

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 AMIDON ELEMENTARY SCHOOLS: A Successful Demonstration in Basic Education—Carl F. Hansen—*Prentice-Hall*, 252 p., \$5.95. Detailed report on the experience gained with operating a "curriculum-centered," experimental school, written by its originator.

ANALOGUE COMPUTATION: Techniques and Components—R. W. Williams—*Academic Press*, 271 p., \$9.50. Introduction to the electronic and electromechanical analogue field, with emphasis on components and techniques.

ARCHAEOLOGY OF EASTER ISLAND—Thor Heyerdahl and Edwin N. Ferdon, Jr., Eds.—*Rand McNally*, 559 p., 9 x 11 inches, illus., maps, 96 plates, \$25. Detailed reports of the Norwegian archaeological expedition to Easter Island and the East Pacific, on the ceremonial and dwelling sites and stone statues, with general introduction and conclusions by the editors.

AVIATION AND SPACE MEDICINE: Man conquers the Vertical Frontier—Martin and Grace Caidin—*Dutton*, 215 p., photographs, \$3.75. About the atmosphere, pressures, g-forces, and how aerospace medicine and test pilots work together to keep man functioning in the new environment.

BALL LIGHTNING: A collection of Soviet Research in English Translation, with Annotated Bibliography—Donald J. Ritchie, Ed.—*Consultants*, 70 p., illus., paper, \$12.50. Seven Soviet scientific papers on fundamental research.

BIOLOGICAL WASTE TREATMENT—W. W. Eckfelder, Jr., and D. J. O'Connor—*Pergamon*, 299 p., illus., \$10. Deals with the physical and biological principles of waste treatment and their engineering application to stream pollution analysis and waste treatment plant design.

BULLETIN OF THE PHILOSOPHICAL SOCIETY OF WASHINGTON, Vol. 16, No. 1—Francois N. Frenkiel, Ed.—*Philosophical Soc. of Wash., D. C.*, 199 p., illus., paper, \$2. With this issue publication of the **BULLETIN** has been resumed after 52 years; it contains outstanding papers recently read before the Society.

CANCER: The Nature of the Problem—R. J. C. Harris—*Penguin Bks*, 127 p., illus., paper, 95¢. Research scientist's simple explanation of

the known facts and current theories of the nature of cancer.

CAREERS IN ASTRONAUTICS AND ROCKETRY: Training and Opportunities in the Space and Missile Fields—Carsbie C. Adams and Wernher von Braun, with Frederick I. Ordway, III—*McGraw*, 252 p., illus., \$6.95. Experts discuss the evolution of astronautics, its relation to the natural sciences, engineering disciplines, and the preparation for careers in industry, universities and government.

DICTIONARY OF GEOLOGICAL TERMS—Prepared under the direction of the American Geological Institute—*Doubleday*, rev. ed., 545 p., paper, \$1.95. Revised and abridged edition of the *Glossary of Geology and Related Sciences*, containing 7,500 of the more commonly used terms. For students, science teachers and hobbyists.

ENERGY AND POWER: How Man Uses Animals, Wind, Water, Heat, Electricity, Chemistry and Atoms to Help Him in His Daily Living—L. Sprague de Camp—*Golden Press*, 54 p., illus. by Weimer Pursell and Fred Eng, 69¢. Colorful and informative, for the young.

ENGINEERING GRAPHICS—Carl Lars Svensen and William Ezra Street—*Van Nostrand*, 739 p., illus., \$9.75. Text emphasizes integrated approach to the study of engineering drawing and descriptive geometry.

EXPERIMENTAL FOUNDATIONS OF CLINICAL PSYCHOLOGY—Arthur J. Bachrach, Ed.—*Basic Bks*, 641 p., \$10. Authoritative contributions ranging over every aspect of the field, from history and theory, learning and communication to psychophysiology, diagnosis and treatment.

THE FIRST NINE MONTHS OF LIFE—Geraldine Lux Flanagan—*Simon & Schuster*, 95 p., illus., photographs, \$3.95. The story, in words and pictures, of human development before birth, for the general reader.

FORCES AND FIELDS: The Concept of Action at a Distance in the History of Physics—Mary B. Hesse—*Philosophical Lib.*, 318 p., \$10. A historical study of the various theories of continuous action and action at a distance, traced from the primitive analogies of Greek science to the classical field theory and the relativistic quantum field theory of the 20th century.

FUNDAMENTALS OF PSYCHOLOGY—Frank A. Geldard—*Wiley*, 437 p., illus., \$7.50. An introductory textbook.

GENERAL BIOLOGY: The Science of Biology—William C. Beaver—*Mosby*, 6th ed., illus., \$8. Text includes major revisions and additions.

A GUIDE TO STUDY ABROAD, 1962-1963 Edition: University, Summer School, Tour and Work-and-Study Programs—John A. Garrity and Walter Adams, introd. by Lyndon B. Johnson—*Channel Press*, 288 p., \$5.95; paper, \$2.95. Comprehensive handbook for students and teachers, discussing the various programs and tours available.

HEREDITARY GENIUS: An Inquiry into Its Laws and Consequences—Francis Galton, introd. by C. D. Darlington—*World Pub. Co.*, 446 p., paper, \$1.45. Reprint of pioneer work

(1869) on the genetic and environmental bases of man's intellectual evolution.

A HISTORY OF AMERICAN EDUCATION—H. G. Good—*Macmillan*, 2nd ed., 610 p., illus., \$6.75. Comprehensive chronological survey of the philosophical background and developing institutions of American education, updated to include the changes since 1957.

HOW TO MEET THE WEST'S NEEDS FOR WATER AND POWER—Michael W. Straus—*Public Affairs Institute*, 72 p., maps, paper, \$1. Former U.S. Reclamation Commissioner's discussion of the problem, with summaries of the United Western Investigations and the Task Force Report of 1961 on Pacific Northwest, Pacific Southwest Extra High Voltage Common Carrier Interconnections.

HYPERSONIC FLOW RESEARCH—Frederick R. Riddell, Ed.—*Academic Press*, 758 p., illus., \$10.50. Vol. 7 of *Progress in Astronautics and Rocketry*, covers low Reynolds number effects, chemical kinetics effects, inviscid flow calculations and a survey of current experimental techniques.

THE INSECT WORLD: Ants, Bees, Wasps, Butterflies and Many Other Insects and Their Relatives, Including Spiders and Centipedes—Norman M. Lobsenz—*Golden Press*, 54 p., illus., 69¢. Colorful book of factual information for the young.

AN INTRODUCTION TO THE PHYSICS OF VIBRATIONS AND WAVES—Norman Feather—*Edinburgh Univ. Press (Aldine Pub. Co.)*, 330 p., \$6. Develops the classical concepts of waves, mechanical vibrations, sound and light, addressing itself to the beginning specialist.

INTRODUCTION TO THERMODYNAMICS OF IRREVERSIBLE PROCESSES—I. Prigogine—*Interscience*, 2nd rev. ed., 119 p., \$5. Short account of recent developments in the field.

INTRODUCTORY ORGANIC QUANTUM CHEMISTRY—Georg Karagounis, transl. from German and ed. by F. C. Nachod—*Academic Press*, 204 p., diagrams, \$6.50. Introduces organic chemists to the concepts of quantum chemistry, explaining the mathematical character of the subject.

JETS—Charles Spain Verral—*Prentice-Hall*, 70 p., illus. by Lewis Zacks, \$2.95. For young boys, includes glossary of technical terms.

LABORATORY STUDIES IN BIOLOGY—Addison E. Lee and Osmond P. Breland—*Harper*, 2nd ed., 307 p., illus., paper, \$4.75. Thoroughly revised manual, with expanded section on vertebrates.

MEASURES OF THE MOVEMENTS AND POPULATION DENSITIES OF SMALL RODENTS—Daniel H. Brant—*Univ. of Calif. Press*, 70 p., 5 plates, paper, \$1.50. Based on the capture of more than 3,000 rodents near Berkeley, Calif., by grid live trapping over a period of 15 months.

THE METAL PLUTONIUM—A. S. Coffinberry and W. N. Miner—*Univ. of Chicago Press*, 446 p., illus., \$10. Gives early history and evolution of the metal's extractive and physical metallurgy, and deals with the current state of plutonium fuels and its alloys.

THE MOLE CONCEPT IN CHEMISTRY—William F. Kieffer—*Reinhold*, 118 p., paper, \$1.95. Written for students in general chemistry.

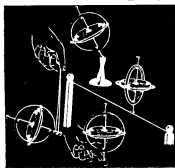
THE MOON: A Russian View—A. V. Markov, Ed., transl. from Russian, ed. by Rev. Francis J. Heyden, S. J.—*Univ. of Chicago Press*, 391 p., illus., \$8. A collection of monographs presenting data on the motion, structure and physical nature of the moon.

NARCOTICS AND CELL NARCOSIS IN CHEMOTHERAPY—V. P. Paribok, transl. from Russian—*Consultants*, 52 p., paper, \$12.50. Investigations of the chemotherapeutic effect of narcotics as a manifestation of cellular narcosis in chemotherapy.

OBSERVATIONS AND EXPERIMENTS IN NATURAL HISTORY—Alan Dale, adapted for American readers by James Donald Witherspoon and Rebecca Hutto Witherspoon—*Doubleday*, 148

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p., illus., photographs, paper, 95¢. Published in cooperation with the American Museum of Natural History.

ON THE EXTERNAL CHARACTERS OF MINERALS—A. G. Werner, transl. from German by Albert V. Carozzi—*Univ. of Ill. Press*, 118 p., \$4.50. New and critically annotated translation of the first "modern" textbook on descriptive mineralogy published in 1774.

THE ORIGIN OF RADAR—Robert Morris Page—*Doubleday*, 197 p., illus., photographs, paper, 95¢. A readable text on the discovery and development of radar to its present applications in navigation, weather forecasting, astronomy, automation and other technical fields.

PESTICIDE HANDBOOK, 1962—Donald E. H. Frear, Ed.—*College Science Pubs.*, 14th ed., 303 p., \$3.50; paper, \$2.50. Contains 9,444 commercial pesticide products.

PHYSICS AND ASTRONOMY OF THE MOON—Zdenek Kopal, Ed.—*Academic Press*, 538 p., illus., \$16.50. Authoritative discussions of the dynamics of the moon, its interaction with the earth, analysis of the light of the moon, lunar topography and charting, interpretation of lunar craters, radio observations, and origin of the moon.

PROGRAMS, '62: A Guide to Programed Instruction Materials Available to Educators by September 1962—Center for Programed Instruction—*GPO*, 383 p., illus., paper, \$1.50. Annotated bibliography of 122 ready programs with sample pages and statistical summary.

PROGRESS IN POLAROGRAPHY, Vol. II—P. Zuman, Ed., with I. M. Kolthoff—*Interscience*, 807 p., illus., \$15. International survey of advances in the field of polarography and its applications in industry and medicine.

PUFFINS—R. M. Lockley—*Doubleday*, 222 p., photographs, paper, \$1.25. A study of the habits, behavior and social life of the gregarious North Atlantic "seaparrrot".

RADIOISOTOPES IN WORLD INDUSTRY: Abstracts of Selected Foreign Literature—*US AEC (OTS)*, 129 p., paper, \$2.50. Contains 587 abstracts of selected foreign literature dealing with worldwide applications of radioisotopes.

SCIENCE AND SALVATION: Scientific Appraisal of Religion's Central Theme—Robert S. de Ropp—*St. Martins*, 308 p., \$5. Examines mankind's evolutionary search for spiritual guidance and discusses the teachings of the great religious leaders.

SUPERCONDUCTIVE DEVICES—John W. Bremer—*McGraw*, 184 p., illus., \$8. Covers recent advances in superconductivity, cryotrons, cryotron circuits, computer memory and other devices.

VALENCE—C. A. Coulson—*Oxford*, 2nd ed., 404 p., diagrams, \$6. Contains undated account of d-electrons, theory of inorganic chemistry, and ligand-field theory and complex ions.

VOLCANOES IN ACTION: Science and Legend—Lynn and Gray Poole—*McGraw*, 79 p., illus. by Gustav Schrotter, photographs, \$3. For boys and girls.

THE WAVE MECHANICS OF ELECTRONS IN METALS—Stanley Raimes—*Interscience (Wiley)*, 367 p., \$13. Treatment is mathematical, with emphasis on the interaction of electrons and the calculation of energies.

THE WONDER THAT IS YOU—Charles Gramet—*Abelard-Schuman*, 62 p., illus. by William Burnard, \$2.95. Science teacher explains to children the marvellous machines their bodies are.

WONDERS OF ANIMAL DISGUISES—Sigmund A. Lavine—*Dodd*, 63 p., illus. by Margaret Cosgrove, \$3. Informative book about mimicry for young people.

YOUR CHILD FROM 1 TO 6—*Childrens Bureau (GPO)*, 8th rev. ed., 97 p., illus., paper, 20¢. Popular pamphlet for parents, brought up to date.

• Science News Letter, 81:348 June 2, 1962

ZOOLOGY

Animal Believed Extinct Found Alive in Ocean

► AN EXTINCT MARINE animal has been found alive, providing a living link between starfishes and sea-lilies, according to a leading expert on oceanic animals.

Detective work on a 100-year-old laboratory specimen from the little-known group of somasteroids, believed extinct for 400,000,000 years, resulted in the discovery. Although relatively abundant in ancient seas, they lacked solid outside skeletons and were poorly preserved.

A century ago an English scientist found some starfish-like animals living in the shallow coastal waters of Central America. He thought they were a newer type of starfish.

Dr. H. Barraclough Fell, professor of zoology at Victoria University of Wellington, New Zealand, after studying some of these animals, showed that they were actually descendants of the somasteroids, related to both the starfishes and crinoids, the stalked sea-lilies.

Until now, these two groups of ocean animals have been separated, with no evidence that they were related. Dr. Fell reported in *Science*, 136:633, 1962. The theories have been based on the tiny swimming larval stages of the animals, not on the structures or remains of adults.

Dr. Fell found that the remains of the arms were clearly related to many starfishes. He dissected the skeleton of the first specimen found, which has been kept in the British Museum in London.

The position and pattern of parts of the arm and other structures were very similar to the fossil somasteroids.

A mistake in classification has clearly been made, he pointed out. The somasteroid descended from crinoids, not from the starfish, and are probably the ancestors of starfish. They are not extinct, as has been thought, for somasteroids are still being dredged up from the shallow Pacific waters.

These four- or five-inch, star-shaped animals are violet colored in life, almost flat and resemble a cardboard cut-out. They offer a challenge to fossil experts since they may now be studied while alive and intact.

• Science News Letter, 81:349 June 2, 1962

Questions

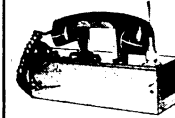
MEDICINE—How many times a second does man's body vibrate throughout his life? p. 345.

OTOLOGY—What types of injury to the ear result from tobacco smoking? p. 347.

ZOOLOGY—What animal is believed to be the ancestor of the starfish? p. 349.

Photographs: Cover, Cenco Instruments Corporation; p. 338, National Aeronautics and Space Administration; p. 339, Minneapolis-Honeywell Regulator Company; p. 341, Westinghouse Electric Corporation; p. 343, Bell Telephone Laboratories; p. 346, National Science Foundation; p. 350 (top) Spoodle; p. 350 (bottom), E. P. Haddon.

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