

Books of the Week

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BIOLOGICAL EFFECTS OF RADIATIONS—Daniel S. Grosch—Blaisdell Pub. Co., 293 p., illus., paper, \$3.50. Attempts to present an organized picture of the diverse experiments in which living material is exposed to radiation, at the advanced undergraduate level.

BIOLOGY AND INFORMATION: Elements of Biological Thermodynamics—Karl Sigmundovich Trincer, transl. from Russian by Edwin S. Spiegelthal—Consultants, 93 p., paper, \$17.50. Attempts to formulate the most modern scientific position on the thermodynamic regularities controlling the existence and development of living organisms.

THE CHEMISTRY OF THE RARE-EARTH ELEMENTS—N. E. Topp—Elsevier Pub. Co. (N.Y.), 164 p., diagrams, \$10. Reference work on the known chemistry of these elements up to 1964, discussing methods of extraction, separation techniques, and the compounds of the lanthanides and their properties.

CHEMISTRY OF THE SOIL—Firman E. Bear, Ed.—Reinhold, 2nd ed., 515 p., diagrams, \$20. Up-to-date and comprehensive reference source on chemistry of soil development, chemical composition and physical chemistry of soils, organic matter, biochemistry, trace elements, soil chemistry and plant nutrition, and methods of chemical analysis of soils.

CONGRESSIONAL WALL MAP: United States of America—Geological Survey—GPO, rolled map, paper, \$2. Prepared at the direction of Congress, this large map shows Federal lands and historical boundaries, national parks and national forests, Indian reservations, wildlife refuges and public lands.

A DICTIONARY OF ECONOMICS AND COMMERCE—J. L. Hanson—Philosophical Lib., 401 p., \$10. Most of the more than 4,000 entries in this British dictionary refer to principles of economic theory and applied economics, from "AI at Lloyd's" to "Zoning."

EDUCATION DIRECTORY, 1964-1965, Part 3: Higher Education—Office of Education—GPO, 237 p., paper, \$1. Up-to-date information on U.S. institutions of higher learning listed by states.

ELEMENTS OF CHEMISTRY in a New Systematic Order, Containing all the Modern Discoveries—Antoine-Laurent Lavoisier, transl. from French by Robert Kerr, new introd. by Douglas McKie—Dover, 539 p., 13 plates, paper, \$3. Unabridged facsimile of original (1790).

FEDERAL FUNDS FOR RESEARCH, DEVELOPMENT AND OTHER SCIENTIFIC ACTIVITIES: Fiscal Years 1963, 1964 and 1965—National Science Foundation—GPO, 244 p., paper, \$1.25. Analysis of funds distributed, with detailed statistical tables.

FLIGHT—H. Guyford Stever, James J. Haggerty and the Editors of LIFE—Time-Life Bks., 200 p., illus., 72 p. in full color, \$3.95 direct to publisher, 540 N. Mich. Ave., Chicago, Ill. 60611. Reviews man's historical endeavors to build himself flying machines, deals with principles of bird flight, aerodynamics, take-off, lift, control, airways, radio beams, and supersonic developments.

FLUID MECHANICS OF TURBOMACHINERY, Vols. I and II—George F. Wislicenus, new preface by author—Dover, 2nd enlarged ed., 744 p., diagrams, paper, \$2.75 each. Originally published in 1947.

FOREST PRODUCTS LABORATORY: Annual Report of Research, 1964—Edward G. Locke, Dir.—Forest Products Lab., 40 p., photographs, paper, single copies free upon request direct to publisher, Madison, Wis. 53705. Highlights of research in wood fiber and solid wood products, in the engineering, chemistry and quality of wood.

GEORGE WASHINGTON: Man and Monument—Frank Freidel and Lonnelle Aikman—Washington National Monument Assn., 72 p., illus., \$1.75; paper, 75¢. A pictorial history of the development, construction and details of the 555-foot-high obelisk in the nation's capital.

THE GEOGRAPHICAL LORE OF THE TIME OF THE CRUSADES: A Study in the History of Medieval Science and Tradition in Western Europe—John Kirtland Wright, new introd. by Clarence J. Glaeken—Dover, 563 p., illus., paper, \$2.75. Reprint (1925) of a scholarly attempt to trace the origins of the most characteristic geographical ideas current in medieval Western Europe.

GOVERNMENT-WIDE INDEX to Federal Research & Development Reports—Clearinghouse for Federal Scientific and Technical Information—GPO, 253 p., paper, \$1.25; monthly, \$10 per year. A comprehensive, unified index to unclassified/unlimited Government-sponsored research, in cooperation with NASA, AEC and DOD.

THE HIGH VALLEY—Kenneth E. Read—Scribner, 266 p., photographs by author, maps, \$6.95. An anthropologist's personal record of two years of field work among the Gahuku tribes in the Central

Highlands of New Guinea, of life among a Stone Age people.

HUMAN CHROMOSOME METHODOLOGY—Jorge J. Yunis, Ed.—Academic Press, 258 p., illus., \$8.50. An authoritative guide to laboratory techniques and their applications for investigators in human cytogenetics, including research findings of studies of human chromosomes in disease.

MECHANICS—William Fogg Osgood—Dover, 495 p., illus., paper, \$2.50. Reprint (1937).

METHODS OF ANIMAL EXPERIMENTATION, Vol. I—William I. Gay, Ed.—Academic Press, 382 p., illus., \$13.50. Description of both fundamental and well-established techniques of animal experimentation in various research fields, for graduate students and biological research administrators.

MODERN DEVELOPMENTS IN FLUID DYNAMICS: An Account of Theory and Experiment Relating to Boundary Layers, Turbulent Motion and Wakes, Vols. I and II—S. Goldstein, Ed.—Dover, 702 p., illus., paper, \$2.50 each. Reprint (1938).

100 GREAT PROBLEMS OF ELEMENTARY MATHEMATICS: Their History and Solution—Heinrich Dorrie, transl. from German by David Antin—Dover, 393 p., diagrams, paper, \$2. New translation of unabridged text of 5th edition published in 1958.

PHYSICO-CHEMICAL CONSTANTS OF PURE ORGANIC COMPOUNDS, Vol. 2—J. Timmermans—Elsevier Pub. Co. (N.Y.), 482 p., \$28.50. This supplement to first volume published in 1950 includes new data until the end of 1964.

PRINCIPLES OF CHEMICAL EQUILIBRIUM—Kelso B. Morris—Reinhold, 114 p., diagrams, paper, \$1.95. Monograph emphasizing the discussion of the basic principles of heterogeneous equilibrium, the phase rule, nonionic equilibrium and ionic equilibrium.

RADIOCHEMICAL SURVEY OF THE ELEMENTS: Principal Characteristics and Applications of the Elements and Their Isotopes—M. Haissinsky and J.-P. Adloff—Elsevier Pub. Co. (N.Y.), 177 p., \$12. This dictionary features full descriptions of the

BOTANY

Plants Resistant to Fire

► FIRE-RESISTANT PLANTS are saving homes from blazing destruction on the hills around Los Angeles.

For two-thirds of every year, the native chaparral, simmering in the hot sun and subject to the dry "Santa Ana" winds, is explosively combustible. Easily ignited by a chance spark or carelessly thrown cigarette, a fire in chaparral burns with intense heat and moves with terrifying speed, destroying everything in its path.

Such a fire, fanned by a strong wind, simply cannot be stopped by water or chemicals. It ceases only when the fuel is consumed or the wind abates.

The sole practical answer to this fire danger is to remove the highly inflammable native chaparral and replant the cleared area with fire-resistant plants. Creating a "green-belt" barrier around a home can help to limit the spread of fire and make it possible for firemen to stop a brush fire before it becomes a catastrophe.

Researchers at the Los Angeles State and County Arboretum at Arcadia now have 14 plants that are nonflammable. Six of them are deep-rooted and ideal for soil erosion control.

"You can cook them, but they won't carry a flame," said Dr. Robert Gonderman, head of the Arboretum project. "They just curl up and blacken."

The 14 fire-resistant plants are: Arabian

elements, presenting the nature and the nuclear, physical and chemical profile of each as characteristic traits.

THE SCIENCE OF GEOGRAPHY: Report of the Ad Hoc Committee on Geography, Earth Sciences Division, NAS-NRC—Edward A. Ackerman, Chmn.—Nat. Acad. of Sciences, 80 p., paper, \$2.50. Provides background data and analysis of those parts of geography that bear upon its potential research competence in contributing to the general progress of science.

THE 2nd SCIENTIFIC AMERICAN BOOK OF MATHEMATICAL PUZZLES AND DIVERSIONS—Martin Gardner—Simon & Schuster, 251 p., illus., paper, \$1.45. A new selection, from origami to recreational logic, from the golden ratio to mechanical puzzles.

SELECTED PAPERS ON MOLECULAR GENETICS: A Collection of Reprints—Introd. by J. Herbert Taylor, Ed.—Academic Press, 649 p., illus., \$9; paper, \$5.95. Contains articles on biochemical genetics, the nature of genetic material, DNA structure and replication, genetic recombination, and the function of genetic material.

THE STORY OF NURSING—Bertha S. Dodge—Little, 244 p., 2nd ed., illus., \$3.95. Introduces young readers to past and present nursing careers.

THE STORY OF SPEECH AND LANGUAGE—Charles L. Barber—Crowell, 295 p., illus., \$5.95. Records the theories of origin and development of organized language and introduces the various language families, in particular the English language.

TEACHING GENETICS in School and University—C. D. Darlington and A. D. Bradshaw, Eds.—Philosophical Lib., 121 p., plates, \$7.50. In this symposium 20 geneticists present specific modes of teaching and choice of materials used for experiment and demonstration.

TRANSMISSION LINES, ANTENNAS AND WAVE GUIDES—Ronald W. P. King, Harry Rowe Minto and Alexander H. Wing—Dover, 547 p., diagrams, paper, \$2. Enlarged version of 1945 edition.

UNDERSTANDING SURGERY—Robert E. Rothenberg, Ed.—Trident Press, rev. ed., 717 p., illus., \$6.95. A surgeon answers layman's questions about operation and recuperation in specific fields of surgery.

UNDERSTANDING THE NEW MATH—Evelyn B. Rosenthal—Hawthorn Bks., 240 p., illus., \$4.95. Explains for parents and teachers the new mathematics as it is being taught in schools today.

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scurf pea, coast salt bush, creeping rosemary, dwarf coyotebush, green lavender-cotton, gum rockrose, ivy, parrot beak, purple rockrose, salt bush, small-leaved ice plant, sunrose, woolly yarrow and yerba santa.

The plants were recommended after thousands were put through fire tests, Dr. Gonderman said. The laboratory furnace ranged up to 1,750 degrees, hot enough to melt buttons, he explained.

The plants are also being tested at about 100 experimental stations in the mountain areas. There they are checked for ability to compete with native vegetation, re-seed themselves, resist drought and thwart soil erosion.

The plants are tested as food for deer and other herbivorous animals. Dr. Gonderman pointed out that edible, fire-resistant plants are a must for mountain use to support the browsing animals.

Seeds from all over the world are being used by Dr. Gonderman and his assistants in the research project. They come from Israel, Germany, Australia, France and England, and from Hungary and Russia behind the Iron Curtain.

The next step in the project is to develop nonflammable plants which can be seeded by helicopter over the mountain areas, Dr. Gonderman said.

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