

November 23, Dr. L. N. Ridenour, University of Pennsylvania, Artificial Radioactivities.

J. Schwinger, Columbia University, The  $[\sigma_1\sigma_2 - 3(\sigma_1r)(\sigma_2r)r^{-2}]J(r)$  terms and the quadrupole moment of  $H^2$ .

December 2, Professor Otto Struve, Yerkes Observatory, Interstellar Absorption and Emission.

December 14, Professor S. Chandrasekhar, Yerkes Observatory, Stellar Structure and Stellar Energy.

December 16, Dr. K. K. Darrow, Bell Telephone Laboratories, History of the Mesotron.

January 6, Dr. D. P. Johnson, U. S. Bureau of Standards, Mercurial Thermometers.

April 4, Professor I. I. Rabi, Columbia University, Experiments with Molecular Beams on Nuclear Magnetic Moments.

Dr. M. Goldhaber, University of Illinois, Slow Neutron Boron Reaction.

April 14, Professor L. Brillouin, Collège de France, Spins and Statistics of Elementary Particles.

May 12, Professor R. S. Mulliken, University of Chicago, Intensities of Electronic Transitions and the Color of Organic Compounds.

May 19, Professor A. Ellett, State University of Iowa, The  $D + D \rightarrow H_1 + H_2$  Reactions. Dependence of Angular Distribution and Cross Section upon Energy.

May 25, Professor A. H. Compton, University of Chicago, The Production and Disintegration of Mesotrons.

June 7, Dr. E. Feenberg, New York University, Canonical Transformations for Field Theories.

July 3, Dr. S. A. Korff, Bartol Foundation, Neutrons in Cosmic Radiation.

July 12, Professor Otto Struve and Dr. L. G. Henyey, Yerkes Observatory, Spectroscopic Evidence Regarding Interstellar Matter.

July 19, Professor T. W. Bonner, Rice Institute, Recent Work in Nuclear Physics at the Cavendish Laboratory.

#### AWARD OF THE JOHN FRITZ GOLD MEDAL

THE posthumous award of the 1940 John Fritz Gold Medal to Dr. Clarence Floyd Hirshfeld, who until his death on April 19 of this year was chief of research of the Detroit Edison Company, has been announced.

The medal, given annually for notable scientific or industrial achievement by a board composed of sixteen representatives of the four national societies of civil, mining and metallurgical, mechanical and electrical engineers, was given to Dr. Hirshfeld "for notable leadership through research and development in power generation and electric traction, and for being a great teacher and friend of men both young and old."

Modernization of the electric street-car completely from trolley wire to track is among the many advances in engineering credited to Dr. Hirshfeld. His career extended over thirty-six years and included teaching, writing and direction of research work. He was born in San Francisco on January 30, 1881. From 1903 to 1914 he taught at Sibley College of Cornell University, becoming professor of mechanical

engineering. In 1913 he organized for the Detroit Edison Company what is thought to be the first research department established and maintained by an electrical city supply company, where he became chief of research.

Dr. Hirshfeld was chief engineer of the Electric Railway Presidents' Conference Committee. He was the author of many books and articles on technical subjects, dealing principally with thermodynamics, steam power and problems of the transit industry. He was a member of the American Committee of the World Power Conference and of the U. S. National Committee of the International Electrotechnical Commission. He also served on the board of national councilors of the Purdue Research Foundation and on the advisory council of Yenching University. He was the first chairman of the Engineers' Council for Professional Development, and belonged to many scientific societies.

Dr. Hirshfeld was being considered as a candidate for the Fritz Medal at the time of his death. The award was, therefore, made posthumously.

#### RECENT DEATHS AND MEMORIALS

DR. LIVINGSTON FARRAND, president emeritus of Cornell University, who was from 1903 to 1914 professor of anthropology at Columbia University, died on November 8 at the age of seventy-two years.

DR. WILLIAM H. BROWN, lecturer in botany at the Johns Hopkins University, previously from 1924 to 1933 director of the Bureau of Science at Manila, P. I., in charge of scientific investigations for the Philippines, died on November 9. He was fifty-five years old.

DR. FREDERICK ADAMS WOODS, formerly lecturer in biology at the Massachusetts Institute of Technology, who since 1927 has lived in Rome, died on November 5 at the age of sixty-six years.

DR. ALFRED ALEXANDER DIXON, professor of physics at the North Carolina State College of Agriculture and Engineering, died on October 15 at the age of fifty-three years.

WILLIAM ARTHUR COWAN, who served for forty years as chemist of the National Lead Company, died on October 27 at the age of sixty-five years.

DR. L. O. ELLISOR, assistant entomologist at the Louisiana Agricultural Experiment Station, died on October 21 at the age of twenty-nine years. Bullion A. Osterberger, also assistant entomologist at the station, died on May 20.

DR. RALPH ALLEN SAMPSON, Astronomer-Royal for Scotland from 1910 to 1937, professor of astronomy at the University of Edinburgh, died on November 10 at the age of seventy-three years.