

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.

ADD LIFE TO YOUR YEARS—Ernst P. Boas and Norman F. Boas—Day, 253 p., \$4.95. Rational approach to the understanding of aging and disease, written in popular language by geriatricians.

THE AGELESS RELICTS: The Story of Sequoia—Norman Taylor—St. Martins, 115 p., photographs, \$3.95. A popular history of the discovery and exploitation of this surviving species of giant trees, based on original source material. Bibliography included.

ASIA: An Introductory Reading Guide—Asia Society, 2nd rev. ed., 24 p., paper, single copies free upon request direct to publisher, 112 E. 64th St., New York 21, N. Y. Selected and annotated list of titles for the general reader, arranged by country.

BIBLIOGRAPHY OF FOSSIL VERTEBRATES EXCLUSIVE OF NORTH AMERICA, 1509-1927, Vol. 1: A-K, Vol. 2: L-Z—Geological Soc. of Am., 1,544 p., two vols. set, \$25. Comprehensive bibliography of published works dealing with the vertebrate paleontology of regions other than continental North America, through the year 1927.

BIOELECTRICITY—E. E. Suckling—AIBS (Heath), 36 p., paper, No. 4 of BSCS Pamphlets, subscription to series of eight per school year, \$2.25. Biological Sciences Curriculum Study pamphlets are designed to cover specific areas of the life sciences as enrichment of secondary school study of biology.

THE BOOK OF HEALTH: A Medical Encyclopedia for Everyone—Randolph Lee Clark and Russell W. Cumley, Eds.—Van Nostrand, 2nd ed., 888 p., 1,400 illus., \$16.50; de luxe \$25. Up-to-date, authoritative description of body's development and functioning, major human diseases, injuries, nutrition, sanitation, medical history, civil defense measures, space medicine, and statistical appendices.

COMPLEX COMPOUNDS OF TRANSURANIUM ELEMENTS—A. D. Gel'man and others, transl. from Russian by C. Nigel Turton and Tatiana I. Turton—Consultants, 195 p., \$12.50. Monograph treats complex formation in aqueous solutions by neptunium and by plutonium, and the application of complex

compounds in the isolation and separation of trans-uranium elements.

THE DISTRIBUTION OF PACIFIC EUPHAUSIIDS—Edward Brinton—Univ. of Calif. Press, 219 p., illus., paper, \$5. A study of the quantitative aspects of the vertical and horizontal distribution of 59 euphausiid species in the Pacific Ocean.

EINSTEIN'S THEORY OF RELATIVITY—Max Born, rev. by Gunther Leibfried and Walter Biem—Dover, 376 p., diagrams, paper, \$2. Revised and enlarged version of the work published in 1924.

ELECTRONICS FOR SCIENTISTS: Principles and Experiments for Those Who Use Instruments—H. V. Malmstadt and C. G. Enke with E. C. Toren, Jr.—Benjamin, W. A., 619 p., illus., \$10.75. Practical book written for chemists, physicists, engineers and medical researchers who need to gain a working knowledge of electronic devices and circuits.

THE ENCHANTED VOYAGE AND OTHER STUDIES—G. E. Hutchinson—Yale Univ. Press, 163 p., illus., \$4.50. Collection of entertaining essays by zoologist, drawing on science, art and literature, discovering unsuspected links among varied fields of learning.

FREEDOM OF MIND—William O. Douglas—Am. Library Assn., 48 p., paper, 60¢ direct to Public Affairs Committee, 22 E. 38th St., New York 16, N. Y. Third in a series of guides to "Reading in an Age of Change," features eloquent defense of the right to speak, write, think and worship without intervention from the state.

HOSPITAL AND MEDICAL ECONOMICS: A Study of Population, Services, Costs, Methods of Payment and Controls, Vols. 1 and 2—Walter J. McNorner and Study Staff, University of Michigan—Hospital Research and Educational Trust, 1,492 p., two-vol. set \$20. Comprehensive set of studies relating to public policy problems in voluntary health insurance and personal health services.

INDIA: The Country and Its Traditions—Jean Fillozat, transl. from French by Margaret Ledesert, foreword by Jawaharlal Nehru—Prentice-Hall, 276 p., illus., \$15. Richly illustrated book depicting life in the India of today, but mainly concerned with the arts and crafts of the past.

INDIA: Tradition in Transition—Seymour Fersh—Macmillan, 47 p., illus., paper, single copies of reprint free upon request direct to Asia Society, 112 E. 64th St., New York 21, N. Y. American Fulbright professor to India interprets today's India to Americans.

INTRODUCTION TO ORGANIC CHEMISTRY—Keith M. Seymour—Prentice-Hall, 529 p., \$13. A text designed to serve the single-semester student as well as the beginning serious student of organic chemistry.

JOHANNES KEPLER AND PLANETARY MOTION—David C. Knight—Watts, F., 186 p., illus., \$2.95. Juvenile biography with emphasis on scientific achievements.

LAPP LIFE AND CUSTOMS: A Survey—Ornulf Vorren and Ernst Manker, transl. from Norwegian by Kathleen McFarlane—Oxford Univ. Press, 183 p., illus., \$6.10. About the Lapp people, their origins, distribution, material and intellectual culture and daily life.

MEEKIA: Enigmatic Cretaceous Pelecypod Genus—Louella Rankin Saul and Willis Parkison Popenoe—Univ. of Calif. Press, 55 p., 6 plates, paper, \$1.25. Describes 12 new species of the genus Meekia, a widely distributed form in the California Cretaceous molluscan faunas.

MINERAL METABOLISM: An Advanced Treatise, Vol. II, The Elements, Part B—C. L. Comar and

Felix Broner, Eds.—Academic Press, 623 p., \$20. Critical, comprehensive review, emphasizing the newly emerging concepts of the kinetic behavior and functions of minerals in the mammalian body.

THE MOLD OF MURDER: A Psychiatric Study of Homicide—Walter Bromberg—Grune & Stratton, 230 p., \$4.75. Psychiatrist explores pertinent psychological factors found among murders and the society in which they occur.

THE OTHER SIDE OF THE RIVER: Red China Today—Edgar Snow—Random House, 810 p., photographs, maps, \$10. A rather sympathetic report of impressions of the new society in China, based on a five-months trip through Mainland China in 1960 with many interviews of leading Communist representatives.

PHYSIOLOGY AND BIOCHEMISTRY OF ALGAE—Ralph A. Lewin, Ed.—Academic Press, 929 p., illus., \$32. A reference source covering the major topics in experimental phycology, the study of algae as living organisms, and summarizing much of the recent progress in the field.

PRIMITIVE MAN AND HIS WAYS: Patterns of Life in Some Native Societies—Kaj Birket-Smith, transl. from Danish by Roy Duffell—New Am. Lib., 222 p., photographs, paper, 75¢. Anthropologist examines Australian aborigines, the Tuaregs of the Sahara, the Maori, the Lapps and American Indians of the Plains.

PROCEEDINGS OF A HARVARD SYMPOSIUM ON DIGITAL COMPUTERS AND THEIR APPLICATIONS, 3-6 April 1961—Philippe Le Corbeiller and others, introd. by Anthony G. Oettinger—Harvard Univ. Press, 332 p., \$15. Presents cross section of university research, actual or planned, related to computers, demonstrating their growing importance to nearly all the disciplines.

A REVIEW OF SPACE RESEARCH—Space Science Board, foreword by Harry H. Hess, Chmn.—Nat. Acad. of Sciences-Nat. Res. Council, multipaged, illus., paper, \$4. Report on the current national program of basic research in space and its future objectives, examined by more than 100 scientists for NASA. (For story see p. 38)

SCIENCE IN THE CAUSE OF MAN—Gerard Piel—Knopf, 2nd rev. ed., 338 p., \$5.95. Chronologically arranged collection of essays by the publisher of Scientific American, discussing the humanistic aspects of the scientific and technological advances of the last decade.

SNOW CRYSTALS—W. A. Bentley and W. J. Humphreys—Dover, 227 p., 226 plates, paper, \$2.50. Unabridged republication (1931) of work depicting photographically the exquisite variety of snow crystals.

THE STATE PARKS: Their Meaning in American Life—Freeman Tilden, foreword by Conrad L. Wirth—Knopf, 507 p., 80 photographs, maps, \$5.50. A definitive study of the U. S. state park system and its growth during the past four decades, with detailed discussion of more than 180 of the most important state parks representative of their region.

THE STORY OF WRITING: From Cave to Computer—William and Rhoda Cahn—Harvey House, 128 p., illus., \$3.50. For young people, book traces the development of communication by writing, accurately and enlivened by many illustrations.

STUDIES IN MATHEMATICAL ANALYSIS AND RELATED TOPICS: Essays in Honor of George Polya—Gabor Szegő and others, Eds.—Stanford Univ. Press, 447 p., \$10. Sixty research papers by leading mathematicians from the United States and Europe, topics ranging from geodesic curvature and area, to one-sided localization of trigonometric series.

TEACHER SHORTAGES AND SALARY SCHEDULES—Joseph A. Kershaw and Roland N. McKean—McGraw, 203 p., \$5.50; paper, \$2.95. Economic analysis of teacher salary policies, focusing on the structure of present salary schedules, recommending an additional salary differential based on subject-matter training to enable schools to compete effectively for scarce skills.

WILLIAM HARVEY: Trailblazer of Scientific Medicine—Rebecca B. Marcus—Watts, F., 127 p., illus. by Richard Mayhew, \$2.95. Juvenile biography with chronology, glossary and detailed index.

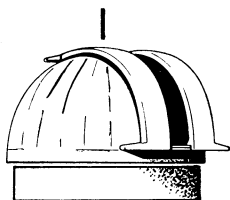
• Science News Letter, 83:44 January 19, 1963

TECHNOLOGY

New Ultra-High Speed Memory System

➤ A NEW ULTRA-HIGH speed computer memory system that enables computers to perform a complete memory cycle in less than one-half millionth of a second, the fastest now commercially available, is in production by Radio Corporation of America. The new microferrite memory system can handle up to 80 million bits of information per second.

• Science News Letter, 83:44 January 19, 1963



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INVENTION

Patents of the Week

Two ways for using the heat of exploding atoms for peaceful purposes and one for photoelectric proximity fuse kept secret for 15 years have been granted patents.

► THREE INVENTIONS kept secret for more than 15 years for security reasons—two for ways of using the heat of exploding atoms for peaceful purposes and one for a photoelectric proximity fuse—have now been granted patents.

Patent 3,070,529 was awarded to Dr. Eugene P. Wigner of Princeton University, Princeton, N. J., for the method he devised to use the heat of a nuclear fission chain reaction to produce steam for power, one of several possible methods.

Dr. Wigner, with Dr. Leo Szilard, who now lives in the Nation's capital, drafted the famous letter of Albert Einstein to President Franklin D. Roosevelt that finally resulted in Government support for studies of nuclear reactions, leading eventually to the atomic bomb and nuclear reactors.

The other reactor patent, 3,070,530, was granted to Herbert E. Metcalf of Los Angeles County, California, for his method of operating a gas turbine using the heat energy developed by nuclear fission, without unduly contaminating the turbine with radioactivity.

Both patents were assigned to the Government through the U.S. Atomic Energy Commission. Also assigned to the Government, through the Secretary of the Navy, was patent 3,070,017, awarded to Earl K. Clark of Mansfield, Ohio.

Mr. Clark devised a proximity fuse that combines an optical scanning system using a photoelectric cell with a means of exploding the projectile upon which the system is mounted when the target comes into a predetermined position in relation to the projectile.

Solar Energy Converter

Harry A. Toulmin Jr. of Dayton, Ohio, won patent 3,070,643 for an apparatus to generate electrical power from solar energy, rights to which he assigned to the Commonwealth Engineering Company of Ohio, also of Dayton.

The apparatus is capable of generating sufficient quantities of electricity to power motors, Mr. Toulmin said. It uses thermoelectric units, arranged in the form of a hollow body and connected together. The units are heated by the sun at one end and cooled at the other.

Other Significant Patents:

An automatic lift for balloons to offset that lost when the sun stops heating the gas and causing it to expand. Leland S. Bohl of Schenectady, N. Y., William F. Huch of St. Paul, Minn., and Drs. Edward P. Ney and John R. Winckler of the University of Minnesota assigned rights to patent 3,070,335

to the Government through the Secretary of the Navy.

A multistage turbine that can be used for re-entering the earth's atmosphere many times, consisting of a single rotor having several blades placed around the outside. Rights to patent 3,070,349 were assigned to the Government through the National Aeronautics and Space Administration by Warner L. Stewart of Parma, Ohio, and David G. Evans of Avon Lake, Ohio.

A nose cone ejection system suitable for use on a missile or space vehicle, for which Marcellus W. Fahl of Oakland, Calif., won patent 3,070,018, rights going to the Government through the Secretary of the Navy.

A system for determining the listening or viewing habits of radio or television fans, including the station to which the set is tuned. Rights to patent 3,070,798 were assigned to A. C. Nielsen Company of Chicago by Charles H. Currey of Palatine, Ill., and his four co-inventors.

A process for aging and finishing beer and other fermented beverages that is partly continuous instead of by the batch, for which patent 3,071,469 was awarded. Erik Krabbe of Milwaukee and Kenneth W. Wendt of Brookfield, Wis., assigned rights to Miller Brewing Company, also of Milwaukee.

Two devices for dolls—one for a swing and one to shed tears. The tear-producing mechanism won patent 3,070,921 for Edmund W. Baggott of Hollis, N. Y., and Julius Weigh of Ozone Park, N. Y., who assigned rights to Ideal Toy Corporation, also of Hollis. David Saint of Rockledge, Pa., assigned rights to patent 3,071,339, for the doll swing, to Graco Metal Products, Inc., Huntingdon Valley, Pa.

• Science News Letter, 83:45 January 19, 1963

Do You Know?

In the U.S. arteriosclerotic heart disease causes about three out of ten deaths annually.

A third species of *juniper* has been found in the San Bernardino Mountains in Southern California.

Two-year research projects at two separate laboratories in the U.S. recently resulted in isolating German measles virus.

As a civil defense precaution *diabetics* are urged to keep a two months' supply of insulin on hand.

In *South America* only a few areas use modern farming methods.

• Science News Letter, 83:45 January 19, 1963

Mathematical Skulduggery

Here is a treasury of brain-teasers. You need not be a mathematical genius to solve these problems and puzzles. What you need is to know how to THINK LOGICALLY—how to REASON. This is practically a "course" in applied logic and reasoning—besides being an immense amount of fun that will keep you absorbed for many hours. You will find not only that MATH IS FUN, but also that learning math can be fun!

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