

motion of Engineering Education, a summer session for teachers of chemical engineering was held at the University of Michigan from June 24 to July 9. Seventy men, representing 47 colleges located in 25 states, from Washington and California on the west to Massachusetts and North Carolina on the east, and from Louisiana on the south to Minnesota and Montana on the north, were registered for the meeting. In addition to visitors, many of whom stopped over for a day or more, a large staff of distinguished lecturers was in attendance.

Three main series of lectures were delivered, covering the unit operations of chemical engineering, recent advances in chemical technology, and methods of conducting laboratory courses in the unit operations. The speakers included:

H. A. Curtis, Vacuum Oil Co.; W. K. Lewis, Massachusetts Institute of Technology; R. E. Wilson, Standard Oil Co. of Indiana; W. L. Badger, University of Michigan; R. S. Tour, University of Cincinnati; Zay Jeffries, The Aluminum Co. of America; H. L. Olin, University of Iowa; J. C. Olsen, Brooklyn Polytechnic Institute; Clifford Paige, Brooklyn Union Gas Co.; A. V. H. Mory, Bakelite Co.; O. R. Sweeney, Iowa State College; W. L. Beuschlein, University of Washington; C. C. Furnas, Yale University; L. V. Burton, *Food Industries*; S. D. Kirkpatrick, *Chemical and Metallurgical Engineering*; E. S. Rothrock, Louisiana Chemical Co.; George Oenslager, B. F. Goodrich Co.; A. W. Hixson, Columbia University; G. H. Montillon, University of Minnesota; A. Anable, The Dorr Co.; A. K. Brodie, Procter and Gamble; R. A. Hayward, Kalamazoo Vegetable Parchment Co.; B. F. Dodge, Yale University; G. A. Bole, Ohio State University; C. O. Brown, Chemical Engineering Corp.; G. G. Brown, University of Michigan; E. C. Sullivan, Corning Glass Co.; H. C. Hottel, Massachusetts Institute of Technology; W. H. McAdams, Massachusetts Institute of Technology; J. C. Brier, University of Michigan.

The members of the session, lecturers and visitors were housed in Jordan Hall, one of the university dormitories. This arrangement facilitated interchange of ideas, and discussions held informally over the dinner table and in the parlors.

A social committee provided many opportunities for exercise and play. Golf, tennis, swimming, canoeing, hiking, baseball and bridge afforded relaxation in the afternoon. A smoker, at which an informal talk was given by Professor H. H. Bartlett, of the department of botany, on his experiences while working on the rubber plantations of the Dutch Indies; a bridge party; a tea, and a picnic on the Fourth of July with baseball and horseshoe pitching, provided additional entertainment. There was a trip through the River Rouge works of the Ford Motor Co., and a banquet, at which L. R. Newburgh, re-

search professor of medicine, spoke on "The Human Body as an Internal Combustion Engine."

The summer session was under the general direction of H. P. Hammond, representing the Society for the Promotion of Engineering Education. The local director was A. H. White, and the secretary, W. L. McCabe. Generous financial support was given by the University of Michigan and by the Chemical Foundation, Inc.

THE SCHENECTADY MEETING OF THE AMERICAN PHYSICAL SOCIETY

THE one hundred and seventy-second meeting of the American Physical Society will be held at Schenectady, New York, on September 10, 11 and 12. Registration will be at the Research Laboratory of the General Electric Company throughout the first morning. At 10 A. M. a meeting for ten-minute contributed papers will be held at Rice Hall, followed by a luncheon for members at the Works Restaurant and an inspection trip through the laboratories. The annual dinner will be held in the evening at the Mohawk Golf Club. A meeting to commemorate the one hundredth anniversary of the notable experiments of Michael Faraday and Joseph Henry on electromagnetic induction will be held at 9 A. M. on Friday, when a paper on Faraday written by Sir William Bragg will be read by Professor John Zeleny. A paper on Joseph Henry will be presented by Professor W. F. Magie. After the memorial meeting informal group discussions will be held. The luncheon at Union College will be given at one o'clock. In the afternoon a trip will be taken to Lake George. This will be by special train to the lake and will include a three hour sail with dinner on board the steamer, provided a sufficient number of members wish to attend. On Saturday morning there will be a symposium on magnetism, followed by informal group discussions as on Friday. One of these groups is planning for a rather intensive discussion of present-day experimental and theoretical aspects of magnetism for those particularly interested in this field. This group will not meet on Friday. Saturday afternoon will be devoted to sports. Arrangements will be made for guest cards at the various golf clubs and tennis courts will be available.

THE FILTERABILITY OF BACTERIA

THE James A. Patten Lecture was given at Northwestern University on July 22 by Professor Arthur Isaac Kendall, of the Department of Research Bacteriology, Northwestern University Medical School, Chicago. The subject was "Observations upon the Filterability of Bacteria, including a Filterable Organism Obtained from Cases of Influenza."

Professor Kendall reported that a heat sterilizable protein medium (K medium) had been prepared for the cultivation of bacteria. Organisms, some in the filterable state, had been grown from the blood of cases of influenza, common cold, measles (in one instance thirty hours before the appearance of the rash), rheumatic fever, arthritis and endocarditis. Also, Staphylococci had been obtained in non-filterable states from Staphylococcus bacteriophage and Besredka (Staphylococcus) antiviral. Laboratory cultures of *B. typhosus*, *B. coli*, Staphylococci and Strep-

tococci, grown in K medium, had been rendered filterable through Berkefeld filters. After filtration, these organisms, by suitable procedure, had been regained in non-filterable form.

The lecturer reported that many bacteria pathogenic for, or parasitic upon man and lower animals may and do exist in two states, filterable and non-filterable. A chemical explanation for the existence of these two states, filterable and non-filterable, was proffered, and relation of these two states to microbial existence and infection was indicated.

SCIENTIFIC NOTES AND NEWS

DR. WILLIAM H. HOWELL, who recently retired as director of the Johns Hopkins University School of Hygiene and Public Health, has accepted the chairmanship of the medical section of the National Research Council. Dr. Howell has also been elected chairman of the executive committee of Science Service.

DR. JAMES T. JARDINE, director of the Oregon Experiment Station at Corvallis, has been appointed director of the Bureau of Experiment Stations of the U. S. Department of Agriculture. He succeeds Dr. E. W. Allen, who died more than a year ago. Mr. Jardine has also been appointed assistant director of scientific work in the department. He is a brother of Dr. William M. Jardine, formerly Secretary of Agriculture, who is now minister to Egypt.

At the commencement of Oberlin College, the doctorate of science was conferred on Dr. Charles E. St. John, astronomer of the Mt. Wilson Observatory of the Carnegie Institution.

THE University of Liverpool will confer in December the degree of doctor of laws on Dr. C. G. Barkla, professor of natural science in the University of Edinburgh.

DR. CORNELIUS BETTEN, since 1923 director of resident instruction, has been named acting dean and director of the State Colleges of Agriculture and Home Economics at Cornell University to fill the vacancy created by the promotion of Dean Mann to the office of provost of the university. Dean Mann will take up his new duties on August 1, and Dr. Betten will serve until a permanent dean is chosen.

DR. F. W. DEWOLF, formerly state geologist of Illinois, has been appointed head of the department of geology at the University of Illinois, to succeed Dr. W. S. Bayley, who has retired.

DR. ROBERT TAIT MCKENZIE, professor of physical therapy and physical education in the University of

Pennsylvania School of Medicine, has been appointed research professor of physical education.

DR. ALFRED R. RADCLIFFE-BROWN, the British ethnologist, now of the University of Sydney, Australia, has been appointed professor in the department of anthropology of the University of Chicago. He will give courses on "Primitive Society," "Primitive Religions," "Ethnology of Africa," "The Australian Tribes," "Family, Kin and Clan," and "Economic and Political Institutions of Primitive Peoples."

DR. PAUL A. WARREN, professor of botany at the College of William and Mary, has been appointed professor of botany at Tufts College.

PROMOTIONS to full professorships at the University of Chicago include: A. S. Romer, geology; R. S. Mulliken, physics; B. H. Willier, zoology; and H. E. Hayward, M. C. Coulter and J. M. Beal, botany.

DR. ALLAN C. G. MITCHELL, who has been fellow of the Bartol Research Foundation of the Franklin Institute for the past three years, has been appointed assistant professor of physics at New York University.

DR. C. W. STILES, of the U. S. Public Health Service, who will go on the retired list on August 1 after forty years of active service, has altered the plans recently announced in SCIENCE. His permanent address in the future will be Washington, D. C.; he will be in Winter Park, Florida, during the winter months.

PROFESSOR F. EASTON CARR, head of the astronomy department of Oberlin College, will spend his sabbatical year at Mt. Wilson Observatory in California.

DR. WILLIAM MANN, director of the National Zoological Park at Washington, D. C., sailed on July 22 for Georgetown, British Guiana, to obtain specimens for the Guiana group of the park. He was accompanied by Mrs. Mann and Frank Lowe, assistant head keeper at the zoo, who will aid in capturing and caring for the animals obtained.