

Books of the Week

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ATOMS AT WORK: Part I—Power from the Atom Lee DuBridge; Part II—Atomic Energy Benefits—radioisotopes—Paul C. Aebersold—*Council on Atomic Implications*, 48 p., illus., paper, \$1.00. An explanation for the layman.

EDGE OF THE JUNGLE—William Beebe—*Duell*, rev. ed., 248 p., \$3.00. A new edition of the author's study of the animal life in British Guiana, originally published in 1921.

FERTILITY AND STERILITY, Vol. I, No. 1—Pendleton Tompkins, Ed.—*Paul B. Hoeber*, bimonthly, \$8.00 per year in U.S., \$9.50 Foreign, single copies \$1.50. The official journal of the American Society for the Study of Sterility, devoted to the clinical aspects of infertility.

FROGS AND TOADS—Herbert S. Zim—*Morrow*, approx. 60 p., illus., \$2.00. Sixth in a series of science picture books. Skillful illustrations for every page of text which greatly increase the value of the book.

FUNDAMENTALS OF DETERGENCY—William W. Niven, Jr.—*Reinhold*, 256 p., illus., \$5.50. Intended to bridge the gap between the general and specialized information on detergency.

FUSIBLE ALLOYS CONTAINING TIN—*Tin Research Institute*, 24 p., illus., paper, free upon request to publisher, 492 West Sixth Avenue, Columbus 1, Ohio. A booklet discussing the composition, properties and uses of some of these alloys.

GEOLOGY AND GROUND-WATER RESOURCES OF NORTON COUNTY AND NORTHWESTERN PHILLIPS COUNTY, KANSAS—John C. Frye and A. R. Leonard—*University of Kansas*, 144 p., illus., paper, 25 cents. Results of data collected by the authors during the past four years.

GRAPHICAL METHODS AS APPLIED TO EXTRACTION PROBLEMS—Fred W. Bull and Guido J. Coli—*Virginia Polytechnic Institute*, 62 p., illus., paper, 50 cents. An introduction to the basic principles of extraction problems.

INFECTION AND SEPSIS IN INDUSTRIAL WOUNDS OF THE HAND: A Bacteriological Study of Aetiology and Prophylaxis—R. E. O. Williams and A. A. Miles—*His Majesty's Stationery Office* (U. S. Distributors: British Information Services, New York, N.Y.), Special Report Series No. 266, approx. 10 p., paper, 40 cents. A technical report.

AN INTRODUCTION TO THE ENGINEERING PROFESSION: Concerning Engineering Orientation and Engineering Problems—John G. McGuire and Howard W. Barlow—*Addison-Wesley*, 207 p., illus., \$3.50. A problem text for introductory engineering courses.

JACOB STEINER'S GEOMETRICAL CONSTRUCTIONS WITH A RULER: Given a Fixed Circle with Its Center—Raymond Clare Archibald, Ed.—*Scripta Mathematica*, 88 p., illus., \$2.00. First English edition of Steiner's work done in the mid-nineteenth century. Translated from the German by Marion Elizabeth Stark.

MAKING THE GRADE AS DAD—Walter and Edith Neisser—*Public Affairs Committee*, Pamphlet

No. 157, 32 p., illus., paper, 20 cents. Answers many questions of fathers.

MAKING INVENTIONS PAY: A Practical Guide to Selling, Protecting, Manufacturing, and Marketing Your Inventions—Joseph C. Keeley—*Whittlesey*, 246 p., \$2.95. Many practical suggestions on how to make your invention pay.

THE MEANING OF RELATIVITY: Including The Generalized Theory of Gravitation—Albert Einstein—*Princeton University Press*, 3rd ed., 150 p., illus., \$2.50. A new edition of Einstein's classic presentation of the theory of relativity. The author has added a new appendix on the "generalized theory of gravitation" which attempts to interrelate all known physical phenomena.

OUTLINE OF RADIO, TELEVISION AND RADAR: A Symposium—*Chemical Publishing Co.*, 688 p., illus., \$12.00. Fundamental principles upon which radio, television and radar depend, as well as the apparatus used and the various applications, are explained by a group of specialists.

PATENT PRACTICE AND MANAGEMENT: For Inventors and Executives—Robert Calvert—*Scarsdale*, 371 p., \$5.00. Presents the essentials of the patent law and also some of its unusual features.

THE SCIENCE OF FLIGHT—O. G. Sutton—*Penguin Books* (U. S. Distributors: Allen Lane), 208 p., illus., paper, 35 cents. A non-technical account of aerodynamics.

SCIENCE AND THE GOALS OF MAN: A Study in Semantic Orientation—Anatol Rapoport—*Harper*, 262 p., \$3.50. Discusses the age-old question "Is Science merely a tool, or can it be a way of life?"

SEWING MADE EASY—Mary Lynch—*Nelson Doubleday*, 400 p., illus., \$3.95. A guide for both the beginner and the expert. There are 1000 step-by-step pictures.

SOCIETY AND ITS CRIMINALS—Paul Reiwald—*International Universities Press*, 315 p., \$4.50. A study of the asocial person and his relationship to society.

WARTIME ECONOMIC PLANNING IN AGRICULTURE: A Study in the Allocation of Resources—Bela Gold—*Columbia University Press*, 594 p., illus., \$6.75. A study of the factors responsible for short-comings in agricultural mobilization during the recent war.

Science News Letter, March 4, 1950

ENGINEERING

Super-Overdrive Gives More Miles Per Gallon

➤ MORE automobile mileage per gallon of gasoline is possible with transmissions to permit drive shaft speed to approach more closely engine speed, a University of Illinois engineer declared in Urbana-Champaign, Ill.

The statement was made by Prof. W. L. Hull on the basis of studies made by him.

The type of transmission suggested is a super-overdrive. The transmission in an automobile cuts high engine speed to a lower speed in the drive shaft and consequently gives the car lower speed.

Present transmissions vary the relation between engine speed and drive shaft speed from 12 to one in low gear and from about four to one in overdrive. Prof. Hull visions level running ratios of 1.25 to one.

Present lower-priced automobiles have engines capable of delivering 80 horsepower at 60 miles an hour, he said. But on level running only 31 horsepower are actually used for travel. A suitable super-overdrive transmission would let the engine run at lower speed, therefore more efficiently and using less gasoline.

The technical explanation of why lower engine speeds provide more mileage lies in friction, he added. An 80-horsepower engine, running at 60 miles an hour, may use only 31 horsepower to move the automobile, yet devote another 30 horsepower to overcoming the engine's own internal friction. If the engine could move the auto at the same speed while itself running slower, then its own friction might consume only five horsepower.

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Coconut milk contains a still-unidentified substance that seems to stimulate growth in certain plant tissues.



New buffer solutions for calibrating pH Instruments

A new line of buffers for calibrating any pH instrument is now available. Made, and checked after bottling, to NBS specifications, nominal pH values are 4, 7, and 9. Actual values at 25 C are 4.01, 6.86, and 9.16. Actual values in 5-deg. steps from 0 to 60 C are printed on the 1-pt. unbreakable, non-contaminating polyethylene bottles. Printing in 3 colors aids in lab identification; red denotes acid; black, neutral, and blue, alkaline buffers.

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