The station, which has been in receipt of government grants since 1911, has been organized so as to bring it into touch with modern conditions of agriculture, on the one side, and with scientific advance, on the other. Its activities range from oil cultivation to fertilizer investigations, the effect of manures on crops, and plant diseases. As the fundamental basis of agriculture is the production of crops, the work at Rothamsted is mainly concerned with this, and the natural subdivisions of the investigation are soil cultivation, the feeding of crops, and the maintenance of healthy conditions of plant growth. Cultivation has been reduced almost to a fine art, but as costs are the dominating factor in practical farming experiments are continually carried out with the object of discovering means of reducing expense. For instance, the power needed for ploughing can be reduced by suitable treatment of the land. Chalking heavy soil may effect a saving of as much as 15 per cent. in the power used, while farmyard manure, coarse ashes and even artificial manure can all effect similar economies.

As more than thirty artificial manures are now available to the farmer, and as their effect varies on different farms and with the weather, there is an obvious need for some general rules by which farmers may be guided. The report, having stated that a risk must always attach to crop yields, adds that it is hoped that they may eventually become calculable and therefore insurable. The difficulties of the work are great, but they are being steadily overcome, though at present the effect of differences in soil type and climatic conditions are not known with certitude for various parts of the country.

The complete report may be obtained from the Secretary of the Rothamsted Experimental Station, Harpenden.

SYMPOSIUM ON HEAT TRANSFER

A SYMPOSIUM on heat transfer will be held at the spring meeting of the American Chemical Society, under the auspices of the Division of Industrial and Engineering Chemistry.

While the final program is not available, a number of papers are in preparation by writers well versed in various applications of heat transference. These papers may be classified as follows:

Heat Losses by Radiation plus Convection, through Bare and Insulated Surfaces.
- a. From Pipes.
- b. From Furnace Walls.
- c. From Miscellaneous Shapes.

Heating or Cooling of Non-Condensable Cases.
- a. The Warming of Air in Hot-blast Heaters.

Heating or Cooling of Liquids Flowing Inside Pipes.
- a. Water.
- b. Oils.

Condensation.
- a. In Surface Condensers and Water-heaters.

Evaporation.
- a. The Analysis of Certain Comparative Tests on Evaporators.
- b. Heat Transfer in Enameled Apparatus.

Miscellaneous Topics.
- a. "A Heat Meter."
- b. The Determination of Air in Steam, and the Importance of this Factor in Heat Transmission.

In order that those interested may have ample time prior to the meeting to prepare discussion of these papers, it has been decided to issue advance copies, or preprints, bound under one cover. To this end it is necessary that the complete manuscript be in the hands of the chairman not later than January 15, 1924.

Professor W. H. McAdams, of the Massachusetts Institute of Technology, is chairman of this symposium. It is of such an important nature that two half days will be devoted to the presentation and discussion of papers.

Should preprints be issued, a copy will be sent to each paid member of the division.

ERLE M. BILLINGS,
Secretary

THE SEISMOLOGICAL SOCIETY OF AMERICA

AT a meeting of the board of directors of the Seismological Society of America held in San Francisco on October 19 the following officers were elected for the year 1923–24: Bailey Willis, of Stanford University, *president;* W. W. Campbell, University of California, *first vice-president;* R. W. Sayles, Harvard University, *second vice-president;* H. O. Wood, Carnegie Institution, *third vice-president;* S. D. Townley, Stanford University, *secretary-treasurer.*

During the past year the Seismological Society published a large Fault Map of California on the scale of eight miles to the inch. This has been distributed to the members of the society and subscribers to the quarterly *Bulletin* published by the society, and the remaining copies are now on sale. The sale of the maps is in charge of the secretary of the society, Stanford University, California. When mounted the map is 6 x 7 feet in size. The base of the map was prepared by the U. S. Geological Survey and all known active and dead faults have been drawn on it from the best information available. The map also contains the offshore contour lines from San Diego to San Francisco. These were determined by the Hydrographic Office of the U. S. Navy Department, in the fall of 1922, by the use of the Sonic method. The data of the fault lines were compiled by Bailey Willis and H. O. Wood and the publication of the map has

been made possible through the cooperation of various institutions and individuals, including the U. S. Hydrograph Office, the U. S. Navy Department, the U. S. Geological Survey, the Carnegie Institution of Washington, the University of California, Stanford University and the advisory committee on seismology of the Carnegie Institution.

During the present year the officers of the society and the editors of the *Bulletin* expect to direct their efforts toward an educational campaign for the erection of earthquake-proof buildings.

STUDY OF ENGINEERING EDUCATION

THE Society for the Promotion of Engineering Education recently received from the Carnegie Corporation a communication stating that the corporation has set aside the sum of $108,000 "for the purpose of making possible a study of engineering education" under the direction of the society. The letter of President F. P. Keppel, of the Carnegie Corporation, addressed to Professor C. F. Scott, chairman of the society's board of investigation and coordination, announces that $24,000 is made available "during the present fiscal year and $12,000 during the fiscal year 1924, with the understanding that if, in the judgment of the executive committee, substantial progress shall have been made in this study by January 1, 1925, the balance of the $108,000 will be made available to the society as follows: $24,000 additional during the fiscal year 1924 and $48,000 during the fiscal year 1925."

William E. Wickenden, assistant vice-president of the American Telephone and Telegraph Company, has been appointed director of the investigation.

The Society for the Promotion of Engineering Education, which has more than 1,500 individual members and 86 institutional members, voted at its annual meeting in June, 1922, to expand its service to technical schools by a study of the training of engineers. A committee was appointed "to formulate an answer to the question, What can the society do in a comprehensive way to develop, broaden and enrich engineering education?" The report of this committee led to the organization in September, 1922, of a board of investigation and coordination, composed of Charles F. Scott, then president of the society; J. H. Dunlap, M. E. Cooley, F. W. McNair and D. C. Jackson. President Scott addressed a letter in October, 1922, to deans and presidents of engineering schools throughout the United States, "asking counsel and suggestions from the engineering schools for the guidance of the board." Abstracts from replies to this letter were printed in the November, 1922, issue of *Engineering Education,* the bulletin of the society. At the 1923 annual meeting last June, the society pledged "the support of its individual members to the proposed program of investigation of engineering education."

THE ROLLIN D. SALISBURY MEMORIAL

THE University of Chicago announces that a committee, consisting of Thomas E. Donnelley, chairman, from the board of trustees; Professor H. H. Barrows, chairman of the department of geography; Professor E. S. Bastin, chairman of the department of geology, and two other persons not members of the Board of Trustees or of the University faculties, has been appointed to raise a fund of $100,000 to $150,000 to be known as the Rollin D. Salisbury Memorial Fund for the promotion of research in the fields of geology and geography.

The income from the fund is to be used for the following specific classes of projects: (*a*) Field research expeditions; (*b*) office and laboratory researches; (*c*) research fellowship grants to graduate students of special promise for the conduct of specific researches; (*d*) aid in the publication of research results when such publication can not be otherwise arranged, and (*e*) other projects that come appropriately under the caption of promotion of research.

Professor Salisbury, who for twenty years was dean of the Ogden Graduate School of Science, head of the department of geography for sixteen years, and head of the department of geology at the time of his death in 1922, left a bequest to the university of a large fund for the endowment of scientific fellowships. Dean Salisbury's influence was widely extended through graduates in geology and geography who have gone to important positions in many educational institutions.

SCIENTIFIC NOTES AND NEWS

THE Nobel prize in physics has been awarded to Dr. Robert Andrews Millikan, director of the Norman Bridge Laboratory of Physics and chairman of the Administrative Council of the California Institute of Technology. The only previous award of this prize in America was to Professor A. A. Michelson, of the University of Chicago, in 1907.

THE Josiah Willard Gibbs lectures, recently established by the American Mathematical Society, were to have been inaugurated this winter with an address on the Einstein Theory by the late Charles Proteus Steinmetz.

DR. STEPHEN MOULTON BABCOCK, known as the discoverer of the Babcock test for fat in milk and for research on milk, celebrated his eightieth birthday at his home in Madison, Wis., on October 22. In 1901 a medal was given to Dr. Babcock by the state of Wisconsin, bearing the inscription "In recognition of the great value to the people of this state and to the whole world of the invention and discoveries of Professor Stephen Moulton Babcock, of the University of Wisconsin, and his unselfish dedication of these in-