

# Books of the Week

For the editorial information of our readers, books received for review since last week's issue 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. Request free publications direct from publisher, not from Science Service.

**ALGEBRA ACCELERATED, Book I**—E. Justin Hills and Estelle Mazziotta—*Bennett*, 320 p., illus., \$3.44. Elementary high school course, designed to stimulate the gifted student.

**AXENIC CULTURE OF INVERTEBRATE METAZOA: A Goal**—Ellisworth C. Dougherty, Ed.—*N. Y. Acad. of Sciences, Annals*, Vol. 77, Art. 2, 380 p., illus., paper, \$4.50. Reports dealing with pure cultures of free-living forms, parasitic worms, nematodes, snails, scorpions and insects.

**BRIEF COURSE IN ORGANIC CHEMISTRY**—Lyell C. Behr, Reynold C. Fuson and Harold R. Snyder—*Wiley*, 2nd ed., 289 p., illus., \$5.75. Completely rewritten with more examples of reactions, more detailed explanations, questions at the end of chapter added, and laboratory procedures omitted.

**A COMPARATIVE ANALYSIS OF THE JAJMANI SYSTEM**—Thomas O. Beidelman—*Augustin* for the Assn. for Asian Studies, Monograph 8, 86 p., \$2.50. Anthropological thesis investigating Indian system of prescribed hereditary payments, duties and rites between different castes in the same community.

**CURRENT RESEARCH AND DEVELOPMENT IN SCIENTIFIC DOCUMENTATION, No. 4**—Madeline M. Henderson, Compiler—*Nat. Science Foundation, Off. of Science Info. Serv. (Govt. Print. Off.)*, 85 p., paper, 15¢. Supersedes earlier reports describing current research on information, storage and retrieval, and on mechanical translation.

**DISEASES OF LABORATORY PRIMATES**—Theodore C. Ruch; Maryeva W. Terry, Asst. Ed.—*Saunders*, 660 p., illus., \$7.50. First volume of projected four-part Handbook of the Primates. Monographic treatment of spontaneous disease in laboratory monkeys, also dealing with disease problems peculiar to monkeys in zoos. For the specialist and the investigator using laboratory primates.

**THE EARTH AND ITS RESOURCES: A Textbook for Courses in Physical Geography and Earth Science**—Vernor C. Finch, Glenn T. Trewartha and M. H. Shearer—*McGraw*, 3rd ed., 584 p., illus., \$6. Introductory course, with technical terms fully explained.

**EFFECTS OF CONCRETE CHARACTERISTICS ON THE PULSE VELOCITY: A Symposium**—V. R. Sturup and others—*Highway Research Bd.*, 74 p., illus., paper, \$1.60. Summarizes experi-

ences with the use of the sonoscope in testing concrete.

**ELECTRIC MOTORS AND GENERATORS, ILLUSTRATED: An Up-to-date Practical Guide for All Those Interested in the Generation and Application of Electricity**—E. T. G. Emery and others—*Philosophical Lib.*, 384 p., 400 illus., \$12. British handbook emphasizing the applications of electrical engineering.

**ELECTRON PHYSICS AND TECHNOLOGY**—J. Thomson and E. B. Callick—*Macmillan*, 527 p., illus., \$10. British graduate course, combining basic principles on which modern electron physics is founded with description of the way in which various devices function, and how they are made.

**THE FIRST BOOK OF SHIPS**—Jeanne Bendick—*Watts, F.*, 69 p., illus. by author, \$1.95. Explains the parts of a ship, how it is built, various kinds of ships, their engines and equipment. Highly informative reading for young children.

**GERMFREE VERTEBRATES: Present Status**—James A. Reyniers, Ed.—*N. Y. Acad. of Sciences, Annals*, Vol. 78, Art. 1, 400 p., illus., paper, \$5. On the rearing and characteristics of germ-free and disease-free animals, and their use in research.

**GIVE US THE TOOLS**—Henry Viscardi, Jr., introd. by Eleanor Roosevelt—*Ericksson-Taplinger Co. (Taplinger)*, 266 p., \$3.95. The story of Abilities, Inc., a business concern run entirely by severely disabled people, written by its founder.

**A GUIDED TOUR THROUGH SPACE AND TIME**—Eva Fenyo—*Prentice-Hall*, 181 p., illus. by author, \$3.50. Explains abstract theories of pure physics in such a way that anyone, even without previous scientific training, can grasp them.

**HANDBOOK OF COMPUTATION FOR BIOLOGICAL STATISTICS OF FISH POPULATIONS**—W. E. Ricker—*Fisheries Research Bd. of Canada (Queen's Printer, Ottawa)*, 300 p., \$5. Reviews major contributions in the scientific study of fisheries, separating the effects of births, deaths and growth on fish populations, and showing how a population responds to changes in these variables.

**HIGHLIGHTS OF PROGRESS IN MENTAL HEALTH RESEARCH 1958**—Stephen Szara and others—*Public Health Service—NIH (Govt. Print. Off.)*, 40 p., paper, 20¢. Selections from studies carried on by National Institute of Mental Health scientists during 1958.

**HYPERSONIC FLOW THEORY**—Wallace D. Hayes and Ronald F. Probst—*Academic*, 464 p., illus., \$11.50. Presents fundamentals of the theory with comprehensive report on the state of knowledge at this time. This is Volume 5 of a series edited by F. N. Frenkling called *Applied Mathematics and Mechanics*.

**INTRODUCTION TO THE PHYSICAL SCIENCES**—Morris Goran—*Free Press*, 421 p., illus., paper, \$6. General science course for college students, presenting astronomy, meteorology, geology, physics and chemistry as parts of a unified whole; includes biographical sketches of scientists.

**THE LANGUAGE OF PSYCHOLOGY**—George Mandler and William Kessen—*Wiley*, 301 p., \$6.75. Analysis of scientific language in psychology, tracing its development from vernacular to the formulation of explicit theories, emphasizing recent development in the logic and philosophy of science.

**THE LIFE OF SIR ALEXANDER FLEMING: Discoverer of Penicillin**—Andre Maurois, transl. from French by Gerard Hopkins, introd. by Robert Cruickshank—*Dutton*, 293 p., photographs, \$5. From the background of laboratories, test tubes and pipettes, antiseptics and antibiotics emerges a portrait of the man and great scientist who died in 1955.

**LOAD-CARRYING CAPACITY OF ROADS AS AFFECTED BY FROST ACTION: Final Report**—G. A. Meskal, W. W. Stiffler and Carl E. Vogelgesang—*Highway Research Bd.*, Bull. 207, 32 p., illus., paper, 80¢. Summaries of state projects, with Oregon and Indiana reports in full.

**MODERN SCIENCE AND HUMAN FREEDOM**—David L. Miller—*Univ. of Texas Press*, 297 p., \$6. Examines whether the great traditions of Western culture can be reconciled with the impact of science and the theory of evolution.

**MOTIVATION OF SCIENTISTS AND ENGINEERS: A Survey of Management Policies and Practices in Selected Companies**—Leonard C. Beanland and others—*Stanford Univ., Grad. School of Business*, 47 p., paper, \$1. Group research project of twelve Stanford fellows exploring incentives in industry.

**PHILIPPINE ZOOLOGICAL EXPEDITION 1946-1947: Tabanidae (Diptera)**—Cornelius B. Philip—*Chicago Nat. Hist. Mus.*, 83 p., illus., paper, \$2. Report on horseflies and deerflies collected by the expedition.

**PUSH AND PULL: The Story of Energy**—Paul Blackwood—*Whittlesey House*, 190 p., illus. by William D. Hayes, \$3. Story of the energy present in each push or pull motion made by man or machine; explains solar, mechanical, radiant, chemical and nuclear energy, in simple terms, with suggestions for experiments.

**QUALITATIVE ANALYSIS AND ANALYTICAL CHEMICAL SEPARATIONS**—Philip W. West and Maurice M. Vick—*Macmillan*, 2nd ed., 302 p., illus., \$4.50. Fundamental text for second semester studies of general chemistry.

**RESEARCH IN AGING: VA Prospectus**—Veterans Administration Advisory Committee on Problems of Aging, Ralph W. Gerard, Chmn.—*Govt. Print. Off.*, 125 p., illus., \$1.50. Transcribed medical discussion on the deterioration of molecules, cells, organs, individuals and groups.

**SCIENCE MATERIALS: Preparation and Exhibition for the Classroom**—Gordon G. Pond—*Brown, W. C.*, 132 p., illus., paper, \$2.75. Suggestions for preparing exhibits in the natural sciences, amply illustrated, with bibliographies.

**SMOKING, THE CANCER CONTROVERSY: Some Attempts to Assess the Evidence**—Sir Ronald A. Fisher—*Oliver & Boyd*, 47 p., paper, 35¢. Letters and lectures by a British statistician, assessing the value of statistical evidence related to the incidence of lung cancer in smokers.

**SOLID STATE PHYSICS: Advances in Research and Applications, Vol. 8**—Frederick Seitz and David Turnbull, Eds.—*Academic*, 519 p., illus., \$13.50. Contains article on electronic spectra of molecules, starting new policy of focusing more attention on the properties of organic solids.

**SOME PROBLEMS IN CHEMICAL KINETICS AND REACTIVITY, Vol. 2**—N. N. Semenov, transl.

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from Russian by Michel Boudart—*Princeton Univ. Press*, 330 p., paper, \$4.50. On the kinetics of chain reactions, branched chain reactions and thermal explosions.

TRAVEL CHARACTERISTICS IN URBAN AREAS—Edward M. Hall and others—*Highway Res. Bd.*, 130 p., illus., paper, \$2.60. Travel patterns in cities, in subdivisions, at peak hours, center city goods movement and use of computer in evaluation of data.

THE TRADITIONAL CHINESE CLAN RULES—Hui-Chen Wang Liu—*Augustin* for the Assn. for Asian Studies, Monograph 7, 264 p., \$5.50. Systematic study of clan rules from the standpoint of social control.

TREATISE ON INVERTEBRATE PALEONTOLOGY: Part O: Arthropoda I (Trilobitiforms)—Raymond C. Moore, Ed., *J. Geological Soc. of Am.*, 560 p., illus., \$10.50. Primarily concerned with the trilobites, this volume of the Treatise is the product of the collaboration of 18 specialists from seven different nations.

TRIBES THAT SLUMBER: Indian Times in the Tennessee Region—Thomas M. N. Lewis and Madeline Kneberg—*Univ. of Tenn. Press*, 196 p., illus. by Madeline Kneberg, \$3.75. For students and amateur archaeologists, this book reconstructs the early history of Indians living in the TVA reservoir area.

U. S. GOVERNMENT AWARDS UNDER THE FULBRIGHT AND SMITH-MUNDT ACTS: 1960-61 University Lecturing and Advanced Research in Europe, the Near East, the Far East and Africa—Committee on International Exchange of Persons—*Conference Bd. of Assoc. Research Councils, Comm. on Int'l Exchange of Persons*, 83 p., paper, free upon request direct to publisher, 2101 Constitution Ave., Washington 25, D. C.

VISION SCREENING FOR ELEMENTARY SCHOOLS: The Orinda Study—Henrik L. Blum, Henry B. Peters and Jerome W. Bettman—*Univ. of Calif. Press*, 146 p., paper, \$3.75. Report of a three-year comparative study of vision-screening methods on more than 1,000 school children, with clinical evaluations.

WE COME FROM THE SEA—Hans Hass, transl. from German by Alan Houghton Brodrick—*Doubleday*, 288 p., photographs, \$6.50. Picture-and-text study of marine life by marine biologist and skin-diver.

Science News Letter, June 20, 1959

#### ELECTRONICS

### Electronic Processing Aids Tax "Revenooers"

ELECTRONIC PROCESSING of income tax returns soared to a new high this year, making it possible to detect would-be tax evaders more effectively. It also enabled the Internal Revenue Service to make speedier refunds to taxpayers than ever before.

The Service processed some 47,000,000 returns with high-speed electronic equipment this year, Commissioner Dana Latham told the southern states conference of Certified Public Accountants meeting in Oklahoma City.

This compared with 38,000,000 last year and an estimated 60,000,000 next year, he said.

One of the fruits of this year's record accomplishments was the scheduling of some \$4,000,000,000 in refunds to taxpayers by the end of May, just six weeks after the filing deadline. This constituted the bulk of the refund, the Commissioner said.

Science News Letter, June 20, 1959

#### MEDICINE

## Study Cancer Inheritance

Surveys of the families of persons who had had breast cancer, other forms of cancer, or had had no cancer indicate there may be a genetic factor causing breast cancer.

GENES MAY be involved in breast cancer.

More cases of breast cancer are reported among the grandmothers, mothers, sisters and aunts of women with the disease than can normally be expected, an Ohio State University researcher reports.

This excess appears to be at least partly due to the genes that determine heredity, Dr. Madge T. Macklin says in the *Journal of the National Cancer Institute* (May). If environmental influences alone were responsible for the higher breast cancer rate, females on a patient's father's side would not have the high rate that has been reported, Dr. Macklin explains.

Cultural patterns such as the tendency for women to have few or no children and to nurse those children they have are among the environmental factors commonly believed to play an important role in causing breast cancer. An objection to this interpretation, Dr. Macklin says, is that both paternal and maternal grandmothers show equally increased breast cancer rates over that found in the general population.

As evidence for the theory that heredity influences human breast cancer, the re-

searcher cites statistical findings in her study of some 840 Ohio residents.

Of 327 aunts on the breast-cancer patient's father's side, 22 had verified breast cancers. Less than seven would be expected normally. Again, ten breast cancers were found in one group of grandmothers that "should" have had only about two and one-half cases.

The higher rate was found even among those relatives who had been married, Dr. Macklin says. The observed breast-cancer deaths were about twice the number expected in the "ever-married" aunt group, and almost four times as much in the single group.

Three different groups were questioned in the survey. One was composed of women who had had surgery for proved breast cancer; the second was made up of both men and women with cancer in some organ other than the breast; the third group included women who had, at the time of interview, no symptoms or signs of breast cancer. The entire family of each participant in the survey was investigated thoroughly, Dr. Macklin reports.

Science News Letter, June 20, 1959

#### MEDICINE

## Thymus May Cause Disease

The existence of large thymus glands in abnormal adults, such as criminals, may be evidence that the gland plays an important role in many diseases and abnormalities.

THE MYSTERIOUS THYMUS gland may be nothing but a trouble maker during adult life.

This ductless gland-like body is located near the lungs. It was commonly thought that the gland "disappeared" during adolescence. However, numerous criminals that have been executed were found to have large thymuses. The "normal" adult does not have such tissues, a Milwaukee doctor reported at the American Medical Association meeting in Atlantic City.

This gland probably plays a large role in many diseases, Dr. Vaughan P. Simmons, assistant medical director of Northwestern Mutual Life Insurance Company, added.

The thymus follows a rhythmical pattern, becoming larger and then smaller. It becomes smaller as it produces white cells and dumps them into the blood stream.

This gland may produce the excessive white blood cells found in leukemia, cancer of the blood, the doctor explained. It has been found that the thymus must be present in certain strains of mice, if they are

to develop leukemia. If these mice have no thymus, they do not develop the blood disease even when they are given leukemia-producing viruses. The thymus probably plays the same role in the disease in humans, Dr. Simmons speculated.

Some people do not believe that this gland plays a part in leukemia because the thymus is small on autopsy while other lymphoid tissues are full of white cells.

The thymus apparently plays a large role in growth, including the abnormal growth of cancerous cells. For instance, there is a tremendous release of mature thymic cells late in pregnancy, a period of rapid growth. This same release could be associated with other phenomena of rapid growth; the body does not know which are the demands of the unborn baby and which are those of a cancerous growth, he explained.

Dr. Simmons said that the thymus may be linked with other diseases such as pneumonia, various blood diseases, and the collagen diseases such as arthritis.

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