

Books of the Week

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ALL ABOUT FOX TERRIERS: A Complete Manual on History, Care and Training with Practical Information on How to Breed High-Class Dogs—George Frank Skelly—*Judd*, 299 p., illus., \$4.00.

THE CHEMICAL TECHNOLOGY OF DYEING AND PRINTING: Vat, Sulfur, Indigosol, Azo and Chrome Dyestuffs and Their Auxiliaries—Louis Diserens—*Reinhold*, 500 p., \$11.00. Translated from the second German edition by Paul Wengraf and Herman P. Baumann. Especially for the chemist and colorist.

ECONOMIES IN SEASONING—*Northeastern Wood Utilization Council*, 75 p., illus., paper, \$2.00. Much high-grade lumber is lost in the seasoning process.

EXPLORING ELECTRICITY: Man's Unfinished Quest—Hugh Hildreth Skilling—*Ronald Press*, 277 p., illus., \$3.50. Fascinating tales about men who looked for new things in the field of electricity; from Thales, who discovered what rubbing amber could do, to Lawrence and the atom smasher, Oppenheimer and the bomb.

FUNDAMENTALS OF PSYCHOANALYSIS—Franz Alexander—*Norton*, 312 p., \$3.75. An attempt by an authoritative writer to formulate basic principles in the field and to indicate their application in treatment. Theoretical discussion is minimized in the interest of clarity for the student.

GUARDING OUR WILDLIFE RESOURCES—Rachel L. Carson—*Govt. Printing Office*, 46 p., illus., paper, 30 cents. All animal lovers will be interested in this beautifully illustrated booklet.

THE INTERNATIONAL GAME FISH ASSOCIATION YEAR BOOK 1948—*International Game Fish Association*, 72 p., illus., paper, free upon request to publisher at American Museum of Natural History, New York, N. Y. Fishermen all over the world have common interests and enthusiasms regardless of political boundaries.

LET'S MEASURE THINGS—E. Laurence Palmer—*N. Y. State College of Agriculture*, 63 p., illus., paper, free upon request to publisher at Cornell University, Ithaca, N. Y. One of the well-known Cornell Rural School Leaflets telling how to measure or estimate a variety of things from the weight of trout and size of shot to the intensity of light and the height of clouds.

NEWER SYNTHETIC ANALGESICS—M. L. Tainter and others—*New York Academy of Sciences*, 174 p., illus., \$2.75. An interesting symposium on pain and the most modern method of relieving it.

NO PLACE TO HIDE—David Bradley—*Little, Brown*, 182 p., \$2.00. The atomic era, the author points out, fortunately or otherwise is now man's environment, to control or to adapt himself to as he can. The public, for their own protection will have to match

natural laws with civil laws. Science and sociology are as inseparable now as man and his shadow. This book is concerned with the deadly radiation spread in the wake of the atomic bomb.

PREVENTION OF DETERIORATION ABSTRACTS—*National Research Council*, 2,000 p. (approx.) per year, loose leaf with binder and index guides, \$37.50 per year. Abstracts are classified under headings such as biological agents, fungicides, leather, etc., An "Advance List," a monthly bibliography of reports received, is available for \$10.00.

SELECTED WORKS OF HENRY CLAPP SHERMAN: Mitchill Professor Emeritus of Chemistry, Columbia University—*Macmillan*, 1056 p., illus., \$5.00. Timely in this day when the feeding of the world is a major problem is this compilation of writings of a man invariably thought of in connection with nutrition.

A TREATISE ON THE NORTH AMERICAN RANUNCULI—Lyman Benson—*American Midland Naturalist*, 264 p., paper, \$1.25. Approximately 600 collections of this genus of flowering plant were made in 36 states, Canada and Mexico.

Science News Letter, November 27, 1948

AERONAUTICS

Jet-Propulsion Progress

► THE RECENT non-stop test flight of more than 3,400 miles made by the jet-propelled, eight-engine Northrop YB-49 Flying Wing bomber was a striking demonstration of the progress made in jet-propulsion in the six years since the first American jet-propelled fighter plane was constructed.

This "early" jet-propelled plane was the Bell Aircraft's Airacomet, the P-59A, whose development and production was announced by the Army in January, 1944. This airplane, fitted with two jet units built by General Electric to British designs, made its first flight on Oct. 1, 1942, 17 months after the first successful flight had been made in England with the Whittle jet engine, the prototype of the American power unit.

It was a single-seat plane, approximately 38 feet long and with a wingspan of 45.5 feet, that had a maximum speed of over 400 miles per hour, and a range limited by the amount of fuel it could carry. Its empty weight was about 8,000 pounds, while its loaded weight was somewhat less than 11,000 pounds.

In contrast, the Northrop Flying Wing has a wingspan of 172 feet but is only 53 feet long because it has neither the conventional fish-shaped fuselage nor a tail. It is composed of two broad, back-sloping wings which are thick enough in the near-junction region to hold a crew of from six to 10 men, thousands of gallons of jet fuel, eight GE-designed, Allison-built J-35 jet engines, 15 tons of bombs, and other necessary equipment. It is in the 500-miles-an-hour class.

The U. S. Air Force has several other

jet-propelled bombers in addition to its speedy jet-propelled fighters. The Douglas XB-43 is said to be the first U. S. bomber designed for jet-propulsion. It is a twin-engine affair with a range of some 1,400 miles. The North American XB-45 was one of the first operational Air Force jet bombers. It utilizes four General Electric jet-engines.

The Consolidated-Vultee XB-46 is also a four-jet bomber. Its service range is about 800 miles. The Boeing XB-47, known as the Stratojet, has sharply swept-back wings and tail surfaces. It has six General Electric jet engines. The Martin XB-48 has six General Electric-Allison J-35 engines that develop a total thrust of 24,000 pounds. It has a bomb capacity of 10 tons, a speed of over 480 miles an hour, and a combat radius of some 800 miles.

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