

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.

AMERICA'S SPACE VEHICLES: A Pictorial Review—Will Eisner—*Sterling*, 140 p., illus., \$4.95. Brief summary of space probes, launch vehicles, rocket motors, satellites, unmanned and manned space vehicles.

BROCKHAUS ILLUSTRATED GERMAN-ENGLISH/ENGLISH-GERMAN DICTIONARY—Helmut Motekat, Ed., with John Bourke—*McGraw*, 728 p., illus., \$9.95. Modern dictionary with precise definitions and examples showing correct usage in variety of contexts, includes idioms and scientific terms.

CARE AND BREEDING OF BUDGERIGARS, CANARIES AND FOREIGN FINCHES—R. B. Bennett—*Arco*, 320 p., illus. by author, \$10. A handbook on care and maintenance of a great variety of cage birds with many colored illustrations.

CAREERS IN RESEARCH SCIENCE—Theodore Wachs, Jr.—*Walck, H. Z.*, 96 p., illus., \$3.50. Attractively presents facts about careers in the various fields of research open to well-trained young people.

CLASSICAL ELECTRODYNAMICS—John David Jackson—*Wiley*, 641 p., \$13. Detailed exposition of electromagnetic theory, a two-semester course for beginning graduate students.

COMPLETE GUIDE TO U. S. CIVIL SERVICE JOBS—David Turner—*Arco*, 4th ed., 115 p., illus., paper, 75¢.

COMPUTER PROGRAMMING HANDBOOK: A Guide for Beginners—Robert Nathan and Elizabeth Hanes—*Prentice-Hall*, 214 p., illus., \$7.65. Includes practical guide to specific machine operations.

CONTEMPORARY BOTANICAL THOUGHT—Anna M. McLeod and L. S. Copley, Eds.—*Quadrangle Bks*, 197 p., illus., \$6.50. Series of lectures intended to give botanists an overall survey of research advances in botanical morphology, taxonomy, genetics, ecology, evolution, mycology and plant cell structure.

CONTINUITY AND CHANGE IN AFRICAN CULTURES—William R. Bascom and Melville J. Herskovits—*Univ. of Chicago Press*, 309 p., paper, \$1.95. Reprint (1959).

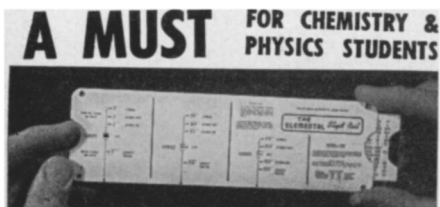
DESIGN DATA FOR AERONAUTICS AND ASTRO-NAUTICS: A Compilation of Existing Data—

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Richard B. Morrison and Melva J. Ingle, Eds.—*Wiley*, 581 p., illus., \$18. Presents most frequently used material in a form suitable for analysis and computation.

A DICTIONARY OF SYMBOLS—J. E. Cirlot, transl. from Spanish by Jack Sage, foreword by Herbert Read—*Philosophical Lib.*, 400 p., 32 plates, \$12. Clarifies essential meaning of each symbol, includes bibliography.

THE DOCTORS' DILEMMAS—Louis Lasagna—*Harper*, 306 p., \$4.95. A physician's view of his profession and the diverse influences on modern medicine and public health, from drug industry and foundations to Congress and mass media.

EDUCATION: The Challenge Ahead—C. Scott Fletcher, Ed.—*Norton*, 232 p., \$4.50. Fifteen essays by leading American educators and men of public affairs consider education's role in preparing individuals for public responsibility.

ELECTROMAGNETICS—Robert M. Whitmer—*Prentice-Hall*, 2nd ed., 357 p., illus., \$13. Undergraduate textbook, adheres to the field theory point of view.

ELEMENTS OF INFRARED TECHNOLOGY: Generation, Transmission and Detection—Paul W. Kruse, Laurence D. McGlauchlin and Richmond B. McQuistan—*Wiley*, 448 p., diagrams, \$10.75.

EXPERIMENTATION AND MEASUREMENT—W. J. Youden—*Nat. Science Teachers Assn (Scholastic Bk Services)*, 127 p., illus., paper, 50¢. Statistics at secondary school level, sponsored by the National Bureau of Standards.

FERRITES: An Introduction for Microwave Engineers—R. A. Waldron—*Van Nostrand*, 240 p., illus., \$8.50. Basic theoretical principles of ferrites with discussion of applications.

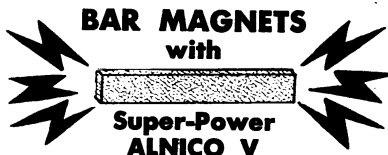
FRANCOIS MATTHES AND THE MARKS OF TIME: Yosemite and the High Sierra—Fritiof Fryxell, Ed.—*Sierra Club*, 189 p., illus., \$7.50. Essays treating geological and glacial aspects of Yosemite Valley.

FUNDAMENTAL FORMULAS IN PHYSICS, Vols. I & II—Donald H. Menzel—*Dover*, 741 p., paper, \$2 each. Revised version of first edition, 1955.

THE HAZARDS OF ATOMIC WASTES: Perspectives and Proposals on Oceanic Disposal—Alton Frye—*Public Affairs Press*, 45 p., paper, \$1. Monograph considers this developing technical problem with regard to international legal implications.

THE INTEGRITY OF THE BODY: A Discussion of Modern Immunological Ideas—F. M. Burnet—*Harvard Univ. Press*, 189 p., \$4.75. Nobelist (1960) outlines the facts and latest theories of immunity in language understandable to non-specialists.

IRRIGATION AND CLIMATE: New Aids to Engineering Planning and Development of Water Resources—Henry Olivier—*Arnold, E. & Co.*



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(*St Martins*), 250 p., illus., \$25. Reference volume for engineers and agriculturists, particularly valuable for work in undeveloped countries.

JOHN WILHELM'S GUIDE TO ALL MEXICO—*McGraw*, rev. ed., 307 p., illus., \$4.95. Up-to-date advice for travelers.

LECTURES IN PROJECTIVE GEOMETRY—A. Seidenberg—*Van Nostrand*, 230 p., \$6.50. Undergraduate text, developing the subject axiomatically.

MAN'S NEW IMAGE OF MAN—Oliver L. Reiser—*Boxwood Press*, 174 p., paper, \$3.50. An interpretation of the development of American philosophy from puritanism to world humanism.

MATHEMATICS FOR PRACTICAL USE—Kaj L. Nielsen—*Barnes & Noble*, 237 p., paper, \$1.25. Simplified outline to basic mathematical concepts, with exercises in practical applications.

MEN AND ATOMS: The Discovery, the Uses and the Future of Atomic Energy—William L. Laurence—*Simon & Schuster*, 319 p., paper, \$1.45. Reprint, with new chapter on the feasibility of the neutron bomb.

METHOD AND THEORY IN AMERICAN ARCHAEOLOGY—Gordon R. Willey and Philip Phillips—*Univ. of Chicago Press*, 270 p., paper, \$1.50. Reprint (1958).

A METHODOLOGY OF SYSTEMS ENGINEERING—Arthur D. Hall—*Van Nostrand*, 478 p., \$12. Emphasizes systems engineering as a process, systems synthesis and analysis, and choice among alternative systems.

MODERN TECHNOLOGY AND CIVILIZATION: An Introduction to Human Problems in the Machine Age—Charles R. Walker with Adelaide G. Walker—*McGraw*, 469 p., \$7.50; paper, \$4.75. Orientation course.

THE MOUNTAIN WORLD, 1960/61—English version ed. by Malcolm Barnes—*Rand McNally*, 262 p., 63 plates, maps, \$6.95. Printed in Switzerland, presents papers on mountaineering expeditions, ranging from Canadian Arctic to Antarctic, from the Himalaya to the Andes.

THE ORIGINS AND HISTORY OF CONSCIOUSNESS, Vols. I & II—Erich Neumann, foreword by C. G. Jung, transl. from German by R. F. C. Hull—*Harper*, 492 p., illus., paper, \$1.95, \$1.85. Reprint (1954).

PAIN: Its Modes and Functions—F. J. J. Buytendijk, transl. from Dutch by Eda O'Shiel—*Univ. of Chicago Press*, 190 p., \$3.95. Scholar examines both the physiology and the psychology of pain.

PARTICLE ACCELERATORS—M. Stanley Livingston and John P. Blewett—*McGraw*, 666 p., illus., \$17.50. Authoritative work, explains basic principles of particle acceleration and discusses in detail each class of accelerator.

THE PEOPLE OF ARITAMA: The Cultural Personality of a Colombian Mestizo Village—Gerardo and Alicia Reichel-Dolmatoff—*Univ. of Chicago Press*, 482 p., illus., \$8.50. Anthropological study of a village in transition between highland Indian and lowland Creole cultures.

PETROLEUM—D. Petrie—*Oxford Univ. Press*, 86 p., illus., \$1.75. Short survey of the geology, chemistry and production of oil.

PLANT LIFE OF PALESTINE: Israel and Jordan—Michael Zohary—*Ronald*, 262 p., illus., \$8. A geobotanical study based on three decades of observational and experimental data.

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PRINCIPLES OF COLLEGE PHYSICS, Vols. I & II—George Shortley and Dudley Williams—Prentice-Hall, 3rd ed., 872 p., illus., \$14.65. Suitable for students of both elementary and advanced backgrounds, stresses modern developments throughout.

PRINCIPLES OF NEURODYNAMICS: Perceptrons and the Theory of Brain Mechanisms—Frank Rosenblatt—Spartan Bks, 616 p., diagrams, \$6.50. Sets forth the principles, motivations and accomplishments of the perceptron, a kind of brain model designed to determine the physical conditions of "natural intelligence."

PSYCHIATRY: Biological and Social—Ian Gregory—Saunders, 577 p., \$10. Psychiatry for the non-specialist, outlining its principles and applying them to the diagnosis and treatment of neuroses met in practice.

RADIATION MEASUREMENTS OF THE EFFLUENT FROM THE KIWI-A SERIES OF REACTORS—H. S. Jordan—Los Alamos Scientific Lab. (OTS), 128 p., illus., paper, \$2.50. Data and hazard evaluations.

RESOURCE LITERATURE FOR SCIENCE TEACHERS—John S. Richardson, Ed.—Ohio State Univ., rev. 2nd ed., 103 p., paper, \$2.

SCIENCE AGAINST CANCER—Pat McGrady—Public Affairs Committee, Pamphlet No. 324, 20 p., illus., paper, 25¢ direct to publisher, 22 E. 38th St., New York 16, N. Y. A look at the progress made in the fight against cancer.

• Science News Letter, 81:140 March 3, 1962

Early Science Experiences (Continued from p. 133)

the data collected from the finalists at the 12th National Science Fair-International, it is important to note that 31% of the 385 were girls and that the work of these young feminine scientists demonstrated a high level of ability and wide range of interest.

Professional goals among the scientific disciplines were designated by 95% of the finalists when they were asked to describe their plans for the future. Almost a quarter of them look forward to careers in the medical sciences, 18% in engineering, 16% in physics, 13% in biological sciences, 9% in teaching, 7% in chemistry, 4% in mathematics, and so on.

A whole world of facts, questions and ideas discovered in books, magazines, professional journals, scientific papers and science news reports served as the springboard for 35% of the ingenious and competent projects shown by the finalists at the National Fair. Individual curiosity, observations, experiences or problems inspired 16% of the exhibits, and 14% came from school courses, laboratory work, teachers' suggestions, activities or books available at school. Almost as many, 12%, were the outgrowth of earlier projects carried out by the finalists; 6% came from discussions with professional scientists. Science institutes and seminars supplied 4%. Other sources of stimulating ideas were science fairs, family and family friends, scientific laboratories, summer or part-time jobs in science, television programs, and Navy Science Cruises awarded the finalists for the excellence of their projects at earlier science fairs.

The backgrounds of these young men and women are varied, with 46.7% coming from homes where both parents continued their education beyond high school, 25.9% from homes where one parent has had some college training, and 27.5% from those where neither parent has had any advanced education. A total of 62.6% of their

fathers attended college, with 40% attaining degrees (the degrees included 24 doctorates, five in medicine, eight in law, 31 master's and 81 bachelor's degrees.)

Some college background was reported for 56% of their mothers, and 26% earned degrees. Thirty-seven percent of their mothers are employed and, of those who work, 59% are professionally employed (39% as teachers); 37% work in clerical, sales or service jobs. Two mothers hold managerial positions, one works in a factory and one is a farmer.

The occupations of the fathers include 38% in the professions, 29% in clerical, sales and service positions, 16% in mana-

gerial or ownership categories, 7% in factory, construction or unskilled jobs and 6% in farming and ranching.

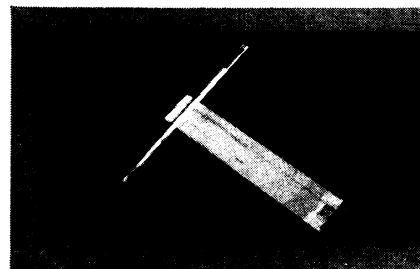
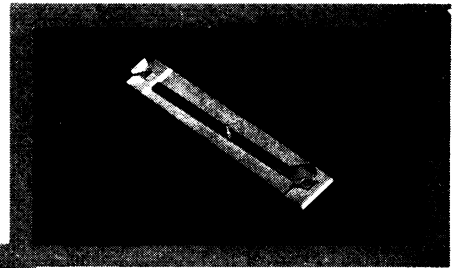
The 385 pre-scientists chosen to be finalists at the international event were selected by the judges of 200 cooperating fairs in 45 states, the District of Columbia, Puerto Rico, Germany-France-Italy, Japan, Canada and Thailand. These cooperating fairs, which exhibited some 68,000 projects to 1,760,000 visitors, were, in turn, supported by local school fairs with exhibits estimated to total more than three-quarters of a million. These projects were seen by nearly four million people.

• Science News Letter, 81:133 March 3, 1962

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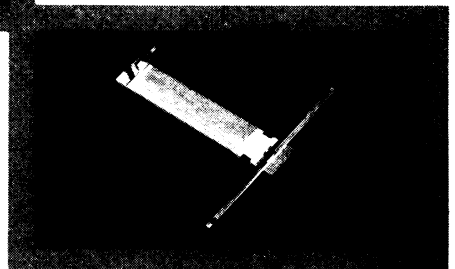
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