

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.

ACRONYMS DICTIONARY: A Guide to Alphabetic Designations, Contractions and Initialisms—Gale Research Co., 1st ed., 211 p., \$10. Lists more than 12,000 acronyms of associations, government agencies, business firms, transport facilities, military and general terms.

ADVANCES IN THE ASTRONAUTICAL SCIENCES, Vol. 5—Wernher von Braun and others—Plenum Press, 356 p., illus., \$8. Proceedings of the 2nd Western National Meeting of the American Astronautical Society, Los Angeles, 1959.

BIOLOGY AND CONTROL OF THE WESTERN PINE BEETLE: Summary of the First Fifty Years of Research—J. M. Miller and F. P. Keen—USDA (GPO), 381 p., illus., \$2.25. Reviews the results of research done by Forest Service entomologists.

CHEMICAL PERIODICITY—R. T. Sanderson—Reinhold, 330 p., illus., \$11.75. This textbook attempts to emphasize the fundamental unity of inorganic chemistry.

COLOUR IN INDUSTRY TODAY: A Practical Book on the Functional Use of Colour—Robert F. Wilson, foreword by Faber Birren—Macmillan, 90 p., photographs, \$8. Discusses science and psychology of color, and shows uses of lighting and color schemes.

THE DETERMINATION OF MOLECULAR STRUCTURE—P. J. Wheatley—Oxford Univ. Press, 263 p., illus., \$5.60. Introduction to spectroscopic methods, electron and X-ray diffraction, dipole moments and nuclear magnetic resonance.

ELECTRONIC ENGINEER'S REFERENCE BOOK—L. E. C. Hughes, Ed., foreword by Percy Dunsheath—Haywood & Co. (Macmillan), 2nd rev. ed., 1588 p., illus., \$18. Contains new sections on non-destructive testing, components,

radiation detection, digital computer applications, simulators and electronic telephone exchanges.

ELEMENTS OF GENERAL CHEMISTRY—Jay A. Young—Prentice-Hall, 466 p., illus., \$6.95. Aims at giving the student understanding of the properties of typical elements and compounds.

EVOLUTION ABOVE THE SPECIES LEVEL—Bernhard Rensch, transl. from German, foreword by T. Dobzhansky—Columbia Univ. Press, 419 p., illus., \$10. Well-documented outline of the major rules governing the processes of evolution, presenting a synthesis of the modern biological theory of evolution.

EXERCISE AND FITNESS: A Collection of Papers Presented at the Colloquium, 1959—Seward C. Staley, Chmn.—Athletic Institute, 248 p., illus., paper, \$3. Discussion of medical, physiological, nutritional and psychological aspects of exercise and fitness.

FORTY-FOURTH ANNUAL REPORT OF THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS, 1958: Administrative Report Including Technical Reports Nos. 1342-1392, (Final Report)—GPO, 1494 p., illus., \$10.50. Covers the activities of NACA through the close of business, September 30, 1958, when it was superseded by NASA.

FREEZING AND DRYING OF BIOLOGICAL MATERIALS—Harold T. Meryman, Ed.—N. Y. Acad. of Sciences, Annals, Vol. 85, Art. 2, 233 p., illus., paper, \$3.50. Discussion of the physical aspects of freezing, freezing of living cells, and theory and practice of freeze-drying.

GREEK HOLIDAY—Anne Anthony—Icaros (Taplinger), 428 p., illus., 56 p. of photographs, \$6. Perceptive travel book, takes reader season by season on a tour of ancient, medieval and modern sites, meeting the people of Greece.

THE INDOMITABLE TIN GOOSE: The True Story of Preston Tucker and His Car—Charles T. Pearson—Abelard-Schuman, 285 p., illus., \$4.95. Story of an interesting little car and its controversial inventor.

INTRODUCTION TO ORGANIC CHEMISTRY—F. E.

Condon and Herbert Meislich—Holt, Rinehart & Winston, 841 p., \$10.50. Text for two-semester course, introduces concepts gradually and logically within a framework of experimental fact.

MARINELAND DIVER—Jake Jacobs, as told to Sylvia Jacobs—Dodd, 178 p., photographs, \$4. Story of commercial deep-sea diver and his work in oceanarium.

MODERN ASPECTS OF INORGANIC CHEMISTRY—H. J. Emeleus and J. S. Anderson—Van Nostrand, 3rd rev. ed., 611 p., illus., \$7.75. Revised to include the most important developments in inorganic chemistry.

NEPAL: A Cultural and Physical Geography—Pradyumna P. Karan with William M. Jenkins—Univ. of Ky. Press, 100 p., illus., 35 maps, \$10. Large-format, up-to-date geography of Nepal, based on 1955 census data, and on author's field study and air reconnaissance.

NEW HOPE FOR YOUR HAIR: A Scientific Guide to Healthy Hair for Men, Women and Children—Irwin I. Lubowe—Dutton, 253 p., illus., \$3.95. Dermatologist presents in non-technical language facts about the growth, loss, disorders and treatment of hair.

NUCLEAR SPECTROSCOPY, Part A and Part B—Fay Ajzenberg-Selove, Ed.—Academic, 621 p. and 526 p., illus., \$16 each. Volume 9a and 9b of Pure and Applied Physics. For the use of graduate students preparing for experimental research in nuclear spectroscopy and for specialists who wish to acquire broader understanding of the whole field.

OF NATURE, TIME AND TEALE: A Biographical Sketch of Edwin Way Teale—Edward H. Dodd, Jr.—Dodd, 63 p., photographs, \$3. Beautiful little book about a great naturalist's ways and work.

PHYSICS AND MEDICINE OF THE ATMOSPHERE AND SPACE—Otis O. Benson, Jr. and Hubertus Strughold, Eds.—Wiley, 645 p., illus., \$12.50. Proceedings of the Second International Symposium, 1958. Source of data on progress on the "vertical frontier."

PRINCIPLES AND PROCEDURES OF STATISTICS: With Special Reference to the Biological Sciences—Robert G. D. Steel and James H. Torrie—McGraw, 481 p., \$10.50. Presents statistical techniques and disciplines necessary to conduct experiments and analyses of experimental data.

RADIATIVE TRANSFER—S. Chandrasekhar—Dover, 393 p., paper, \$2.25. Unabridged and slightly revised version of work first published in 1950.

REVOLUTION IN TRANSPORTATION—Karl M. Ruppenthal, Ed.—Graduate School of Business, Stanford Univ., 153 p., \$4.75; paper, \$3.75. Transportation executives and other experts present developments, problems, and perspectives in their respective fields of transportation.

RIGHT-LEFT DISCRIMINATION AND FINGER LOCALIZATION: Development and Pathology—Arthur L. Benton, foreword by Adolph L. Saks—Hoebner-Harper, 185 p., \$7. Monograph reviews and evaluates research on the two behavioral deficits of right-left disorientation and finger agnosia.

SCIENCE IN SPACE. Chapter VI: The Sun—Leo Goldberg—Nat. Acad. of Sciences-Nat. Res. Council, 24 p., paper, \$1. (See p. 356.)

THE STATUS OF RESEARCH AND MANPOWER IN

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METEOROLOGY—Committee on Atmospheric Sciences—*Nat. Acad. of Sciences-Nat. Res. Council*, 13 p., paper, single copies free upon request direct to publisher, Washington 25, D. C. Summary of training and research in the meteorological sciences in U. S. universities.

THE STORY OF CHEMISTRY—Georg Lockemann—*Philosophical Lib.*, 277 p., \$4.75. German chemist reviews the history of chemistry from antiquity to the twentieth century.

TEACHING SCIENCE THROUGH CONSERVATION—Martha E. Munzer and Paul F. Brandwein—*McGraw*, 470 p., illus., \$7.50. Practical laboratory and field study procedures for the study of conservation taught through general science, biology, chemistry and physics.

TECHNICAL ASPECTS OF DETECTION AND INSPECTION CONTROLS OF A NUCLEAR WEAPONS TEST BAN: Summary Analysis of Hearings, April, 1960—Joint Committee on Atomic Energy—*GPO*, 78 p., illus., paper, 30¢. Unanimously approved by all members of Special Subcommittee on Radiation and Subcommittee on Research and Development.

THEORY OF WING SECTIONS: Including a Summary of Airfoil Data—Ira H. Abbott and Albert E. von Doenhoff—*Dover*, rev. ed., 693 p., illus., paper, \$2.95. Corrected version of reference work first published in 1950.

THREE COPERNICAN TREATISES: The Commentariolus of Copernicus, The Letter against Werner, The Narratio Prima of Rheticus—transl. & introd. by Edward Rosen—*Dover*, 2nd rev. ed., 283 p., paper, \$1.75. With an annotated Copernicus bibliography, 1939-1958.

A TREATISE ON GYROSTATICS AND ROTATIONAL MOTION: Theory and Applications—Andrew Gray—*Dover*, 530 p., illus., paper, \$2.75. Unabridged reprint of work first published in 1918.

THE UNIVERSE OF LIGHT—Sir William Bragg—*Dover*, 283 p., illus., paper, \$1.85. Reprint of expanded, famous Royal Institute Christmas Lectures, for the general reader.

A VARIABLE ATMOSPHERIC-DENSITY MODEL FROM SATELLITE ACCELERATIONS—Luigi G. Jacchia—*Smithsonian Astrophysical Observatory*, Special Report No. 39, 15 p., paper, single copies free upon request direct to publisher, Cambridge 38, Mass.

Science News Letter, June 4, 1960

ORNITHOLOGY

Southern Birds Reported Flying Farther North

BIRDS ARE GOING farther north than they did a few years ago, according to Prof. Joseph Hickey of the University of Wisconsin wildlife management department.

Prof. Hickey said a northward trend in the ranges of birds has been noted in the United States. A number of formerly southern species now pushing into northern states.

He said a similar northward trend has been reported in Europe, and bird species from the southern parts of Europe have even been invading Scandinavia, Greenland and Iceland.

In the United States the blue wing warbler, tufted titmouse, cardinal, mockingbird and the turkey vulture are among the species moving north, Prof. Hickey said.

Science News Letter, June 4, 1960

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METALLURGY

Furnace Melts Materials

AN INDUSTRIAL furnace has been developed that produces "exceptionally pure" ingots of space-age materials by bombarding these hard-to-melt materials with a high-powered electron beam.

It tackles with equal vigor the melting, alloying, and refining of such hard-to-handle materials as tantalum, molybdenum, columbium, tungsten, thorium, cobalt, nickel and hafnium. Some of these materials are so active chemically that it is difficult to obtain them in a pure state. Others have extraordinarily high heat resistance and stubbornly resist melting.

The furnace will produce ingots of up to 50 pounds for tantalum, and of proportionate weights for the other materials. The biggest ingot the furnace will make measures four inches in diameter and 14 inches long.

Developed by the NRC Equipment Corporation, subsidiary of the National Research Corporation, Newton, Mass., the new furnace works in principle like a TV picture tube. A high-powered electron gun blasts a target melt area. The electron beam is focused by a magnetic focusing coil. Unlike the TV tube, the electron beam bombards a single spot instead of sweeping the melt area. But just as the TV screen has a high voltage applied, so a 20,000-volt attracting force is applied to the stock to be melted. The electron beam attacks this stock with a power of 60,000 watts.

Many engineering problems had to be solved in the development of this workhorse furnace. The high voltages used could cause bad electrical flashes inside that could wreck the electron gun. Also, high voltages

on the stock to be melted could cause X-rays to be produced during a melt. This would necessitate protective shielding around the whole furnace if such was to be a standard operating condition. Further, sudden gases belched from the melting metal could attack and harm the electron gun.

But the new vacuum furnace is said to overcome these problems to such an extent that it can be operated by skilled labor.

Science News Letter, June 4, 1960

CONSERVATION

Tree's Value Doubles Between 60 and 70 Years

THE NUMBER of board feet in a Wisconsin hardwood tree nearly doubles between the ages of 60 and 70 years, statistics compiled by the Wisconsin Conservation Department show. The department said that the average hardwood tree has reached a 12-inch diameter in 60 years, and would then produce about 57 board feet of lumber. But at the end of another 10 years, the same tree would produce 110 board feet. When it reaches the age of 100 it will yield nearly 300 board feet. In addition, the lumber from the older trees will bring a premium price because of its higher quality, the department said.

Science News Letter, June 4, 1960

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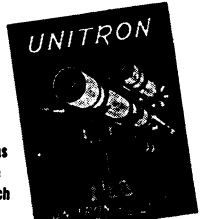
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