

STEEL SERVES THE NATION 1901-1951: The Fifty Year Story of United States Steel—Douglas A. Fisher—*United States Steel Corporation*, 227 p., illus., free to interested persons upon request to publisher, attention J. Carlisle MacDonald, 71 Broadway, New York 6, N. Y. An attractive volume illustrated in color photographs.

THE STORY OF PUEBLO POTTERY—H. M. Worthington and Arminta Neal—*Denver Museum of Natural History*, Museum Pictorial Number 2, 60 p., illus., paper, 56 cents. From the pottery of the Basketmakers made in about 400 A.D. to that of Indians who sell their wares along the roadside today.

TAXONOMY OF VASCULAR PLANTS—George H. M. Lawrence—*Macmillan*, 823 p., illus., \$7.95. A textbook which does not presuppose formal training in all allied botanical sciences and yet is suitable for advanced students.

TEXTBOOK OF BIOCHEMISTRY—Edward Staunton West and Wilbert R. Todd—*Macmillan*, 1345 p., illus., \$12.00. Methods for the use of radioactive isotopes and the results obtained from this research are stressed in this text.

THIS FASCINATING ANIMAL WORLD—Alan Devoe—*McGraw-Hill*, 303 p., illus., \$3.75. Written to answer the questions asked by a small boy about the animal kingdom. Do crocodiles weep crocodile tears? Does a centipede have a hundred legs? Can a fish drown?

TROPICAL NUTRITION AND DIETETICS—Lucius Nicholls—*Bailliere, Tindall and Cox (Williams and Wilkins)*, 3d ed., 476 p., illus., \$6.00. In addition to the fundamental principles of nutrition there is a wealth of material on the foods of the tropics.

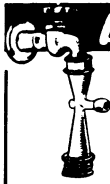
UNION BAY: The Life of a City Marsh—Harry W. Higman and Earl J. Larrison—*University of Washington Press*, 315 p., illus., \$4.00. Describing the teeming wildlife in the heart of the city of Seattle.

THE WILL TO LIVE—Arnold A. Hutschnecker—*Crowell*, 278 p., \$3.50. A physician writes understandably about the relation of the emotions to sickness and to health.

A YEAR BOOK OF RAILROAD INFORMATION, 1951—*Eastern Railroad Presidents Conference*, 96 p., illus., paper, free upon request to publisher, 143 Liberty Street, New York 6, N. Y. Facts and figures with comparisons with previous years.

Science News Letter, October 27, 1951

A thousand cubic feet of air at sea level weighs 81 pounds.



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METEOROLOGY

Turbulence Cause Probed

► **TURBULENCE** in the atmosphere which is sometimes so strong it breaks up planes, spilling the passengers into the air, may soon be licked through research being done at the U. S. Weather Bureau in Washington.

Turbulence, sometimes coming on when it is least expected, has cost lives, is a cause of much passenger discomfort on passenger airlines, and must be taken into account in designing commercial and military planes.

Studies at the Weather Bureau's National Airport office tend to indicate that much plane-jarring turbulence is caused by sudden changes in speed and direction of the wind, rather than by "air pockets."

The studies, not yet completed, are based on reports being sent in by military and commercial pilots as to the extent of the turbulence they have met, and the time, place and altitude at which it took place. In many cases, the reported turbulence, when plotted on maps, lines up remarkably with the position of the extremely fast and sharply defined wind current known as the "jet stream."

Research into turbulence is being conducted by Conrad P. Mook, research forecaster of the Washington forecast district, and is being sponsored jointly by the Weather Bureau and the National Advisory Committee for Aeronautics.

Jet streams are noted for the sharp changes between the speed of winds within the streams and the speed outside. Also there is much vertical shifting of the atmosphere associated with jet streams. When a plane enters the jet stream, it tries to adjust itself to the new and sudden wind conditions. This, according to one of the assumptions on which the studies are based, causes the plane to bounce violently.

The jet stream, which travels from west to east all around the world in the northern hemisphere, moves from north to south and back to north again from day to day. Sometimes there are no indications of its presence to the pilot until his plane meets it. However, jet streams are always plotted on weather maps.

Other types of change in wind speeds also cause turbulence, it is believed. In any case, researchers are concentrating first on the jet stream.

When the research is finished, it is hoped pilots can be provided with methods of avoiding areas of turbulence or, if this is not possible, of taking evasive action which will eliminate or minimize the effects of turbulence on the plane.

Science News Letter, October 27, 1951

Climbing roses taken off the trellis, laid on the ground and covered with leaves or straw, are less apt to be winter-killed.

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