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.

THE CHILD WHO IS MENTALLY RETARDED—Children's Bureau—*Govt. Printing Office,* Children's Bureau Folder No. 43, 1956, 23 p., illus., paper, 10 cents. Information and advice for parents on what to do for the retarded child.

DOCUMENTATION IN ACTION—Jesse H. Shera, Allen Kent and James W. Perry, Eds.—*Reinhold,* 471 p., illus., $10.00. Based on a conference on documentation at Western Reserve University and discussing the techniques of effectively organizing and utilizing recorded information.

EDUCATION AND HUMAN MOTIVATION — H. Harry Giles — *Philosophical Library,* 108 p., $3.00. Presenting an integrative theory of human growth and behavior and describing research designed to test and improve the theory.

ELEMENTS OF PARTIAL DIFFERENTIAL EQUATIONS—Ian N. Sneddon—*McGraw-Hill,* International Series in Pure and Applied Mathematics, 327 p., $7.50. Presenting the elements of the theory in a form suitable for the use of students and research workers whose main interest lies in finding solutions of particular equations rather than in the general theory.

ENCYCLOPEDIA OF CHEMICAL REACTIONS: Volume VI, Samarium, Scandium, Selenium, Silicon, Silver, Sodium—Compiled by C. A. Jacobson and edited by Clifford A. Hampel—*Reinhold,* 438 p., $12.50. A reference work for chemists.

FISHES: A Guide to Fresh- and Salt-Water Species—Herbert S. Zim and Hurst H. Shoemaker—*Simon and Schuster,* A Golden Nature Guide, 160 p., illus., paper, $1.00. To help you to identify the fish you catch on a fishing trip or see in an aquarium.

HEREDITY AND YOUR LIFE: An Account of Everyday Human Inheritance — A. M. Winchester—*Vantage,* 333 p., illus., $5.00. Telling the facts, superstitions and misconceptions about human heredity.

IBM JOURNAL OF RESEARCH AND DEVELOPMENT: Vol. 1 No. 1—C. B. MacKenzie, Ed.—*International Business Machines Corporation,* 100 p. illus., paper, quarterly, $3.50 per year. Publishing comprehensive articles on the latest scientific and technical results from IBM research and development laboratories here and abroad.

INTRODUCTORY ELECTRICAL ENGINEERING — George F. Corcoran and Henry R. Reed—*Wiley,* 527 p., illus., $7.95. A text designed for use in an introductory course in electrical engineering. A complete revision of the senior author's "Basic Electrical Engineering."

LIFE AND MIND—Edmund Ware Sinnott—*Antioch Press,* Antioch College Founders Day Lecture, 29 p., paper, 50 cents. Because man himself is a living thing, the author points out, some of the deepest problems in philosophy are ultimately bound to be biological ones.

MANUAL OF RECLAIMED RUBBER—J. M. Ball, Ed. — *Rubber Reclaimers Association,* 94 p., paper, $3.00. Technical data concerning this important aspect of the rubber industry.

NEW PERSPECTIVES FOR RESEARCH ON JUVENILE DELINQUENCY: A Report of a Conference on the Relevance and Interrelations of Certain Concepts from Sociology and Psychiatry for Delinquency, held May 6 and 7, 1955—Helen L. Witmer and Ruth Kotinsky, Eds.—*Govt. Printing Office,* Children's Bureau Publication Number 356, 1956, 92 p., paper, 30 cents.

PHOTOGRAMS OF THE YEAR, 1957: The Annual Review of the World's Photographic Art, Sixty-Second Year of Issue—Introduction by A. L. M. Sowerby—*Philosophical Library,* 31 p., illus., $6.95. Photographs of the highest quality with a plate-by-plate commentary by R. H. Mason. Prints and comments will interest photographers, but the pictures will delight anyone who loves the beauty with which we are surrounded.

PHYSICAL TECHNIQUES IN BIOLOGICAL RESEARCH: Volume II, Physical Chemical Techniques—Gerald Oster and Arthur W. Pollister, Eds.—*Academic,* 502 p., illus., $12.80. Directed to researchers in biology and describing a large number of physical techniques that might prove useful to them in advancing their investigations.

PHYSICS—John Stewart Marshall and Elton Roy Pounder—*Macmillan,* 906 p., illus., $8.50. A text for the first and second years of a university course. Calculus is not needed for an understanding.

SOLID STATE PHYSICS: Advances in Research and Applications, Volume 3—Frederick Seitz and David Turnbull, Eds.—*Academic,* 588 p., illus., $12.00. Providing students and researchers with surveys of important areas in the field.

THEORY OF LAND LOCOMOTION: The Mechanics of Vehicle Mobility—M. G. Bekker—*University of Michigan Press,* 520 p., illus., $12.50. Providing automotive engineers with a comprehensive source of information on the physical relationship between a motor vehicle and the environment in which it operates, particularly in off-the-road locomotion. Skis, sleighs and toboggans are included.

Science News Letter, January 19, 1957

PUBLIC HEALTH

Army Vaccine Cuts Illness to a Sniffle

➤ A VACCINE that was 98% effective in preventing widespread respiratory diseases like the common cold among Army recruits was discribed at a conference on cellular biology, nucleic acids and viruses.

The new vaccine was designed to combat respiratory diseases caused by organisms known as adenoviruses, types four and seven. These viruses cause diseases that resemble the common cold, but are accompanied by fever and inflamed membranes in the nose and throat.

The vaccine was reported by Dr. M. R. Hilleman, Walter Reed Army Institution of Research in Washington.

At Fort Dix alone, this type of illness had cost $1,500,000 a year in hospital care and lost man hours, Dr. Hilleman reported. During the winter of 1954, roughly 80% of all recruits at Fort Dix had become infected with the adenoviruses during their first eight weeks in the Army.

"The vaccine," Dr. Hilleman said, "is prepared by treating, with a solution of formaldehyde, viruses which have been grown in cultures of monkey kidney tissue. The method closely parallels that used in manufacturing the Salk polio vaccine."

With the help of the new vaccine, expected to become generally available in the "not distant future," the total number of respiratory diseases was reduced by 81%.

These adenovirus infections are not widespread among adults in civilian life, Dr. Hilleman reported, and cautioned that the public should avoid "foisting upon itself needless vaccinations in its grasping at any straw which offers hope for relief for its proverbial running nose."

He told the conference, sponsored by the New York Academy of Sciences, that the "potential need for the vaccine in children seems much greater than in adults."

Science News Letter, January 19, 1957

BIOCHEMISTRY

Harmless Bacteria Made Dangerous

➤ A "TRANSFORMING CHEMICAL" that can make harmless bacteria change into virulent or disease-producing bacteria has been separated from virulent bacteria by Drs. Deana T. Klein and Richard M. Klein of Columbia University and the New York Botanical Garden, New York.

The transforming chemical is DNA, or desoxyribonucleic acid, which, along with protein, makes up some viruses and the genes of cells. These genes carry hereditary factors from one generation to another.

The scientists worked with both the virulent and non-virulent strains of a bacterium called *Agrobacterium tumefaciens.* Only the virulent strain produces tumorous growths in certain plants, but when the DNA extracted from this strain was added to the normally harmless non-virulent strain, it too was able to cause plant tumors.

The harmless bacteria take up the DNA chemical and add it to one or several clusters of their own genes, the researchers reported. Then, this added DNA becomes a permanent part of the once-harmless genes, and the genes become disease-producing ones.

The research was supported by the American Cancer Society.

Science News Letter, January 19, 1957