

• Books Off the Press •

CAREERS FOR GIRLS IN SCIENCE AND ENGINEERING—Evelyn Steele—Dutton, 189 p., illus., \$2.50

FORMULAS FOR THIS AND THAT—Norman E. Dodson—Newberry College, 75 p., illus., 75c paper

A HISTORY OF THE WAR: In Maps, In Photographs, In Words—Rudolf Modley—Penguin Books, 177 p., illus., 25c paper

ITALIAN OR AMERICAN; The Second Generation In Conflict—Irvin L. Child—Yale Univ., 208 p., \$2.75

THE JOHNS HOPKINS HOSPITAL AND THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE: A Chronicle: Volume 1 Early

Years 1867-1893—Alan M. Chesney—Johns Hopkins, 318 p., illus., \$3

LIFELINE: The Ships and Men of Our Merchant Marine at War—Robert Carse—Morrow, 189 p., illus., \$2.75

MARINE PIPING HANDBOOK: For Designers-Fitters-Operators—Edward P. Goehring—Cornell Maritime Press, 662 p., illus., \$5

SHRUBS OF MICHIGAN—Cecil Billington—Cranbrook Inst. of Science, 249 p., illus., \$2.50. Bulletin No. 20.

THE WHITE BRIGADE—Robert Goffin, English Version by Charles Lam Markmann—Doubleday, Doran, 199 p., \$2. An account of the Belgian underground.

GENERAL SCIENCE

Mexico Most Advanced

► MEXICO was once the most scientifically advanced country in Latin America. Alexander von Humboldt, famous German naturalist, explorer and historian who visited there at the beginning of the nineteenth century, set Mexico at the head of all Latin American countries in cultural attainment at that time.

Humboldt's travels between 1799 and 1804 and study of sciences in Latin-American countries were described by Dr. C. A. Browne of the U. S. Department of Agriculture, speaking before a meeting of the History of Science Society in New York City.

From Mexico, the great traveler pointed out, came the invention of the process of amalgamation of metals, about 1551. Humboldt cited, also, the excellence of the Mexican School of

Mines under the direction of Andres del Rio, discoverer of vanadium in 1801.

This historian of Latin America emphasized that the principal source of Mexico's riches was not her gold and silver mines, but her agriculture. Humboldt studied the historical origin, geographical distribution according to soil and climate, industrial use and economic importance of some 25 Mexican plant and animal products.

On his scientific journeys, Dr. Browne stated, Humboldt gathered material on the food habits, dress, language, folklore and primitive arts of the various Indian tribes in the Latin-American countries. He studied at first hand the manufacture by the Indians of the deadly poison, curare, as well as silver smelting, which reached its highest development among the Peruvians.

Science News Letter, January 8, 1944

PHYSIOLOGY

Wing-Beats Aid Research

► TINY INSECTS, no bigger than gnats, are expected to signal with their buzzing wing-beats what effects various drugs and other physiological stimuli have on their bodily reactions. Ingenious apparatus for getting ultra-high-speed motion pictures of their wing movements is described by Dr. Carroll M. Williams of Harvard Medical School and Dr. Leigh E. Chadwick of the University of Rochester. (*Science*, Dec. 10)

The insect chosen for this work is the fruit fly, *Drosophila*, favorite experimental animal of geneticists. It was chosen because it can be had in num-

bers at any time of year, because long breeding has brought out pedigreed strains with uniform behavior patterns, and because despite its minute size it has certain anatomical features favorable for the experiments.

Since the wing-beats are far too fast for the human eye to distinguish, they are recorded on motion picture film by means of the Edgerton stroboscopic lamp, which flashes on and off hundreds of thousands of times in a second. Photographs of such high-speed objects as bullets, whirling wheels and vibrating springs taken with this apparatus have

been familiar for several years.

Letting the insects fly free would of course take them out of range of the camera lens in an instant. They are therefore leashed by fastening them to very fine wires with a little paraffin—an exceedingly delicate operation that has to be performed under a low-power microscope with the little flies lightly etherized.

When set up for photographing each insect has a tiny platform under its feet. As long as its feet touch something solid, its wings remain stationary. But as soon as the platform is pulled down, even though it is still supported by the wire, the insect automatically sets its wings going. It does not seem to make any difference to the fruit fly that it isn't going anywhere; it continues its "in place" flight as long as the experimenter wants to take his high-speed pictures.

Science News Letter, January 8, 1944

METALLURGY

Improved Chloride Iron Plating Solution Devised

► AN IMPROVED chloride iron plating solution will probably have wide application in industry, the Electrochemical Society was told in a report by William B. Stoddard, Jr., of the Champion Paper and Fiber Co., Hamilton, Ohio. The solution contains chlorides of iron and manganese, and a wetting agent, a sodium salt of lauryl sulfate.

The particular chlorides used in the new solution are ferrous chloride and manganese chloride; the sodium salt used is known as gardinol WA. The gardinol relieves pitting to a remarkable extent without interfering with the ductility of the iron deposit. The addition of the manganese serves to decrease the grain size, and to broaden the physical operating conditions.

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