through breaks in which they could see the lighter cirrus floating at 30,000. Lieutenant B. H. Wyatt, who planned the observations, took his post in the comparatively clear layer at 13,000 feet, facing the shadow of the moon advancing from the north. To the right of its edge he saw a sharp red line extending along the horizon and a halo around the sun fifteen diameters away from it. During totality the recording thermometer at this altitude showed a rise of three and a half degrees Fahrenheit instead of the anticipated drop period. The humidity fell from sixty-three to fifty-two per cent. On the northeast quadrant of the sun a red plume projected more than half the sun's diameter. Lieutenant Wyatt was able to warn the astronomers three days in advance that September 10 would probably be cloudy, for he finds that when the upper air is fifteen degrees warmer than below, the coast of Southern California is in for fog. Ordinarily there is a fall of three degrees for each thousand feet ascended, but this is reversed when the hot air currents rising from the deserts of southeast California and Arizona moving seaward over-run the cold damp air from the ocean. Lieutenant Wyatt explained his theory of long range forecasting at the Los Angeles meeting of the American Association for the Advancement of Science.

FELLOWSHIPS IN COAL MINING PROBLEMS

THE six college graduates who have been appointed to the annual research fellowships at the Carnegie Institute of Technology in Pittsburgh have already begun their studies of a wide variety of coal-mining problems. A significant feature of the research program for the year of 1923–1924 lies in the fact that two of the fellowships were newly established in order to carry on studies specifically requested by two private firms in the coal industry, both companies having agreed to finance the research work.

Each of the research fellows will work during the current year under the supervision of an official attached to the Pittsburgh Station of the Bureau of Mines. In accordance with the policy of the past two years, the results of the studies will be published at the end of the year by the Advisory Board of coal operators and engineers in cooperation with the Cooperative Department of Mining Engineering at Carnegie Tech. The assignment of problems has been made as follows:

"The relation of acidity and oxygen to corrosion of metals and alloys in acid mine waters," Ralph E. Hall, physical chemist, U. S. Bureau of Mines, and Research Fellow W. W. Teague, University of Alabama.

"A study of efficiency in blasting coal," J. E. Tiffany, explosives testing engineer, U. S. Bureau of Mines, and Research Fellow C. W. Nelson, Carnegie Institute of Technology. (Requested and financed by the Hillman Coal and Coke Company.)

"A study of the practicability of gas masks and protection afforded by them in mine atmospheres which contain carbon monoxide, irritating vapors and smokes, and which support combustion in a flame safety lamp," G. S. McCaa, mine safety engineer, and S. H. Katz, associate physical chemist, U. S. Bureau of Mines, and Research Fellow A. L. Barth, Pennsylvania State College. (Requested and financed by the Mine Safety Appliances Company.)

"Correlation of coal beds in the Allegheny Formation of Western Pennsylvania and Eastern Ohio," Reinhardt Thiessen, research chemist, U. S. Bureau of Mines, and Research Fellow F. D. Wilson, University of Oregon.

"Effect of wheel diameter and other variables in friction losses in mine-car running-gear," Mayo D. Hersey, physicist, U. S. Bureau of Mines, and Research Fellow Howard E. Wetzel, Pennsylvania State College.

"The time-rate of combustion of coal-dust particles of definite sizes," C. M. Bouton, associate research chemist, U. S. Bureau of Mines, and Research Fellow J. M. Pratt, Swarthmore College.

THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

AT the first meeting of the board of directors of the American Institute of Electrical Engineers for the administrative year beginning August 1, held in New York on August 2, President Ryan announced the following appointments as chairmen of committees:

STANDING COMMITTEES

Board of Examiners—H. H. Norris, New York.

Code of Principles of Professional Conduct—John W. Lieb, New York.

Coordination of Institute Activities—W. I. Slichter, New York.

Edison Medal—Edward D. Adams, New York.

Executive—Harris J. Ryan, Stanford University, Cal.

Finance—G. L. Knight, Brooklyn, N. Y.

Headquarters—E. B. Craft, New York.

Law—H. H. Barnes, Jr., New York.

Meetings and Papers—L. W. W. Morrow, New York.

Membership—M. E. Skinner, Pittsburgh.

Publication—Donald McNicol, New York.

Public Policy—H. W. Buck, New York.

Research—J. B. Whitehead, Baltimore.

Safety Codes—H. B. Gear, Chicago.

Sections—A. W. Berresford, Milwaukee.

Student Branches—C. E. Magnusson, Seattle.

Standards—H. S. Osborne, New York.

TECHNICAL COMMITTEES

Educational—W. E. Wickenden, New York.

Electrical Machinery—H. M. Hobart, Schenectady, N. Y.

Electrochemistry and Electrometallurgy—J. L. Yardley, Pittsburgh.

Electrophysics—F. W. Peek, Jr., Pittsfield, Mass.

Industrial and Domestic Power—H. D. James, Pittsburgh.