

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 pint, 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.

ABOUT FRUIT—Solweig Paulson Russell—*Melmont Pubs.*, 47 p., illus. by Arnold Dobrin, \$2.50. For young children.

ANALYSIS AND DESIGN OF NONLINEAR FEEDBACK CONTROL SYSTEMS—George J. Thaler and Marvin P. Pastel—*McGraw*, 464 p., diagrams, \$14.50. Graduate textbook, develops foundation in nonlinear theory and its application.

AN ANATOMY FOR CONFORMITY—Edward L. Walker and Roger W. Heyns—*Prentice-Hall*, 103 p., \$3.95; paper, \$1.95. Reports on experimental project seeking a synthesis of social science approaches to common problems.

ANNUAL REVIEW IN AUTOMATIC PROGRAMMING, Vol. 2—Richard Goodman, Ed.—*Pergamon*, 394 p., \$12. Discussion of specific coding systems and programming languages, in particular the COBOL and ALGOL systems.

ANTHROPOLOGY AND MODERN LIFE—Franz Boas, new introd. by Ruth Bunzel—*Norton*, 255 p., paper, \$1.85. Reprint (1928).

ARCHIMEDES and the Door of Science—Jeanne Bendick—*Watts, F.*, 143 p., illus. by author, \$1.95. Juvenile biography.

BIOELECTRICITY—E. E. Suckling—*McGraw*, 233 p., diagrams, \$8.75. Written as a beginner's book for the doctor, basic scientist or graduate student who wants to use recently developed methods of electrical recording from living tissue.

THE BLOODSTREAM: River of Life—Isaac Asimov—*Collier*, 221 p., paper, 95¢. Reprint (1959).

CREATIVE ANALYSIS (The Graded Exercises in Analysis)—Albert Upton and Richard W. Samson—*Whittier College Press*, 212 p., illus., paper, \$6. A problem-solving book designed to deepen the understanding of words as tools of thought, on secondary school level.

ELECTROPLATING ENGINEERING HANDBOOK—A. Kenneth Graham and H. L. Pinkerton, Eds.—*Reinhold*, 2nd ed., 774 p., illus., \$18.50. Comprehensive reference work, enlarged and revised.

ELEMENTS OF MODERN PHYSICS—Alfred T. Goble and David K. Baker—*Ronald Press*, 498 p., illus., \$8.75. Designed for students with background of elementary physics and calculus.

EXCEPTIONAL CHILDREN: Residential Treatment of Emotionally Disturbed Boys at Shotton Hall—F. G. Lennhoff, foreword by Edward Glover—*Taplinger*, 201 p., \$4.95. Report describes development and treatment of maladjustment in an English community school for boys, aged 10 to 16, of good intelligence and potential ability.

EXPERIMENTATION: An Introduction to Measurement Theory and Experiment Design—D. C. Baird—*Prentice-Hall*, 198 p., \$6. Intended for use in introductory physics laboratory course for scientists and engineers.

THE FIRST BOOK OF ANCIENT MESOPOTAMIA AND PERSIA—Charles Alexander Robinson, Jr.—*Watts, F.*, 61 p., photographs, maps, \$1.95. Introduces boys and girls to the archaeology of the Near East.

THE FISHES—Url Lanham—*Columbia Univ. Press*, 150 p., photographs, \$5. Designed to give the general reader an understanding of the evolutionary background and structure of this group of animals.

FOUR DREAMS OF MAN: Peace, Food, Freedom, Human Dignity—John Furbay—*Columbia Records (Lecture Recordings)*, 33 $\frac{1}{3}$ rpm long-playing record, \$5.35. Alive speech recording, dramatizing the story of the shape of things to come.

GIANT BRAINS of Machines That Think—Edmund Callis Berkeley—*Science Editions*, 294 p., \$1.65. Reprint (1949).

GOOD TIMES WITH MAPS—Irene Estep—*Melmont Pubs.*, 31 p., illus. by Robert Smith, \$2.50. Introduces boys and girls to intelligent map reading.

GREAT SCIENCE FICTION BY SCIENTISTS—Gross

Conklin, Ed.—*Collier*, 313 p., paper, 95¢. Original collection of imaginative tales.

THE HEATHENS: Primitive Man and His Religions—William Howells—*Doubleday*, 302 p., photographs, map, paper, \$1.45. Reprint (1948).

HEREDITY AND YOUR LIFE—A. M. Winchester—*Dover*, 2nd ed., 333 p., photographs, paper, \$1.45. Reprint (1960).

HOW ANIMALS DEVELOP—C. H. Waddington—*Harper*, 136 p., illus., paper, \$1.25. Reprint (1935), with new chapter on the activity of genes in development.

HOW TO SOLVE PROBLEMS IN ANALYTIC GEOMETRY AND CALCULUS, Vol. 1—Trevor Evans and Bevan K. Youse—*Prentice-Hall*, 180 p., paper, \$2.95. Simple explanations and step-by-step solutions.

THE HUMAN BRAIN—John Pfeiffer—*Pyramid*, 256 p., paper, 75¢. Reprint (1955).

IMAGE OF AN ISLAND: A Portrait of Ceylon—Reg van Cuylenburg—*Orion Press*, unpagged, 200 photographs, \$12.50. Village life, art, wildlife, customs and landscapes, seen through the eyes of a Ceylonese photographer.

INTERNATIONAL REVIEW OF CYTOLOGY, Vol. 12—G. H. Bourne and J. F. Danielli, Eds.—*Academic Press*, 424 p., illus., \$15. Among other subjects, treats chromosomal evolution in cell populations, and physiology of fertilization in fish eggs.

INTRODUCTION TO IMMUNOCHEMICAL SPECIFICITY—William C. Boyd—*Interscience*, 158 p., illus., \$6. Discusses, in non-specialist terms, modern advances in the specificity of antibodies and antigens.

INTRODUCTION TO PROBABILITY AND MATHEMATICAL STATISTICS—Z. W. Birnbaum—*Harper*, 325 p., \$6.50. Text on fundamentals of calculus of probabilities and procedures of statistical inference.

INTRODUCTION TO PROBABILITY AND STATISTICS—Henry L. Alder and Edward B. Roessler—*Freeman*, 2nd ed., 289 p., diagrams, \$5.50. New edition includes material on F-distribution and analysis of variance.

INTRODUCTORY COLLEGE MATHEMATICS—Chester George Jaeger and Harold Maile Bacon—*Harper*, 2nd ed., 423 p., diagrams, \$6.50. One-year course for students with strong high school preparation.

THE LAND OF LITTLE RAIN—Mary Austin—*Doubleday*, 171 p., illus. by E. Boyd Smith, paper, 95¢. Reprint (1903).

LANGUAGE: A Science of Human Behavior—Harry R. Warfel—*Allen, H.*, 188 p., \$3.95. Concerned with the coded nature of language.

LIVING EARTH—Peter Farb—*Pyramid*, 160 p., illus. by Louise Katz, photographs by Roman Vishniac, paper, 65¢. Reprint (1959).

McGraw-Hill Yearbook of Science and Technology: Comprehensive Coverage of the Important Events of 1961—Compiled by the Staff of the McGraw-Hill Encyclopedia of Science and Technology, William H. Crouse, Ed.-in-Chief—*McGraw*, 558 p., illus., \$17.50. Feature articles by leading scientists and annual review of scientific developments. Indexed.

MODERN THEORIES OF DEVELOPMENT: An Introduction to Theoretical Biology—Ludwig von Bertalanffy, transl. from German by J. H.

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Woodger—*Harper*, 200 p., paper, \$1.50. Reprint (1933).

THE NATURE OF ATOMS AND MOLECULES: A General Chemistry—Ewing C. Scott and Frank A. Kanda—*Harper*, 765 p., illus., \$8. Textbook emphasizing chemical correlations, intended for college students who have serious interest in chemistry.

THE NEW SCIENCE OF SKIN AND SCUBA DIVING—Conference for National Co-operation in Aquatics, Alex A. Maleski, Chmn.—*Assn. Press*, rev. ed., 208 p., illus. by Andre Ecuyer, \$3.95; paper, \$2.95. Replaces original (1957) official text.

NINE PLANETS—Alan E. Nourse—*Pyramid*, 288 p., illus. by Mel Hunter, paper, 75¢. Reprint (1960).

NUCLEAR SUBMARINE SKIPPERS AND WHAT THEY DO—Commanders George P. Steele and Herbert J. Gimpel, USN—*Watts, F.*, 140 p., \$3.95. Includes glossary and index.

1,000 ANSWERS TO QUESTIONS ABOUT PHOTOGRAPHY—Robert L. McIntyre, Ed.—*Grosset & Dunlap*, 248 p., photographs, paper, \$1.95. Reprint (1959), formerly "1,000 Photo Questions Answered by Experts."

1001 QUESTIONS ANSWERED ABOUT BIRDS—Allan D. and Helen G. Cruickshank—*Grosset & Dunlap*, 291 p., photographs by author, illus. by James Macdonald, paper, \$1.75. Reprint (1958).

PRINCIPLES OF PHYSICS—Earnest S. Greene—*Prenice-Hall*, 806 p., diagrams, \$9.75. Text intended for physics course at the liberal arts and premedical level.

THE REAL NUMBER SYSTEM IN AN ALGEBRAIC SETTING—J. B. Roberts—*Freeman*, 145 p., diagrams, \$3.50; paper, \$1.75. Textbook intended to acquaint student with the basic facts of an important mathematical system, also of cultural value to nonscience students.

ROBERT BOYLE: Founder of Modern Chemistry—Harry Sootin—*Watts, F.*, 133 p., illus. by Gustav Schrotter, \$1.95. Biography for young people.

SCIENTISTS: Their Psychological World—Bernice T. Eiduson, foreword by Harrison Brown—*Basic Bks*, 299 p., \$6.50. An examination of the nature of technically trained people, dealing with parental backgrounds, interests, aptitudes, personality, intelligence and other motivating factors of 40 contemporary American research scientists.

SEMIMICRO LABORATORY EXERCISES IN GENERAL CHEMISTRY—J. Austin Burrows, Paul Arthur and Otto M. Smith—*Macmillan*, 3rd ed., 306 p., illus., paper, \$4. Includes more quantitative experiments and experiments introducing modern techniques.

THE SMALL GROUP: An Analysis of Research Concepts and Operations—Robert T. Golembiewski—*Univ. of Chicago Press*, 303 p., \$6. Reviews research in small-group analysis, and points out its useful relevance to students of behavior.

SOUTH AMERICA A TO Z—Robert S. Kane—*Doubleday*, 370 p., photographs, maps, \$4.95. A practical guide to 14 Latin American countries, for the tourist who also wants to know something about their historical and political background.

SPACE BIOLOGY: The Human Factors in Space Flight—James Stephen Hanrahan and David Bushnell—*Science Editions*, 285 p., photographs, paper, \$1.95. Reprint (1960).

THE STARS: A New Way to See Them—H. A. Rey—*Houghton*, rev. ed., 160 p., illus., \$6. Guide to the constellations for beginners. Jacket unfolds into 22x26-inch map.

THEORY OF THE TRANSMISSION AND PROCESSING OF INFORMATION—A. G. Vitushkin, transl. from Russian by Ruth Feinstein—*Pergamon*,

206 p., \$15. Research monograph, attempts to define mathematically the construction of tables for functions, a concept important in the automatization of programming.

TIME'S ARROW AND EVOLUTION—Harold F. Blum—*Harper*, 220 p., illus., paper, \$1.65. Reprint of 2nd ed. (1955).

UNIFIED ORGANIC CHEMISTRY—Charles A. MacKenzie—*Harper*, 586 p., illus., \$8.50. Text combines aliphatic and aromatic compounds in an order which emphasizes functional groups.

• Science News Letter, 81:252 April 21, 1962

Live Cells Frozen Alive

(Continued from page 246)

lated ox blood remained alive when cooled at a rate of about 200 degrees per second by immersion in liquid nitrogen and then rewarmed at about the same rate.

In 1950, Dr. A. U. Smith of the Institute for Medical Research in England discovered that a 15% glycerol solution protected rabbit and human red blood cells from death during freezing at temperatures of more than 100 degrees below zero Fahrenheit.

The aim of current research, Dr. Harold Meryman of the Naval Medical Research Institute, Naval Medical Center, Bethesda, Md., told SCIENCE NEWS, is to find an additive to protect frozen blood that does not have to be removed before the blood can be used for transfusion. Transfusions could then be started within 90 seconds instead of the more than an hour now needed to prepare the blood.

He said that Dr. Audrey Smith and her co-workers at the Mill Hill Laboratory near London were studying the freezing of whole organs and whole animals.

Dr. Meryman said the current belief was that the stage for damage from cold was set during the freezing process, but that the final blow making the damage irreversible occurred during thawing.

• Science News Letter, 81:246 April 21, 1962

FISHERIES

No Bones About It, Machine Does the Job

► DON'T LIKE FISH because of the bones? How about a machine that debones them?

The U.S. Bureau of Commercial Fisheries Review, 24:15, 1962, claims it is now possible to design and build a machine that will detect and reject those harmful fish bones.

Research by the Bureau has been carried on since 1954 to find such a machine. When the results were in, the scientists report that there are no bones about it, the machine really works.

Fish are relayed in front of an X-ray unit which detects the bones, even when the fish are frozen. An electronic flash forms an image of the fish's interior on a fluoroscopic screen. The bones cause a change in energy levels on the screen which can be picked up and relayed to a photoelectric unit. This unit can control a rejecting device which de-ribs the fish.

The device works best on thin slices but Bureau scientists are confident that it can be improved for commercial use.

• Science News Letter, 81:253 April 21, 1962

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