sions will be of broad international character. The first day will be devoted largely to the official welcome of delegates. It is expected that President Coolidge will welcome to America the representatives of the 37 governments which are sending delegates in response to the invitation of our State Department. In the event of his absence, Charles E. Hughes, secretary of state, will speak. It is planned to have the address of welcome responded to by J. Maenhaut, of Brussels, Belgium, president of the International Dairy Federation. Other speakers scheduled for the Washington sessions include: H. E. Van Norman, president of the World's Dairy Congress Association; Herbert Hoover, secretary of commerce; F. O. Lowden, ex-governor of Illinois, and president of the Holstein-Friesian Association of America; Charles Porcher, editor of *Le Lait*, of Lyon, France; L. G. Michaels, representing the International Institute of Agriculture, Rome, Italy; J. A. Ruddick, Dairy and Cold Storage Commissioner, Agricultural Department of Canada; Henry C. Wallace, secretary of agriculture for the United States, and J. D. Miller, president of the National Federation of Milk Producers and vice-president and general counsel of the Dairymen's League, Inc., Utica, New York.

The congress delegates will spend October 4 at Philadelphia as guests of the National Dairy Council. After their welcome by Mayor J. H. Moore, they will spend the day in observing the methods employed by the council in promoting a wiser use of milk. At the session, Dr. Clyde L. King, secretary of the Commonwealth of Pennsylvania, who has for several years arbitrated milk disputes at Philadelphia and at Baltimore, Md., will preside, and the speakers will include M. D. Munn, president of the National Dairy Council. Gifford Pinchot, governor of Pennsylvania, will address the delegates at a banquet in the evening.

The delegates will hold their meeting from October 5 to 10 in cooperation with the seventeenth annual National Dairy Exposition at Syracuse, New York. There, several sessions will be held simultaneously each morning and visitors may choose those dealing with the topics of particular interest to them. The topics, from day to day, will be as follows:

October 5—(1) Evaporated, condensed and dried milk in the dietary; (2) business organization; (3) cheese production; (4) extension methods in dairy education; (5) dairy publications.

October 6—(1) The nutritional value of milk; (2) ice cream problems; (3) improving and protecting the milk supply; (4) methods of dairy instruction; (5) dairy publications.

October 8—(1) Educating the public in the value of milk; (2) cooperative milk marketing; (3) control of quality in manufactured products; (4) transportation and bulk handling; (5) milk in the diet.

October 9—(1) City milk problems; (2) cooperative marketing of manufactured products; (3) butter manufacture; (4) milk secretion and the nutrition of dairy cows; (5) chemistry and bacteriology of milk.

October 10—(1) Equipment, construction and standardization; (2) condensed milk and milk products; (3) the control of the quality of milk; (4) breeding; (5) diseases of dairy cattle.

Among the prominent speakers will be:

A. Peter, director of the Government Dairy School, at Rutti, Zollikofen, professor of dairying in the Federal Technical High School, at Zurich, Switzerland; Dr. Constantino Gorini, professor of bacteriology and hygiene, Agricultural High School, Milan, and at the University of Pavia, Italy; Dr. R. H. Leitch, professor of dairying and chief of the dairy research department, West of Scotland Agricultural College; J. H. Blackshaw, O.B.E., dairy commissioner, Ministry of Agriculture and Fisheries, England; Dr. A. J. Swaving, inspector of dairying, Department of Agriculture, Holland; Dr. L. B. Mendel, physiological chemist of Yale University and editor of *The Journal of Biological Chemistry;* Dr. H. C. Sherman, professor of food chemistry, Columbia University; Dr. E. V. McCollum, professor of chemical hygiene, Johns Hopkins University; Dr. Willibald Winkler, professor of dairying industry and bacteriology, Hochschule fuer Bodenkulture, Vienna; Miss Helen G. Campbell, of the Dairy and Cold Storage Commission, Department of Agriculture, Canada; Dr. C. Orla-Jensen, professor in veterinary sciences and bacteriology, Royal Agricultural and Veterinary College of Denmark; Dr. Haakon Isaachsen, professor of animal nutrition, Royal Agricultural College of Norway; Dr. Osakar Laxa, professor and director, Bacteriological Institute, Slovak Polytechnic School, Prague; Professor A. Miyawaki, of the Hokkaido Imperial University, Sapporo; J. H. Maggs, chairman of the directors, United Dairies, Ltd., London; J. L. Kraft, the American cheese distributor; E. C. Sutton, the American ice cream manufacturer; John Drysdale, of the Scottish Agricultural Society; J. Hill, manager of the Belfast (Ireland) Cooperative Society.

THE ECLIPSED ECLIPSE

DR. E. E. SLOSSON, Science Service, reports from San Diego: Although the eclipse was eclipsed by clouds, a lot has been learned about how to take it. I have just seen something that has never been seen before—motion pictures of a solar eclipse. These are still in the negative stage and on account of low visibility do not amount to much as movies, but they demonstrate that the new methods of aerial observation employed by the aircraft squadron at San Diego under the command of Captain A. W. Marshall will be a valuable aid to both astronomy and meteorology. No wonder the telescope on Point Loma could not penetrate the clouds, for three successive veils interposed between them and the sun: First, stratus clouds from 500 feet to 4,000; next a fairly clear stretch up to 17,000, where the fliers entered dense alto-cumulus,

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.