

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.

AMERICAN INDIANS—Compiled by Walter M. Daniels—*H. W. Wilson*, The Reference Shelf, 219 p., \$2.00. A collection of 44 articles and speeches telling the history of the American Indian and his present status.

THE CHEMISTRY OF PLANTS—Erston V. Miller—*Reinhold*, 174 p., \$4.75. A reference book for research workers in medicine, agriculture and food processing as well as chemists.

THE DEFECT SOLID STATE—T. J. Gray and others—*Interscience*, 511 p., illus., \$11.00. A presentation of the philosophy developed in a consideration of the chemical-physics of the solid state from the point of view of the quantity and quality of the various defects which may be present.

ELASTIC WAVES IN LAYERED MEDIA—W. Maurice Ewing, Wenceslas S. Jardetzky and Frank Press—*McGraw-Hill*, Lamont Geological Observatory Contribution No. 189, 380 p., diagrams, \$10.00. An outgrowth of a plan to make a uniform presentation of the investigations on earthquake seismology, underwater sound and model seismology.

HOW CHILDREN LEARN: An Educational Psychology—Arden N. Frandsen—*McGraw-Hill*, 546 p., illus., \$5.50. Applying the general principles of educational psychology to the problems of understanding and teaching elementary school children.

THE INDUSTRIAL CHEMISTRY, PROPERTIES, AND APPLICATION OF SILICONES—Charles E. Reed—*American Society for Testing Materials*, 47 p., illus., paper, \$1.50. Reviewing the basic structural chemistry of the silicones and discussing how this chemistry explains their properties as a group of engineering materials.

INTRODUCTION TO ELECTRICAL APPLIED PHYSICS—N. F. Astbury—*Philosophical Library*, 241 p., diagrams, \$10.00. A text for a field that has grown up in the last 25 years or so and is neither physics nor engineering but borders on both.

INVESTMENT IN CREATIVE SCHOLARSHIP: A History of the Fellowship Program of the American Association of University Women 1890-1956—Ruth W. Tryon—*American Association of University Women*, 228 p., illus., \$3.50. The first AAUW fellow was chosen in 1890.

THE JAPAN SCIENCE REVIEW: Vol. I, No. 1, MINING AND METALLURGY—Kenji Ono, Ed.—*Joint Publication Committee, Japan Science Review*, 188 p., paper, \$1.50 per issue, published biannually. A journal of abstracts published in English.

MAGNETIC-AMPLIFIER CIRCUITS: Basic Principles, Characteristics and Applications—William A. Geyger—*McGraw-Hill*, 2d ed., 394 p., diagrams, \$7.00. A reference work intended primarily for practical use.

MATHEMATICS FOR EVERYMAN: From Simple Numbers to the Calculus—Egmont Colerus, translated by B. C. and H. F. Brookes—*Emerson Books*, 255 p., diagrams, \$3.95. An attempt to combat the general aversion for mathematics.

MOLES AND SHREWS—Charles L. Ripper—*Morrow*, 64 p., illus. with drawings by the author, \$2.50. A charming book for children.

NAVAL REACTOR PROGRAM AND SHIPPINGPORT PROJECT: Hearings Before the Subcommittees of the Joint Committee on Atomic Energy—Carl T. Durham, Chairman—*Govt. Printing Office*, 101 p., diagrams, paper, 30 cents. Making public for the first time detailed information on the

Naval Reactor Program and Shippingport Project.

NUCLEAR ENGINEERING—Charles F. Bonilla, Ed.—*McGraw-Hill*, 850 p., illus., \$12.50. Giving the basic principles involved in the design of nuclear reactor cores and power plants. Each field is covered by one of 12 experts.

OWYHEE: The Life of a Northern Desert—Earl J. Larrison—*Caxton*, 357 p., illus. with drawings by Don Fritts, \$5.00. Telling how animal and plant life has adapted itself to survive in this desert just south of Nampa, Idaho, less than 18 miles from the place where Idaho potatoes are plentiful.

PESTICIDE HANDBOOK 1957—Donald E. H. Frear, Ed.—*College Science Publishers*, 9th ed. rev., 216 p., paper \$1.50, cloth \$3.00. Listing 6,234 commercial pesticides with information on their active ingredients, uses and manufacturers.

PHYSICS—Erich Hausmann and Edgar P. Slack—*Van Nostrand*, 4th ed., 722 p., illus., \$8.00. A college text especially for those who major in science and engineering. Emphasis is on principles, and methods, and description of devices such as measuring instruments, heat engines and electrical machines has been omitted or curtailed.

PLAY WITH SEEDS—Millicent E. Selsam—*Morrow*, 96 p., illus. with drawings by Helen Ludwig, \$2.50. A book for children telling about seeds and their uses and describing experiments that can be done with them.

ROCKETS, MISSILES, AND MOONS—Charles Coombs—*Morrow*, 256 p., illus., \$3.75. Telling what has happened in this field and looking forward to what may happen in the future.

STERILIZATION IN FOOD TECHNOLOGY: Theory, Practice and Calculations—C. Olin Ball and F. C. W. Olson—*McGraw-Hill*, 654 p., illus., \$16.00. Intended as a guide and reference work for all who work in the field of food preservation.

TRAFFIC SPEED AND VOLUME MEASUREMENTS—Claude A. Rothrock and others—*Highway Research Board*, Bulletin 156, 44 p., graphs, paper, 90 cents. Discussing such factors as purpose of driving, weather, time of day and presence of stalled car or accident and their effect on the speed of travel flow.

TREES AND SHRUBS FOR THE SOUTHERN COASTAL PLAIN—Brooks E. Wigginton—*University of Georgia Press*, 154 p., illus., paper, \$2.50. To guide the southern gardener in the selection of plant materials.

USA IN NEW DIMENSIONS: The Measure and Promise of America's Resources—Thomas R. Carskadon and George Soule with graphics by Rudolf Modley—*Macmillan*, A Twentieth Century Fund Survey, 124 p., illus., paper, \$1.50. A graphic presentation of what we are and what we have, use, and need.

YOUR FOOD AND YOU—Herbert S. Zim—*Morrow*, 64 p., illus., \$2.50. A child's book on what and how you should eat for health and enjoyment.

ZOO DOCTOR—William Bridges—*Morrow*, 126 p., illus. with photographs by Sam Dunton, \$2.95. A charming book for young people (and their elders) about the variety of activities of a veterinary doctor in a zoo.

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AERONAUTICS

Clay Wings May Solve Aviation Problems

► "WINGS OF CLAY" may be the answer to problems of high-speed aviation of the future.

This possibility has been suggested in research by F. R. Shanley, W. J. Knapp and R. A. Needham, engineers at the University of California at Los Angeles, who have made a preliminary study of the use of prestressed ceramics for aircraft and missile structures.

A report made to the sponsoring Air Force group has recently aroused the interest of the aircraft industry.

At very high speeds aerodynamic heating will raise aircraft surface temperatures beyond that which can be withstood by available metal alloys, the investigators pointed out.

Ceramic materials can withstand very high temperatures, but under normal conditions are too brittle for aircraft structures. Prestressing by means of tension cables overcomes this difficulty.

The UCLA engineers designed and tested ceramic wings under simulated flight loads. Results indicated possibilities worth further investigation. Additional studies are planned for the near future.

The report also suggested that graphite was a possible answer to the aircraft "heat barrier." The strength of graphite actually increases with temperature up to about 4,000 degrees Fahrenheit, they pointed out.

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AGRICULTURE

Plant Specialist Has Four Tips for Lawn Care

► HERE ARE four tips from Prof. P. A. Miller, plant disease specialist at the University of California at Los Angeles, on how to keep your lawn healthy.

1. Spongy turf favors growth of organisms that attack grass. Close mowing, removal of grass clippings and chemical or mechanical turf renovation will prevent or overcome this condition.

2. Yellow or off-color grass may be due to lack of nitrogen or iron. Application of nitrogen fertilizer and soil applications or leaf sprays of iron salts or solutions will correct these deficiencies.

3. Annual blue grass and, to some extent, Bermuda grass may lose color as a result of smog injury.

4. Mechanical injuries, even cuts from mowing, may make grass susceptible to infection. Watering should be deferred several hours after mowing, and fungicides for disease control applied.

There's no cure-all for lawn ills. Just as human ills require specific remedies so do turfgrass maladies.

There is one compound on the market, he reports, which combines several fungicides with iron salt, a wetting agent, and a nitrogen fertilizer. Thus several fungus diseases and some nutrient deficiencies are controlled and grass growth is promoted.

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