TO FAMILY HAPPINESS—John P. Murphy and John D. Laux—*Hawthorn Bks.*, 3rd rev. ed., 200 p., illus., \$3.50. Intended as a practical guide with timetables for family limitation based on "rhythm theory" of birth control.

SIMMONS-BOARDMAN WORLD ATLAS—John Bartholomew—*Simmons-Boardman*, 112 p., maps, \$2.75. Contains 80 pages of maps in color and glossary of geographical terms with an index listing more than 7,500 places. For home and office use.

SMALL PERTURBATION THEORY—W. R. Sears—*Princeton Univ. Press*, 63 p., paper, \$1.45. Paperback reproduction from Princeton Series of **HIGH SPEED AERODYNAMICS AND JET PROPELLSION**, published in 1954.

SODIUM CHLORIDE: The Production and Properties of Salt and Brine—Dale W. Kaufmann, Ed.—*Reinhold*, 743 p., illus., \$20. Nineteen specialists here bring together all modern data on the sources, production, properties and uses of salt and brines.

SOVIET ECONOMIC POWER: Its Organization, Growth and Challenge—Robert W. Campbell—*Houghton*, 209 p., \$4.75. After short historical background of the present Soviet economy, the author examines its productivity and efficiency, the sources of Soviet technical progress in the educational system and the place given to science.

STATISTICAL YEARBOOK 1959—United Nations—*International Documents Service, Columbia Univ. Press*, 618 p., \$10; paper, \$8. Eleventh issue of comprehensive collection of economic, demographic and social statistics on more than 250 countries and territories.

THE STRUCTURE AND FUNCTION OF MUSCLE—Vol I: Structure—G. H. Bourne, Ed.—*Academic*, 472 p., illus., \$14. Comprehensive account of important aspects of modern international research on muscle structure.

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TOBACCO AND AMERICANS—Robert K. Heilmann—*McGraw*, 276 p., 300 illus., \$7.50. Historical picture book relating the story of the growth of the tobacco custom, tobacco manufacture and trade from the days of Columbus to 1958, when sales of tobacco products approximated \$6.5 billion.

TRANSFORMERS AND GENERATORS FOR POWER SYSTEMS: Their Behavior, Capabilities and Rating—R. Langlois-Berthelot, trans. and rev. by H. M. Clarke, foreword by Charles F. Wagner—*Philosophical Lib.*, 541 p., \$12. For the engineering student who has general knowledge of physics, for the engineer concerned with design and manufacture and for the operating engineer.

UNITED STATES GOVERNMENT ORGANIZATION MANUAL 1960-61—Office of the Federal Register (GPO), 817 p., paper, \$1.50. Revised as of June 1, 1960, manual is divided into legislative, judicial and executive sections, and outlines legislative authority, purpose and functions of each government agency.

WATER AND AGRICULTURE: Symposium, December 1958—Roy D. Hockensmith, Ed.—*Am. Assn. for the Advancement of Science*, 198 p., illus., \$5. Papers by recognized authorities on programs and prospects of water management for the future; water sources, water planning and uses; and evaporation control.

WEATHER FORECASTING FOR AERONAUTICS—Joseph J. George and others—*Academic*, 673 p., maps, \$15. Methods for practical application of the fundamentals of the science of meteorology, based on research and development performed in the Eastern Air Lines meteorological laboratory, and tested in day-to-day forecasting practice.

X-RAY POWDER PHOTOGRAPHY: In Inorganic Chemistry—R. W. M. D'Eye and E. Wait—*Academic*, 222 p., illus., \$8.50. Written primarily for the research chemist with no experience of crystallography, giving the necessary background for understanding the powder method of observing X-ray diffraction in the laboratory.

• Science News Letter, 78:76 July 30, 1960

ANTHROPOLOGY

Ancient Rome Forbade Downtown Traffic in Day

ANCIENT ROME had its traffic problems, too, and used some of the same techniques being tried in our big cities today to solve their problems.

Rome's narrow streets were not marked "One Way" but in effect they were, because each driver sent a runner ahead to hold up traffic at the other end of the street or alley until the chariot had passed through.

The fringe parking plan used in modern large cities to relieve the downtown parking problem was used in Rome in the days of Julius Caesar. In the Roman day there were 12 hours of "daylight" adjusted according to the season. Private vehicles were forbidden on the city streets from dawn until two hours before dark. A traveler coming to Rome had to park his carriage at the city gates and continue into town either on foot or in a carrying chair or litter.

Traffic officers in ancient Rome belonged to a corps originally organized to guard against fires. They were officially known as Vigiles, but popularly called the "little bucket fellows." Most traffic restrictions and regulations were lifted at sundown, but the Vigiles handled the situation when two wagon drivers would get into a noisy

dispute about the right of way. The police-firemen in Rome were freed slaves, Kenneth D. Matthews Jr., of the University of Pennsylvania's Museum, reports in *Expedition*, 2:22, 1960.

Women drivers were not a problem in ancient Rome. In the third century B. C. a law was passed forbidding women to ride in carriages. Twenty years later the ladies of Rome forced the repeal of this law but during the first century A.D. the restriction was again in force.

• Science News Letter, 78:77 July 30, 1960

TECHNOLOGY

Automated Equipment In Nuclear Industry

ONE OF THE FIRST applications of automated equipment in the atomic power equipment industry is being made by General Electric Co. New tape-controlled machines, installed at San Jose, Calif., will cut costs sharply and are expected to maintain high standards of quality control. Automated machinery has recently come into use by suppliers of components to the nuclear industry, but until now the industry itself had made only limited attempts to automate.

• Science News Letter, 78:77 July 30, 1960

PHYSIOLOGY

Stressful Space Chamber Tests Human Endurance

A STRESS CHAMBER nearing completion will simulate six hazards of space travel: noise, intense light, vibration, changes in barometric pressure and variations of temperature and the composition of various gases.

The test chamber, being set up by the Boeing Airplane Company in Seattle, Wash., will permit tests of human capability to withstand stresses in combination.

As a "pilot" sits performing tasks, such as identifying simulated targets on a radar screen, he may be subjected to the chamber's walls being heated to 400 degrees, air pressure changing with altitude, piped-in noise simulating blast-off and other stresses.

The chamber may be used for the Dyna Soar manned space glider program or to simulate conditions in moon stations and underground launch stations.

• Science News Letter, 78:77 July 30, 1960

ASTRONOMY

Dimmest White Dwarf Star Discovered

THE DIMMEST WHITE DWARF STAR yet discovered has been found by Dr. W. L. Luyten of the University of Minnesota.

White dwarf stars are super-dense objects having about the same amount of matter as the sun packed into the volume of a planet. They are very faint, blue-white stars with a natural brightness only about a thousandth that of the sun. White dwarfs are believed to be the final state of a star, when it has settled down to shine feebly.

Dr. Luyten reported to Harvard College Observatory that LP 321-98, as the star is called, is "probably the least luminous white dwarf now known." The star was among 20 of this class recently discovered by Dr. Luyten.

Also reported by Harvard College Observatory is discovery of a fast-moving object visible from the Southern Hemisphere.

• Science News Letter, 78:77 July 30, 1960

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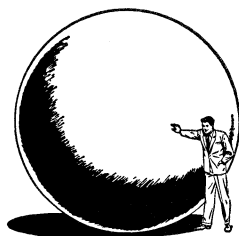
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