

# 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.

**ANIMALS ALL**—Peter Skelton, Ed., with foreword by "Elephant" Bill Williams—*John Day*, 253 p., illus., \$3.75. A collection of animal stories by well-known authors selected as depicting accurately animal life and as having an animal as the true hero.

**ARCTIC FRONTIERS: United States Explorations in the Far North**—John Edwards Caswell—*University of Oklahoma Press*, 232 p., illus., \$3.75. Covering the period of exploration in the Arctic from 1850-1909.

**BIBLIOGRAPHY OF BOOKS FOR CHILDREN**—Christine B. Gilbert, Compiler—*Association for Child Education International*, 1956 ed., 130 p., paper, \$1.50. A guide to reading for children aged four through 12. Indexed by title and author, as well as subject.

**CONCISE ANATOMY**—Linden F. Edwards—*McGraw-Hill*, 2d ed., 502 p., illus., \$7.50. Most of the material remains essentially unchanged in this edition, but principles of applied anatomy have been added at the end of many chapters.

**CRUSTACEAN METAMORPHOSES**—R. E. Snodgrass—*Smithsonian*, Miscellaneous Collections, Volume 131, Number 10, 78 p., illus., paper, 80 cents. Unlike insects, most crustacea hatch at an early stage of embryonic development, when they have only a few body segments and corresponding appendages. They successively add new ones until the definitive number is attained.

**DESIGN IN CIVIL ARCHITECTURE: Elevational Treatments**—Sir Albert Richardson and Hector O. Corfiato—*Philosophical Library*, 216 p., illus., \$15.00. A selection of famous elevations with comments in English, French and Russian.

**DISEASES OF THE BREAST**—C. D. Haagensen—*Saunders*, 751 p., illus., \$16.00. Based on the author's experience for 25 years as a specialist in this field.

**EDUCATING SPASTIC CHILDREN: The Education and Guidance of the Cerebral Palsied**—F. Eleanor Schonell—*Philosophical Library*, 242 p., illus., \$6.00. Based on work and experience in five English-speaking countries over the past ten years. Written as much for the parent as for the specialist.

**ESSENTIALS OF HISTOLOGY**—Margaret M. Hoskins and Gerrit Bevelander—*Mosby*, 3d ed., 254 p., illus., \$4.00. Presenting important morphological characteristics of tissues and organs for use in beginning courses in histology.

**THE FIRST BOOK OF SURPRISING FACTS**—Frances N. Chrystie—*Franklin Watts*, illus. with drawings by Don Phillips, \$1.95. Important and useful information for children.

**FUN WITH FIGURES**—J. A. H. Hunter—*Oxford University Press*, 160 p., \$3.00. A collection of amusing puzzles involving figures. A complete set of answers is included as are also fifteen typical solutions.

**THE FUTURE OF ARID LANDS: Papers and**

Recommendations from the International Arid Lands Meetings—Gilbert F. White, Ed.—*American Association for the Advancement of Science*, 453 p., illus., \$6.75. Areas of meager and undependable rainfall and of sparse vegetation, commonly called "arid," account for roughly one-third of the land surface of the globe.

**INTRODUCTION TO SOLID STATE PHYSICS**—Charles Kittel—*Wiley*, 2d ed., 617 p., illus., \$12.00. Intended for students and young scientists and engineers as well as working scientists who have not had modern physics courses.

**THE MAMMALS OF SHENANDOAH NATIONAL PARK**—Richard H. Manville—*Shenandoah Natural History Association*, Bulletin No. Two, 69 p., illus., paper, \$1.00. Here the spotted skunk and harvest mouse reach nearly their northernmost limits, and the woodland jumping mouse and masked shrew are close to their southernmost extent.

**MISSILES AND ROCKETS: Magazine of World Astronautics**, Vol. 1, No. 1—Robert H. Wood, Editorial Director—*American Aviation Publications*, monthly, 150 p., illus., paper, \$8.00 per year. A news and feature periodical geared to the growing industrial, government and scientific requirements of what is today a complete new industry.

**NUCLEAR METALLURGY: Vol. III**—George H. Vineyard, Donald E. Thomas and Douglas S. Billington—*American Institute of Mining, Metallurgical and Petroleum Engineers*, IMD Special Report Series No. 3, 54 p., illus., paper, \$3.75. Compilation of papers presented at a symposium on nuclear metallurgy in October, 1956.

**PARKING AND BUYING HABITS OF A STORE'S CUSTOMERS**—Laurence C. Pendley—*Highway Research Board*, Special Report 11-C, 18 p., illus., paper, 60 cents. Auto-driving customers account for the major portion of sales in all departments. Supplement to "Parking as a Factor in Business."

**PARKING AND ITS RELATIONSHIPS TO BUSINESS: Summary Report of Project**—J. T. Stegmaier—*Highway Research Board*, Special Report 11-D, 16 p., illus., paper, 60 cents. Parking facilities were found to have an important effect on where people shop and how much they spend.

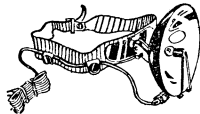

**PHILOSOPHY OF SCIENCE: Part One, Science in General**—P. Henry van Laer in collaboration with Henry J. Koren—*Duquesne University*, 164 p., cloth \$3.75, paper \$3.00. Exploring the meaning of science in general and the various general problems regarding science, such as abstraction, method, theory and demonstration.

**PHYSICS FOR EVERYBODY**—Germaine and Arthur Beiser with foreword by Henry A. Barton—*Dutton*, 191 p., illus., \$3.50. A lot of fun, Dr. Barton says, and a lot of stimulation and some real mental sharpening can be found in physics without knowing any mathematics beyond arithmetic and the very simplest concepts of algebra.

**POLYMER SOLUTIONS**—H. Tompa—*Academic*, 325 p., illus., \$8.50. Dealing essentially with the thermodynamics and the viscosity of polymer solutions.

**PROCEEDINGS OF THE CONFERENCE ON INSTRUMENTATION AND CONTROL IN THE PROCESS INDUSTRIES**—E. A. Roberts, Chairman—*Electrical Engineering Department, Armour Research Foundation*, 108 p., illus., paper, 3.00. Record of a conference held January 25-26, 1956.

**PROGRESS REPORT ON ATOMIC ENERGY RESEARCH: Hearings Before the Subcommittee on Research and Development of the Joint Committee on Atomic Energy, Congress of the United States**—Melvin Price, Chairman—*Govt. Printing Office*, 375 p., illus., paper, \$1.00. The most comprehensive current report on the subject available. The experts have poured into this record many facts and illustrations.

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**MONEY-BACK GUARANTEE IF NOT SATISFIED**

**MATTHEW DAY CO., INC., 25M, 34-13 Broadway, Fair Lawn, N. J.**

**RESEARCH IS PEOPLE: A Discussion of the Recruitment, Motivation, Recognition, Rating and Evaluation of Research Personnel**—J. H. Perrine and others—*Industrial Research Institute* (New York University Press), 69 p., illus., paper, \$4.00. Discussion of the problems related to personnel engaged in research. Proceedings of a symposium held in April, 1956.

**SCORPIONS**—Herbert L. Stahnke—*Arizona State College*, Poisonous Animals Research Laboratory, 36 p., illus., paper, 50 cents. Contrary to common belief, scorpions are not confined to subtropical and tropical climates, but in the United States they are more than a minor nuisance only in Arizona and parts of California. Visitors there are warned not to walk barefoot after dark and to shake their shoes before putting them on.

**SLOPES OF THE SEA SURFACE DEDUCED FROM PHOTOGRAPHS OF SUN GLITTER**—Charles Cox and Walter Munk—*University of California Press*, 79 p., illus., paper, \$1.75. Describing a method applied to aerial photographs taken near the Hawaiian Islands.

**SPECTROSCOPY AT RADIO AND MICROWAVE FREQUENCIES**—D. J. E. Ingram—*Philosophical Library*, 332 p., illus., \$15.00. For those who wish to apply the techniques in their own field of study.

**THERMODYNAMIC TABLES AND OTHER DATA**—R. W. Haywood, Ed.—*Cambridge University Press*, 23 p., paper, 50 cents. Useful information for physicists and engineers.

Science News Letter, November 3, 1956

#### FORENSIC MEDICINE

### Sex Identity Test To Aid Criminology

► A TEST for telling the sex of an unborn baby or for determining sex in doubtful cases can be used to help solve criminal problems.

The test depends on the presence of sex chromatin in the nucleus of female cells.

The sex chromatin persists in the cells after death. From it scientists can in certain circumstances identify the sex of small fragments of mutilated tissue, of material sticking to instruments and of human hair, Drs. A. D. Dixon and J. B. D. Torr of the University of Manchester, England, report in *Nature* (Oct. 13).

Even when a body has been buried in direct contact under two feet of soil, its sex can be identified with certainty as long as four weeks later by examination of the cell nuclei.

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#### WILD LIFE FILMS

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#### PUBLIC HEALTH

## Test Detects Nerve Gas

**Chemicals, now part of Army Chemical Corps testing kits, used to detect very small amounts of nerve gases in water. Fish can also be used to spot Sarin and Tabun.**

► VERY SMALL AMOUNTS of lethal nerve gases in public water supplies can be rapidly detected by a test announced by Joseph Epstein of the Army Chemical Center, Md., in *Public Health Reports* (Oct.). Mr. Epstein is chief of the sanitary chemistry branch, biochemical research division, Chemical Warfare Laboratories.

The test is chemical, but one nerve gas, Tabun, can be detected by its fruity odor, and both it and another nerve gas, Sarin, can also be detected by tests with small fish.

Many chemicals that are poisonous when inhaled, such as hydrogen cyanide and cyanogen chloride, are so rapidly broken down by hydrolysis in water that it would take enormous amounts, one ton in a 10,000,000-gallon reservoir, to make the water dangerous for drinking, Mr. Epstein points out.

Nerve gases, on the other hand, would be poisonous if water containing very small concentrations were drunk.

The average man could safely drink water containing 25 parts per million of hydrogen cyanide for a week if he drank normal amounts of water daily. However, for one nerve gas, Sarin, the safety level, or "tolerance," has been set at five-tenths of a part per million for a person drinking no more than five quarts daily for three days.

Tabun, another nerve gas, is about one-fourth as poisonous as Sarin when swallowed.

The lethal amounts of either gas, however, are small enough so that contamination of water supplies is probable in case of chemical warfare.

The test Mr. Epstein and associates have developed will detect as little as one-tenth of a part per million of Sarin in water, that is, one-fifth of the concentration set as safe to drink in normal amounts for three days.

The method of testing for both Sarin and Tabun in the presence of their hydrolysis products depends on their reaction with either benzidine or o-tolidine and alkaline peroxide solutions. The test is included now in Chemical Corps water-testing kits.

The fish tests might be useful in some cases for detecting small concentrations of the gases in water. Green sunfish, fathead minnows or goldfish could be used.

The concentration of each of the gases that will kill half of each of the test fish in 10, 15 and 20 minutes has been worked out. Half of the goldfish, for example, will be killed in ten minutes by thirty-five-

hundredths part per million of Sarin in water.

Simple decontamination methods will rapidly destroy both Sarin and Tabun once detected in water supplies.

Science News Letter, November 3, 1956

#### GENERAL SCIENCE

### Teachers Offered Aid For Summer Research

► TEACHERS in high schools and colleges who would like to undertake research in chemistry during the summer of 1957 are being offered the chance of a grant from the National Science Foundation if requests are made by Dec. 1.

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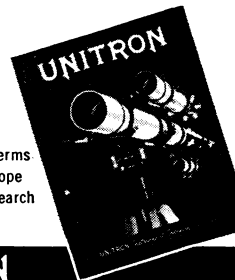
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