

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.

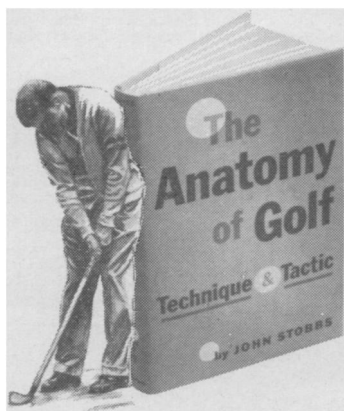
ABC'S OF SYNCHROS AND SERVOS—Alan Andrews—*Sams*, 96 p., illus., paper, \$1.95. Shows how servomechanisms operate, and how they are used in automatic control systems.

AIR CONDITIONING: Installation and Maintenance—Ernest Tricomi—*Sams*, 160 p., illus., paper, \$2.95. Includes theory, descriptions of units for home and auto, plus troubleshooting and servicing guide.

AMATEUR RADIO ANTENNA HANDBOOK—Harry D. Hooton—*Sams*, 160 p., illus., paper, \$2.95. Covers ham antenna systems, including theory and practical design applications, transmission lines, impedance matching, coupling, "homebrew" arrays and towers.

BASIC EXPERIMENTAL ORGANIC CHEMISTRY—James Cason and Henry Rapoport—*Prentice-Hall*, 273 p., illus., paper, \$3.75. Describes experiments teaching the techniques, skills, and philosophies involved in the synthesis, purification and identification of organic compounds.

BIOCHEMISTRY, Vol 1, No. 1—Hans Neurath, Ed.—*Am. Chemical Soc.*, 191 p., paper, \$5; bi-monthly publication; \$26 annually. Presents the results of original research in all areas of fundamental biochemistry, with emphasis on investigations which suggest new concepts and experimental approaches.



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CITIZENS BAND RADIO MANUAL, Vol. 2—Howard W. Sams Engineering Staff—*Sams*, 160 p., illus., paper, \$2.95. Written for the user and the technician who require CB equipment.

COMBAT AIRCRAFT OF THE WORLD—F. G. Swanborough—*Taplinger*, 122 p., photographs, \$6.50. Provides a pictorial record of over sixty of the most significant warplanes in service with, or under development for, the world's air forces.

CULTURAL STABILITY AND CHANGE AMONG THE MONTAGNAIS INDIANS OF THE LAKE MELVILLE REGION OF LABRADOR—John T. McGee—*Catholic Univ. Press*, 159 p., photographs, \$2.75. A dissertation, presenting field study of contemporary Indian life.

THE EARTH—Arthur Beiser and the Editors of LIFE—*Time, Inc. (Book Div., Chicago)*, 192 p., illus., \$3.95. Profusely illustrated introduction to the planet earth, depicting its external, internal and atmospheric aspects.

THE ENCYCLOPEDIA OF ELECTRONICS—Charles Susskind—*Reinhold*, 974 p., illus., \$22.50. Divides electronics into some 500 topics and presents expert article on each, directed primarily at professional readers.

EXPERIMENTAL ELECTRONICS FOR YOUNG PEOPLE—Harvey Pollack—*Rider, J. F.*, 128 p., illus., \$3.45. Presents experimental projects with explanations and theoretical details to help young people understand the basic principles of electronics.

GIANTS OF SCIENCE—Philip Cane—*Pyramid*, 288 p., illus. by Samuel Nisenon, paper, 75¢. Reprint (1959), presents brief biographies and contributions of 51 scientists whose discoveries and inventions revolutionized the world.

GLOSSARY OF TERMS FREQUENTLY USED IN PHYSICS AND COMPUTERS—Phyllis Fox—*A.I.P.*, 22 p., paper, \$1. Defines some of the more usual terms in computer science, and in the applications of physics to computer design.

HOW TO READ SCHEMATIC DIAGRAMS—Donald E. Herrington—*Sams*, 128 p., illus., paper, \$1.50. Explains purpose and meaning of various types of electronic equipment diagrams, different symbols used, and tells how to interpret complete diagrams.

INSTRUMENTAL OPTICS—G. A. Boutry, transl. by R. Auerbach—*Interscience*, 544 p., illus., \$27.50. Written mainly for prospective instrument designers, discusses fundamental principles, shows what performance can be expected from a given system and indicates the boundaries set by inherent imperfections of instruments and physiological characteristics of human vision.

AN INTRODUCTION TO COMPUTATIONAL METHODS—K. A. Redish—*Wiley*, 211 p., illus., \$5.75. Written for the "occasional" computer and for students of science and engineering, who need a knowledge of numerical methods, with emphasis placed on both checking processes and estimation of the accuracy of a result.

AN INTRODUCTION TO PROGRAMED INSTRUCTION—William A. Deterline—*Prentice-Hall*, 131 p., illus., paper, \$3. A nontechnical introduction to

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the basic devices for the presentation of programmed instruction, learning principles involved in programming, and controversial issues.

JAMES CLERK MAXWELL AND ELECTROMAGNETISM—Charles Paul May—*Watts, F.*, 152 p., illus., \$1.95. Biography of Maxwell's scientific accomplishments, for young people.

THE MECHANICAL PROPERTIES OF ELECTROLYTIC DEPOSITS—A. T. Vagramyan and Yu. S. Petrova, transl. from Russian—*Consultants*, 108 p., illus., paper, \$12.50. Monograph attempts to establish a connection between the structure and physicochemical properties of the deposit, the rate of reduction of the metallic ions, and the absorption and occlusion of surface-active substances and hydrogen, and presents authors' experimental results.

MODEL SUBMARINES FOR BEGINNERS—H. H. Gilmore—*Harper*, 122 p., diagrams by author, \$2.50. Step-by-step instructions for making simplified models of 14 "real" submarines.

MODERN INFRARED TECHNOLOGY—Barron Kemp—*Sams*, 255 p., illus., paper, \$4.95. Written for the electronic technician, student or experimenter, presents basic principles and applications in spectroscopy and spectrophotometry, temperature measurement, surveillance and detection, solid-state physics, telescoping and communications.

NATIONAL PHYSICAL LABORATORY: Report for the Year 1961—Dept. of Scientific and Industrial Research—*HMSO (Brit. Information Services)*, 233 p., illus., paper, \$3. Reports on the work done in different divisions of the British equivalent to our National Bureau of Standards.

THE NEW INTERNATIONAL YEAR BOOK: A Compendium of the World's Progress for the Year 1961—Virginia Carew and Drenka Willen, Eds.—*Funk*, 560 p., illus., \$10. Survey volume of scientific, social and political events in 1961. Sections on atomic power and physics contributed by Science Service.

PSYCHIATRIC RESEARCH IN PUBLIC SERVICE—Richard M. Steinhilber and George A. Ulett, Eds.—*American Psychiatric Assn.*, 166 p., paper, \$2. Programs, current and planned, together with some research that has been produced in drug response, psychiatric genetics and community extension service.

THE RADIOCHEMISTRY OF URANIUM—James E. Grindler—*NAS-NRC (OTS)*, 350 p., paper, \$3.50. Includes a review of the nuclear and chemical features of particular interest to the radiochemist, a discussion of problems of dissolution of a sample and counting techniques and a collection of radio-chemical procedures.

RENEWING AMERICA'S CITIES—Thomas F. Johnson, James R. Morris, and Joseph G. Butts—*Institute for Social Science Research*, 130 p., \$5. Deals with the urban renewal process, housing, the developing federal role, programs and constitutional concepts, costs and problems.

RESEARCH IN BURNS—Curtis P. Artz, Ed.—*A.I.B.S. (Davis, F. A.)*, 442 p., illus., \$9.75. Proceedings of The First International Congress on Research in Burns, held at the National Naval Medical Center, Bethesda, Md., September 1960.

SELECTED PAPERS ON PHYSICAL PROCESSES IN IONIZED PLASMAS—Donald H. Menzel, Ed.—*Dover*, 374 p., paper, \$2.95. Presents the basic principles in spectroscopic analysis and develops them, for students in many areas of science.

SNAKES OF THE WORLD—Raymond L. Ditmars—*Pyramid*, 208 p., photographs, paper, 75¢. Reprint (1931). Describes distribution, general habits, general classification, poisonous snakes, and where they live.

SUPERFLUIDS, Vol. 1: Macroscopic Theory of Superconductivity—Fritz London—*Dover*, 173 p., diagrams, paper, \$1.45. Discusses the superconducting phenomenon that occurs at very low

temperatures in various pure metals, such as mercury, tin and lead, and in many alloys.

SYSTEMATIC DICTIONARY OF MAMMALS OF THE WORLD—Maurice Burton—Crowell, 307 p., illus., \$7.50. Includes nearly every family or species, tells general characteristics, habits, habitat, food and feeding habits, breeding, present status, range, longevity, and additional data.

THE THERMODYNAMICS OF ELECTRICAL PHENOMENA IN METALS AND A CONDENSED COLLECTION OF THERMODYNAMIC FORMULAS—P. W. Bridgman—Dover, 244 p., illus., paper, \$1.65. Written for theoretical physicists, teachers, and students, author begins with the fundamental formulas and develops the subject from there. Reprint (1925, 1934).

A TREATISE ON DYNAMICS OF A PARTICLE—Edward John Routh—Dover, 417 p., paper, \$2.25. Textbook on dynamics, written especially for the beginning student of mathematics and physics, emphasizing the concrete aspects, while providing a detailed treatment of the entire subject. Reprint (1898).

YOUR CAREER OPPORTUNITIES IN MEDICINE—Chas. Pfizer and Co., Inc., 30 p., illus., paper, single copies free upon request direct to publisher, 235 East 42nd St., New York 17, N. Y. Designed to help communities interest more students in careers in medicine.

YOUR FUTURE IN MEDICAL TECHNOLOGY—Grace Paul—Rosen, R., 156 p., \$2.95. Thorough study of the field, to help students weigh their capabilities and ambitions in light of the requirements, advantages and drawbacks of a medical technologist's career.

• Science News Letter, 82:28 July 14, 1962

CHEMISTRY

First Computer-Produced, Illustrated Periodical

► **DEVELOPMENT** of the world's first computer-produced, illustrated periodical has been started in Columbus, Ohio, by the Chemical Abstracts Service of the American Chemical Society. A Public Health Service grant of \$74,305 has made the first year of the project possible.

The experimental publication, to be produced at high speed, will contain abstracts of current information on the biological activities of chemical compounds reported in scientific journals from many countries. Graphic formulas and an index also will be included.

Early efforts will be directed towards production of an experimental issue, possibly to appear late this year. The publication, if successful, will provide current abstracted information intended particularly for researchers in the field of pharmacology and chemotherapy.

Information will be extracted and translated from original papers in many languages, transferred to "computer language" by a staff of analysts, and printed in English at high speed. Production has tentatively been set for two-week intervals.

The long term goal of the project is to extend whatever techniques are developed to other subdisciplines of chemistry.

Work on the project is being conducted in the Chemical Abstracts Service research and development division at Columbus under the direction of Dr. G. M. Dyson, director of research for CAS, and Dr. M. F. Lynch, also of the CAS staff.

• Science News Letter, 82:29 July 14, 1962

CHEMISTRY

Potent New Antibiotic Has No Adverse Effects

► A **POTENT ANTIBIOTIC** that does not have the adverse side effects of several related drugs now in use was described at the American Chemical Society's Eighth National Medicinal Chemistry Symposium, Boulder, Colo.

Scientists from the Upjohn Company, Kalamazoo, Mich., reported that they have succeeded in mapping the chemical structure of the antibiotic, which is called actinospectacin. The drug was discovered and isolated in the Upjohn laboratories last year.

It has been reported to show a broad spectrum of antibacterial activity in both laboratory and clinical trials, and to be effective in urinary tract and other serious infections.

Actinospectacin is designed for injection into the patient's muscle tissue or blood stream, depending on the kind and location of the infection. No oral dosage form has been developed.

Drs. Herman Hoeksema, A. D. Argoudelis and P. F. Wiley reported in detail the chemical detection methods they used in determining the structure of actinospectacin, the drug which is a distant chemical relative of the streptomycin-neomycin family of antibiotics. Unlike these relatives, however, actinospectacin has shown no tendency to cause nerve damage—specifically impairment of hearing—that sometimes results with the use of streptomycin or neomycin, they said.

Dr. Hoeksema pointed out that actinospectacin, Trobicin, was found to have a unique tricyclic or three-ring molecule in which "an unusual new type of sugar is joined with a new base, actinamine." This actinamine base, he said, is distantly related to the chemical base of both streptomycin and neomycin.

Actinospectacin is produced by a fermentation process using a species of microbe called *Streptomyces spectabilis*.

• Science News Letter, 82:29 July 14, 1962

Questions

CHEMISTRY—How is actinospectacin produced? p. 29.

HORTICULTURE—What chemical has been found to speed the germination of pine seeds? p. 24.

ORNITHOLOGY—How many Florida Everglade kites are still in existence? p. 22.

PHYSICS—How many elements were discovered with the 60-inch cyclotron at the Lawrence Radiation Laboratory? p. 19.

PUBLIC SAFETY—How many poison control centers are there in the U.S.? p. 23.

RADIOLOGY—When is radiation from fallout at highest levels? p. 26.

Photographs: Cover, IBM Corporation; p. 19, University of California; p. 21, Linde Company, Division of Union Carbide Corporation; p. 22, Brookhaven National Laboratory; p. 23, U.S. Food and Drug Administration; p. 26, U.S. Public Health Service; p. 32 (top), Weckesser Company, Inc.; p. 32 (bottom), Science Service.



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