

# 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.

**THE ACTION OF INSULIN ON CELLS**—M. E. Krahl—*Academic Press*, 202 p., \$7.50. Reports and appraises current investigations of the mechanism of insulin action, its principal effects and chemistry.

**ADVANCES IN INORGANIC CHEMISTRY AND RADIOCHEMISTRY**, Vol. 3—H. J. Emeléus and A. G. Sharpe, Eds.—*Academic Press*, 463 p., \$12.50. Contains chapters on molecular complexes of halogens, and on atmospheric activities and dating procedures.

**ADVANCES IN MANAGEMENT OF SOUTHERN PINE**—A. B. Crow, Ed.—*La. State Univ. Press*, 117 p., illus., \$4. Symposium papers and discussion of recent advances in forest regeneration, planting and direct seeding, thinning practices and other techniques.

**AFRICAN GENESIS: A Personal Investigation into the Animal Origins and Nature of Man**—Robert Ardrey—*Atheneum*, 380 p., illus. by Berdine Ardrey, \$6.95. Controversial theory of man's origin and human behavior in the light of recent evidence.

**AIDS TO PHYSICS**, Vol. I: Mechanics, Properties of Materials, Hydrostatics, Heat; Vol. II: Static Electricity, Magnetism, Current Electricity and Light—F. J. Jackson, 2nd ed. by P. C. Gibbs—*Bailliere (Williams & Wilkins)*, 245 p., 310 p., illus., \$3.50 each. Pocket-size student's aid.

**ANIMAL BEHAVIOUR**—J. L. Cloudsley-Thompson—*Macmillan*, 162 p., illus., \$4.50. Explains

modern approach to the study of animal behavior in their environment, feeding and fighting, migration and communication.

**ANIMAL ECOLOGY**—S. Charles Kendeigh—*Prentice-Hall*, 468 p., illus., \$11. Text covers the study of living animals in their natural environments, how they interrelate within biotic communities, and their geographical distribution.

**ANODIC OXIDE FILMS**—L. Young—*Academic Press*, 377 p., illus., \$11. Monograph surveys fundamental work on the formation and properties of anodic oxide films on a wide variety of metals including tantalum, niobium, aluminum, iron, platinum and lead.

**THE ATOM: A Simplified Description**—George L. Bush and Anthony A. Silvidi—*Barnes & Noble*, 147 p., diagrams, paper, \$1.25. College outline.

**BIRD-SONG: The Biology of Vocal Communication and Expression in Birds**—W. H. Thorpe—*Cambridge*, 143 p., illus., \$3.75. Monograph on recent developments in the study of bird songs and call notes as a result of tape recordings and the spectrographic analysis of sounds.

**THE BIRD WATCHER'S QUIZ BOOK**—Henry Hill Collins, Jr.—*Harper*, 116 p., illus. by Russell Francis Peterson, \$2.95. More than 1700 grouped questions to exercise amateur and expert bird watcher's knowledge about birds.

**CAPTIVES OF THE SUN**—James S. Pickering—*Dodd*, 326 p., photographs, diagrams, \$4.95. About moon, planets, comets, asteroids and meteors within the "captive" solar system.

**THE CHEMISTRY OF HETEROCYCLIC COMPOUNDS**—G. M. Badger—*Academic Press*, 498 p., \$12. Addressed to senior undergraduate and graduate students in organic chemistry.

**A CLASSIFICATION OF LIVING ANIMALS**—Lord Rothschild—*Wiley*, 106 p., \$4.75. Up-to-date, single-volume classification of the animal kingdom with animal and group index, intended for physiologists, biochemists, biophysicists and biologists.

**COMPUTER APPLICATIONS, 1960**—Benjamin Mittman and Andrew Ungar—*Macmillan*, 193 p., illus., \$5.75. Proceedings cover improvements in business and management as well as engineering and scientific applications.

**COOPERATION AND COMPETITION AMONG PRIMITIVE PEOPLES**—Margaret Mead—*Beacon Press*, 544 p., paper, \$2.95. Revised edition of 1937 book with new preface by author.

**ELECTRONIC EQUIPMENT DESIGN AND CONSTRUCTION**—Geoffrey W. A. Dummer, Cleo Brunetti and Low K. Lee—*McGraw*, 241 p., illus., \$8.50. Practical manual, treats also effects of severe environments encountered on earth, in the atmosphere and in space.

**ENCYCLOPEDIA OF CHEMICAL LABELING**—Iberty and Eleanor Mellan—*Chemical Pub. Co.*, 111 p., illus., \$8.75. On the practice of chemical labeling, classification method and key.

**FERTILITY AND SURVIVAL: Population Problems from Malthus to Mao Tse-Tung**—Alfred Sauvy, transl. from French—*Criterion Bks.*, 232 p., \$7.50. French demographer outlines issues and facts, and examines possible solutions.

**FORESIGHT AND UNDERSTANDING: An Enquiry Into the Aims of Science**—Stephen Toulmin, foreword by Jacques Barzun—*Ind. Univ. Press*, 116 p., \$3. Philosophical evaluation of what makes a scientific theory, or investigation, a successful or unsuccessful one.

**FREING INTELLIGENCE THROUGH TEACHING: A Dialectic of the Rational and the Personal**—Gardner Murphy, foreword by Arthur G. Wirth—*Harper*, 64 p., \$2.95. Psychologist analyzes those factors in human experience that tend to release intelligence more fully.

**GRADUATE EDUCATION: A Critique and a Program**—Oliver C. Carmichael—*Harper*, 213 p., \$4.50. A searching study of the weaknesses and strengths of graduate work requirements, number and quality of Ph. D.'s and program recommendations.

**HOW HELICOPTERS ARE MADE**—David C. Cooke—*Dodd*, 64 p., photographs, \$2.50. A book for boys.

**INSECT SOUNDS**—P. T. Haskell—*Quadrangle Bks.*, 189 p., illus., \$5.75. Presents outline of current knowledge of the various mechanisms by which sounds are generated and detected, analyzes typical song patterns and behavior.

**INTRODUCTION TO NATURAL AND SYNTHETIC RUBBERS**—D. W. Huke—*Chemical Pub. Co.*, 164 p., illus., \$5. Concise British treatment for non-technical readers.

**LABORATORY MANUAL FOR VETERINARY BACTERIOLOGY**—Ival Arthur Merchant, R. Allen Packer and L. N. Brown—*Burgess*, 179 p., paper, \$4. Divided into general bacteriology, immunology and pathogenic bacteriology.

**MAN AND THE CHEMICAL ELEMENTS**—J. Newton Friend—*Scribner*, rev. 2nd ed., 354 p., illus., \$6. A historical account of the successive discovery and utilization of the elements from the earliest times to the nuclear age.

**THE NATURE AND USES OF MODERN FUNGICIDES**—Eric G. Sharville—*Burgess*, 308 p., illus., paper, \$6. Designed to acquaint student of technical agriculture with modern methods of plant disease control.

**OCCUPATION: ADVENTURE**—Jim Thorne—*Doubleday*, 164 p., photographs, \$3.95. Personal story of a skin-diver and underwater photographer.

**RANDOM PROCESSES IN ELECTRICAL AND MECHANICAL SYSTEMS**—V. L. Lebedev, transl. from Russian—*OTS*, 122 p., paper, \$1.25.

**STATISTICAL ABSTRACT OF THE UNITED STATES, 1961**—Edwin D. Goldfield, Dir.—*Bur. of the Census (GPO)*, 1037 p., maps, \$3.50. Statistical reference volume with bibliography of sources.

**THE STORY OF DAMS: An Introduction to Hydrology**—Peter Farb, foreword by Lt. Gen. E. C. Itchner—*Harvey House*, 126 p., photographs, illus. by G. Kanelous, \$2.95. Tells boys why and how big dams are built, and suggests experiments they can do.

**THE TEACHING OF SCIENCE IN THE ELEMENTARY SCHOOL**—June E. Lewis and Irene C. Potter—*Prentice-Hall*, 381 p., illus., \$7.50. Specific suggestions, book emphasizes methods for developing children's science understanding through problem solving.

**THE TOADSTOOL MILLIONAIRES: A Social History of Patent Medicines in America before Federal Regulation**—James Harvey Young—*Princeton Univ. Press*, 282 p., illus., \$6. A documented history of quackery in America.

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VISUAL PROBLEMS OF COLOR: Symposium, Vols. I and II—George Wald and others—*Chemical Pub. Co.*, 395 p., 367 p., illus., \$8.50 each. Proceedings contain 40 papers on results of scientific investigations in 11 countries.

VOCABULARIO TECNICO INGLES-ESPAÑOL—Popular Mechanics, Ed.—*Hawthorn*, rev. ed., 171 p., illus., \$2.95. English-Spanish dictionary of technical terms.

WHAT'S NEW IN SCIENCE—Fred Reinfeld—*Sterling*, rev. ed., 206 p., illus., paper, \$1.25. Deals with scientific developments during 1960, indexed.

WONDERS OF THE WASP'S NEST—Sigmund A. Lavine—*Dodd*, 63 p., illus. by Ernest H. Hart, \$3. Informative reading for boys and girls.

THE WORLD'S WAR ON WANT: How United Nations Members Share Skills and Resources Through Technical Assistance—Kathleen McLaughlin—*Oceana*, 80 p., \$2.50; paper, \$1. Short review of U.N. technical aid to underdeveloped countries.

• Science News Letter, 80:388 December 9, 1961

#### AGRICULTURE

### Two New Barley Varieties Developed

► TROPHY and Larker, two new varieties of barley have been developed by the North Dakota Agricultural Experiment Station as the result of an accelerated breeding program.

Both are superior in kernel plumpness to the presently grown malting varieties, Traill and Kindred. By growing in greenhouses and increasing field crops, 12 generations were grown in seven years.

The new varieties have better or equal protein content, malt extract percentage and enzymatic activity, and yields compare favorably with Traill but are superior to Kindred. The new varieties, like the old, are resistant to stem rust. Trophy appears to have some resistance also to net blotch, a leaf blighting disease.

To increase the seed, more than 4,000 acres in North Dakota were sown to Trophy and Larker this year.

• Science News Letter, 80:389 December 9, 1961

## Questions

ASTRONOMY—What are four possible explanations suggested by scientists for the Star of Bethlehem? p. 386.

ENTOMOLOGY—What new method of insect preservation eliminates the need of pinning and mounting specimens in the field? p. 387.

MEDICINE—What major advance of atomic medicine will reduce the hazards of childbirth? p. 379.

OPHTHALMOLOGY—Is it dangerous to the eyes to watch TV and movies? p. 384.

Photographs: Cover, U.S. Naval Ordnance Laboratory; p. 379, Biographical Photographic Association; p. 382, F. C. Livingstone; p. 383, General Electric Company and Lockheed Missiles and Co.; p. 386, Lick Observatory; p. 392, Science Service.



### BLAISDELL PUBLISHING COMPANY

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We are pleased to announce the publication of BLAISDELL SCIENTIFIC PAPERBACKS. The first six titles in this new series are translations of the Russian series of mathematics paperbacks known as "Popular Lectures in Mathematics." These paperbacks have been translated by Halina Moss under the editorial supervision of Ian N. Sneddon. The BLAISDELL SCIENTIFIC PAPERBACK SERIES is directed to an audience of educators, laymen, high school and college students, and research workers in all fields of science.

#### 7830. INEQUALITIES, P. P. Korovkin 95c

Several remarkable inequalities that have played major roles in diverse branches of mathematics are presented with their applications to interesting problems. Korovkin describes the use of these inequalities in the calculation of limits and in the finding of greatest and least values; he gives clear proofs of the inequalities and detailed solutions to problems.

#### 7820. GEOMETRICAL CONSTRUCTION USING COMPASSES ONLY, A. N. Kostovskii 95c

Basing his book on the rich theory of constructions in the Euclidean plane, Kostovskii describes how work in the geometry of compasses has been extended to form a theory of constructions in non-Euclidean planes (such as the projective plane of a perspective drawing). He proceeds to a general discussion of methods for solving construction problems with compasses and then to particular problems.

#### 7870. THE RULER IN GEOMETRICAL CONSTRUCTIONS, A. S. Smogorzhevskii 95c

The requirements of surveying and the development of theories of perspective have spurred the study of geometrical constructions that can be performed with the ruler only. Smogorzhevskii discusses typical construction problems that can be solved with the ruler alone (or with the ruler and an auxiliary figure). He uses methods of synthetic geometry exclusively.

#### 7850. THE METHOD OF MATHEMATICAL INDUCTION, I. S. Sominskii 95c

A major tool for modern mathematicians, the method of mathematical induction is the expression of a simple concept. The method consists in proving the validity of a statement by demonstrating that if it holds for 1 and for n, then it must also hold for n + 1. Sominskii presents the essentials of the method, many examples of its use, and problems for the reader to solve with its aid.

#### 7803. SOME APPLICATIONS OF MECHANICS TO MATHEMATICS, V. A. Uspenskii 95c

In this book, Uspenskii discusses some of the mathematical problems that can be solved elegantly through applications of the methods of classical mechanics. He formulates these problems in terms of mechanical analogues and delineates their solutions, using the laws of mechanical equilibrium.

#### 7815. FIBONACCI NUMBERS, N. N. Vorob'ev 95c

Some of the remarkable properties of Fibonacci numbers and their occurrence in number theory, continued fractions, and geometry are treated here. In his discussion of the Golden Section rectangle (the ratio of the lengths of whose sides is the ratio of two consecutive Fibonacci numbers), Vorob'ev cites the attempts of ancient and medieval philosophers to base aesthetic and philosophical theories on the beauty of these figures.



### NEW MATHEMATICAL LIBRARY

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Calculus is presented as a way of understanding such phenomena as the velocity of a moving object at any movement, the rate at which moving objects change their speeds, and, more generally, the way in which quantities vary as factors affecting them change.

#### 7903. AN INTRODUCTION TO INEQUALITIES by Edwin Beckenback, Professor of Mathematics, University of California, Los Angeles, and Richard Bellman, RAND Corporation \$1.95

An introduction to the fascinating world of unequal magnitudes, this book begins with a systematic discussion of the relation "greater than" and the meaning of "absolute values" of numbers.

#### 7904. GEOMETRIC INEQUALITIES by Nicholas D. Kazarinoff, Associate Professor of Mathematics, University of Michigan \$1.95

This book simply states geometric problems about maximum and minimum lengths and areas; some of these have been solved, others have puzzled men since the Greeks.

#### 7905. THE CONTEST PROBLEM BOOK Compiled and with solutions by Charles T. Salkind \$1.95

Problems from the annual high school contest of the Mathematical Association of America.

#### 7906. THE LORE OF LARGE NUMBERS Philip J. Davis, Chief of the Numerical Analysis Section of the National Bureau of Standards \$1.95

Using large numbers as a unifying theme, the author introduces exponents, computation, number theory, and sequences. Several historical passages reveal mathematics as a living thing that grows and changes with the generations. Tables listing interesting and useful numbers in the physical universe are appended.

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