

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.

ADVANCES IN SPACE SCIENCE, Vol. 2—Fredrick I. Ordway, III, Ed.—*Academic*, 450 p., illus., \$13. Covers the areas of experimental physics, using space vehicles, tracking of artificial satellites and lunar probes, materials in space, plasma propulsion devices and electrostatic propulsion systems.

AIR POLLUTION MANUAL, Part I: Evaluation—George D. Clayton, Chmn.—*Am. Industrial Hygiene Assn.*, 194 p., illus., \$8.50. Represents more than four years of work by a group of scientists competent in interpreting the effects of air pollution on health, vegetation and farm animals, methods of stack sampling, chemical procedures, odors, radioactivity and meteorological factors.

ANIMAL SPECIES AND THEIR EVOLUTION—A. J. Cain—*Harper*, 190 p., illus., paper, \$1.35. First published in 1954, book is intended to be a survey of the nature of species, their origin and their evolutionary importance.

AVIATION IN THE MODERN WORLD: The Dramatic Impact upon Our Lives of Aircraft, Missiles and Space Vehicles—James V. Bernardo—*Dutton*, 352 p., illus., \$5.95. Explores the role of aviation in commerce, agriculture, meteorology and public welfare; reviews the U. S. airport system, national defense and space exploration; ends with short historical survey.

A COURSE IN RADIO FUNDAMENTALS: Study Assignments, Experiments and Examination Questions—George Grammer—*Am. Radio Relay League*, 4th ed., 103 p., illus., paper, \$1. For radio amateurs; outlines experiments and

HEAR GERMAN POETRY!

Lotte Lenya, famed star of European and American stage, reads great poetry of Goethe, Rilke, Heine, Schiller, 30 others, from Minnesingers to present. "Invitation to German Poetry," 50-minute (12", 33 1/2") hi-fi recording. 165-page illustrated book, full record text, English translation, \$4.95. Money-back guarantee. Dept. SNL. DOVER, 180 Varick St., N. Y. 14, N. Y.

RAPID CALCULATIONS

by A. H. Russell

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- Give the cube root of 42508549 . . .
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describes the construction of experimental gear.

DOCUMENTATION, INDEXING, AND RETRIEVAL OF SCIENTIFIC INFORMATION: A Study of Federal and Non-Federal Science Information Processing and Retrieval Programs—U. S. Senate Committee on Government Operations—*Govt. Printing Office*, 283 p., paper, 70¢.

EINSTEIN: A Pictorial Biography—William Cahn—*Citadel Press*, 127 p., illus., paper, \$1.25. First paperback reprint of 1955 edition of copiously illustrated short biography highlighting the great physicist's life.

EXPERIMENTS IN GENERAL CHEMISTRY—Russell S. Drago and Theodore L. Brown—*Allyn & Bacon*, 236 p., illus., paper, \$3.95. Laboratory manual with experiments designed to encourage the student to do some preparing prior to the laboratory period, with questions requiring the student to *think* about what he has done in performing the work.

FIRE IN THE VALLEY—Jack Hambleton—*Longmans*, 156 p., photographs, \$3.75. Tells authentic story of how a forest fire begins, how it travels, the damage it causes, based on fire in Ontario, Canada, which covered nearly 12,000 acres in a single afternoon.

FISHES OF THE DEVONIAN HOLLAND QUARRY SHALE OF OHIO—Robert H. Denison—*Chicago Nat. Hist. Mus.*, 58 p., illus., paper, \$1.50. Describes collection of fossil vertebrates from a Devonian formation in northwestern Ohio.

FISHES OF THE MARSHALL AND MARIANAS ISLANDS, Vol. 2: Families from Mullidae through Stromateidae—Leonard P. Schultz and others—*Smithsonian Inst. (GPO)*, U. S. National Museum Bull. 202, 438 p., illus., paper, \$2.25.

GEOLOGIC EVOLUTION OF EUROPE—Roland Brinkmann, transl. from German by John E. Sanders—*Hafner Pub. Co.*, 161 p., illus., 18 correlation charts, \$8.50. Condensed version of second volume of 8th edition of "Abriss der Geologie," to give the English-speaking geologist an introduction to the geology of Europe.

A GUIDE TO THE STARS—Patrick Moore—*Norton*, 222 p., photographs, \$4.95. Written for the layman, the book is a readable account of the fundamentals of stellar astronomy; it tells about double stars, variable and temporary stars, clusters, nebulae, galaxies and radio waves from space.

HISTOLOGICAL TECHNIQUES FOR ELECTRON MICROSCOPY—Daniel C. Pease—*Academic*, 274 p., illus., \$7.50. Intended as a practical guidebook for those who would study cells or tissues with the electron microscope, discusses organization of laboratory, tissue exposure, fixation, embedding, sectioning, section mounting, microscopy photography and alternate methods of specimen preparation.

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FISHES FROM THE UNITED STATES AND CANADA—Reeve M. Bailey, Chmn.—*Am. Fisheries Society*, 2nd ed., 102 p., \$2; paper \$1. Revised and enlarged list of accepted common names, occurrence and scientific names, fully indexed.

MAN'S CONTRACTING WORLD IN AN EXPANDING UNIVERSE—Ben H. Bagdikian, Ed.—*Brown University*, 224 p., photographs, \$4. Proceedings of the Brown University Convocation held in Providence, R. I., October 1959. Scientists and other thoughtful men discuss the physical universe, the social environment and individual man.

MECHANISMS IN RADIOBIOLOGY, Vol. II: Multicellular Organisms—Maurice Errera and Arne Forsberg, Eds.—*Academic*, 395 p., illus., \$13. Discussion of radiation effects on embryonic and adult organisms, chiefly in mammals. Special chapters on immunological processes in irradiated organisms, on the mechanisms of protective agents and on the recovery of irradiated mammals.

THE MINNESOTA COMMUNITY: Country and Town in Transition—Lowry Nelson—*Univ. of Minn. Press*, 175 p., \$4.25. A study of social change among Minnesota's population, emphasizing the process of rural-urban integration, considers many aspects not ordinarily included in sociological studies.

MY LIFE AND TIMES AS A PHYSICIST—I. I. Rabi, foreword by Joseph B. Platt—*Claremont College*, 55 p., \$2.75. Two lectures by the Nobelist, dealing with the part that an understanding of science must play in wise comprehension and control of human affairs.

101 SCIENCE EXPERIMENTS—Illa Podendorf—*Childrens Press*, 157 p., illus. by Robert Borja, \$4.50. Large-format, colorful children's book of experiments with simple materials found in the home.

THE PALEOCENE PANTODONTA—Elwyn L. Simons—*Am. Philosophical Soc.*, Transactions, Vol. 50, Part 6, 99 p., illus., paper, \$2.50. Presents taxonomic review of the Pantodonta with description of new genera and species, discusses their skeletal anatomy, ecology and relationship to other orders of mammals.

PARAPLEGIA: A Head, a Heart, and Two Big Wheels—Jules Saltman—*Public Affairs Committee*, Pamphlet No. 300, 28 p., illus., paper, 25¢ direct to publisher, 22 E. 38th Street, New York 16, N. Y.

RECENT PROGRESS IN HORMONE RESEARCH: Proceedings of the Laurentian Hormone Conference, 1959—Gregory Pincus, Ed.—*Academic*, 608 p., illus., \$14. Six papers present data on the mechanisms of hormone action, others treat peptide hormones, thyroid hormones, and hormones and metabolism.

REPTILES: Life History, Evolution and Structure—Angus d'A. Bellairs—*Harper*, 192 p., paper, \$1.35. Aims at providing a synthesis of the different sorts of knowledge available on reptiles, for the student, naturalist and general reader.

SEMINAR ON TRANSFORMATION GROUPS—Armand Borel and others—*Princeton Univ. Press*, 245 p., paper, \$4.50. Transformation groups here are discussed mainly from the point of view of algebraic topology.

SIXTY MILLION YEARS OF HORSES—Lois and Louis Darling—*Morrow*, 64 p., illus. by authors, \$2.50. Describes the physical characteristics of the horse, its evolution from tiny ehippous, and the history of the horse's relationship to man.

THE SKELETON KEY OF MATHEMATICS: A Simple Account of Complex Algebraic Theories—D. E. Littlewood—*Harper*, 138 p., paper, \$1.25. Reprint of book first published in 1949, giving descriptive account of the theories for the general intelligent reader.

TECHNICAL DRAWING PROBLEMS, Series 3—

Henry Cecil Spencer and Ivan Leroy Hill—*Macmillan*, 86 p., illus., paper, \$4.50. Compact workbook, covering basic fundamentals, presenting problems that are thought-provoking rather than requiring much routine drafting.

THE TRUE BOOK OF ANIMAL HOMES—Illa Podendorf—*Childrens Press*, 48 p., illus. by John Hawkinson, \$2. Shows youngest readers where different animals live.

UNDER THE DEEP OCEANS: Twentieth Century Voyages of Discovery—T. F. Gaskell—*Norton*, 240 p., illus., \$3.95. Chief scientist of British oceanographic expedition gives non-technical account of seismic prospecting, the Moho, deep sounding and deep drilling, seabed sediments and wandering continents.

THE WEATHER OF OREGON—Fred W. Decker—*Oregon State College*, 40 p., illus., paper, 50¢ direct to publisher, Corvallis, Ore. Outlines some of the interesting facts about the causes of Oregon's weather.

• Science News Letter, 78:108 August 13, 1960

MEDICINE

Germans to Get Multiple Shots of Vaccine

► BEGINNING this fall, West Germans will begin to receive multiple shots of polio, tetanus, diphtheria and whooping cough vaccine, Hans von Behring of Behringwerke AG, Marburg, West Germany, said at the Fifth International Poliomyelitis Conference.

The multiple shots are expected to give immunity in one to two shots, Mr. von Behring said. He said that only 25% of children between three and six years of age are vaccinated against polio, and only six to seven percent of the West German population was immunized during the last two years.

Mr. von Behring said the West Germans are not as eager to take the vaccine shots as persons in other countries. The West Germans have to pay for the shots whereas many other European populations receive the vaccine free.

Mr. von Behring's father, Emil von Behring, discovered the passive serum treatment of diphtheria for which he received a Nobel Prize in 1901.

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MEDICINE

Polio and Tetanus No Threat to Newborn Baby

► POLIO and tetanus are not diseases dangerous to a newborn infant as a rule, Dr. Pierre L. Lepine of the Pasteur Institute in Paris told the polio conference.

Dr. Lepine said that diphtheria and whooping cough are much more dangerous for the newborn. He said that protection of the infant could be achieved by giving one shot at birth for diphtheria and whooping cough; smallpox vaccination at the age of six months; after that tetanus and polio; and later the booster shots.

He said that the Pasteur Institute has experimented with multiple vaccine shots for some time, and that polio vaccine as well as vaccine for tetanus, diphtheria and whooping cough has been found to stay usable when mixed.

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PSYCHOLOGY

Test Predicts Success

► INK BLOTS, in the hands of a psychologist, can be used to predict whether a man will be a success or a failure as a business executive, Dr. Zygmunt A. Piotrowski of the Jefferson Medical College of Philadelphia indicated to the International Congress of Psychology in Bonn, Germany.

The blots can also help predict whether a man will be a criminal.

Dr. Piotrowski used the famous ink blot test developed by the Swiss psychiatrist Hermann Rorschach in his predictions. The extent to which a person is inclined to look at the pattern of a blot as a whole (his W score) rather than to pay any attention to small parts is significant for predicting whether he will be successful as a high-ranking executive.

The average W score of men who reach the vice presidential level and then fail is a little over 10, Dr. Piotrowski found in a study of 50 top ranking executives. This score of 10 is about the average W score to be expected from a group of adults with superior intelligence.

Highly successful executives—those who kept advancing in power and achievements—averaged nearly 18 in W score or nearly twice as high as the high executive who failed at the top level.

Perhaps the most important clue to potential behavior is what the psychiatrist calls a CR (color response). The individual makes a color response when he pays attention to the color that appears on some of the Rorschach cards.

He may, for example, point to a squiggle in one corner of the card and say, "That looks like a caterpillar." If pressed for his reason why, he may say, "Because it is green." That is a color response.

Color responses measure emotions and the desire to associate with or separate from others. If an individual produces no CR he is assumed to be emotionally flat or indifferent.

Color responses can be positive or negative, indicating attraction toward others or repulsion. If a person sees such wholesome objects as landscapes, flowers, fruit, warmth giving (controlled fire), he is giving positive color responses, an indication that he is drawn toward others.

If the color on the blots makes a person think of blood, anatomical slides, wounds, burning houses, an explosion, etc., he is giving negative CR that (unless he is a surgeon or medical student) predicts he will withdraw from others.

Dr. Piotrowski described another test which might be used to predict behavior, especially anti-social or aggressive delinquent

behavior. The Hand Test consists of nine cards, each containing a picture of a human hand in a position different from those on the other cards. The person tested is asked to tell what each of the hands might be doing.

The tenth card is blank and the person tested is asked to imagine a hand for that card and then to talk about it.

The test is scored as follows, according to what is seen:

1. Aggressiveness—if the hand is seen as hitting.
2. Directing—if the hand is seen as giving signals as a traffic policeman.
3. Fear—warding off aggression, self-protection.
4. Affection—if the hand is seen as reaching out in a friendly way.
5. Communication—getting ideas across to others, emphasizing a point.
6. Activity—hands performing skillful mechanical work.
7. Submissiveness—calling for help.
8. Passivity—no action, "waiting for finger nails to dry."
9. Exhibitionism—attracting attention to oneself.
10. Crippled hands—hands deformed or diseased.

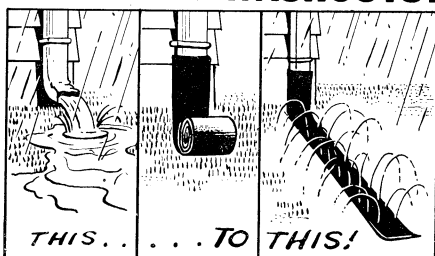
Scores on this test were found to distinguish between prison inmates and normal individuals, between prison inmates and indigents, and between normal individuals and withdrawn mental patients.

• Science News Letter, 78:109 August 13, 1960

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INVENTORS NEEDED AT ONCE

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