Lyon, chief metallurgist of the Bureau of Mines, are: specific heats at different temperatures, refractories, expanding of refractories, and spalling of refractories.

AT the annual meeting of the State Federation of Pennsylvania Women on October 12, at which more than 600 women were present, the following resolution, with possibly fifteen or twenty dissenting votes, was adopted·

Whereas, It has been conclusively demonstrated that the health and happiness of hundreds of thousands of animals, and of many millions of human beings, have been promoted and their lives prolonged by the application of knowledge obtained through scientific experiments on animals; and

Whereas, These researches are conferring a wonderful boon upon the starving nations by constantly adding greatly to the food supply of the world; therefore be it

Resolved, That the State Federation of Pennsylvania Women, assembled in annual general convention in the city of Reading, Pennsylvania, on the twelfth day of October, 1922, hereby put on record their gratitude to medical science for past discoveries so profoundly beneficial to human beings and to animals, and we believe that such beneficent researches should be continued and encouraged.

THE State Department has issued invitations to one hundred and fifty countries to take part in an international congress on dairying to be held in this country in October, 1923. The program, in addition to topics of interest to the industry at large, will include recent advances in the sciences related to dairying and particularly the significance of milk and milk products in nutrition. The chairman of the program committee is L. A. Rogers, Dairy Division, United States Department of Agriculture, and the chairmen of the four sub-committees are: C. H. Eckles, University of Minnesota, St. Paul, Minnesota; O. F. Hunziker, Blue Valley Creamery Company, Chicago, Illinois; Fred Rasmussen, secretary of agriculture, Harrisburg, Pa.; H. C. Sherman, Columbia University, New York.

AT the meeting of the League of Nations committee which was held at Geneva, it was decided that arrangements should be made to hold an international congress of the universities of all countries. The subcommittee charged with the arrangement of this congress was instructed to prepare a report on the following topics: The exchange of professors and of students; the equivalent values of university courses and degrees; the institution of international scholarships, of international vacation courses, and of a central office for information on university matters.

UNIVERSITY AND EDUCATIONAL NOTES

FOSTER HALL, the chemical laboratory of the University of Buffalo, designed especially to meet the needs of the electro-chemical, hydro-electric, dye and steel industries on the Niagara frontier, was dedicated on October 27 in connection with the installation of Dr. Samuel P. Capen, of Washington, as chancellor of the university. Dr. Edgar F. Smith, president of the American Chemical Society, and Dr. Edwin E. Slosson, of Science Service, were speakers at the ceremony. The laboratory, erected at a cost of a million dollars, is the gift of O. E. Foster, of Buffalo.

DR. JOHN STEWART, dean of the faculty of medicine of Dalhousie University, Halifax, laid the cornerstone of the new medical science building for Dalhousie University on September 29.

AT the meeting of the Yale Corporation held on October 14, Professor Richard Swann Lull was appointed director of the Peabody Museum of Natural History for a term of five years. Professor William Ebenezer Ford was elected curator of mineralogy in the museum, to succeed Professor Edward Salisbury Dana, who retires from the curatorship after a service of nearly fifty years. The corporation passed a vote in appreciation of Professor Dana's services.

DR. G. R. LYMAN, plant pathologist in charge of the Plant Disease Survey of the U. S. Department of Agriculture, has been appointed dean of the College of Agriculture of West Virginia University, where he will have supervision of the three divisions of agricultural work of that institution, which include the resident instruction in the College of Agriculture, the work of the Agricultural Experiment Station, and of the Extension Service.

Dr. Lyman will enter upon his new duties on January 1.

PROFESSOR LEROY PATTON, formerly of Muskingum College, Ohio, has been appointed associate geologist of the Bureau of Economic Geology in the University of Texas. Dr. E. H. Sellards, who has been with this bureau several years, has been promoted to be chief geologist, Professor T. L. Bailey, from the University of California, has accepted the position of assistant geologist, vacated by Professor W. S. Adkins a year ago, and Miss Dorothy Shoaf, from the University of Chicago, has been appointed curator of the collections.

DR. J. L. SHELLSHEAR, of Sydney, Australia, has been appointed to the chair of anatomy in the new College of Medicine of Hongkong University.

DISCUSSION AND CORRESPONDENCE

NOTE ON THE DISSOCIATION OF CARBON IN THE INTENSIVE ARC

SOME two years ago while experimenting with the extremely powerful arcs used in the Sperry search lights we noted the singular color and peculiar spectrum in the "negative tongue" which appears at currents of 100 amperes and upwards. It develops rather suddenly as a core of the negative flame, suggesting the inner cone of a blast lamp save in color, which is pale purplish.

The spectroscope disclosed a small number of clearly marked lines superimposed on fainter hazy and complex bands, due to the surrounding arc flame. Examining the tongue spectrum of the lines from time to time, we found substantially the same spectrum from various makes of unmineralized carbons, foreign and domestic. Finally, using a five inch achromatic condenser to throw the image of the tongue on a ground glass we examined it in detail with a direct vision spectroscope equipped with a scale, comparison prism and holder for spectrum tubes.

We thus found as characteristic of the tongue spectrum, some fifteen well defined lines. Of these, seven were good coincidences with the most conspicuous of the well known helium lines, and two others with Hα and Hβ.

The He lines were wl: 7066, 6678, 5876, 5048, 5016, 4922, 4388.

Five of these lines belong to the single line, so-called Parhelium series, being the brightest lines of the principal and second subordinate series, and the three of the first subordinate series.

Of the doublet system the chief lines of the sharp and diffuse series respectively appear, not very brilliantly, while we have not yet detected any of the enhanced series. All indications point to the dissociation of a certain proportion of carbon nuclei with the consequent appearance of He due to the immense concentration of energy in this 150 ampere arc. The H lines may be due to water-vapor absorbed by the soft carbon core, or perhaps to further dissociation. We are now setting up a concave grating spectrograph for the closer examination of the tongue spectrum under much higher dispersion, and hence with a less obtrusive background. We hope that the evidently very high ionization power here manifested may lead us to interesting developments with still other elements.

Our thanks are due to the courtesy of Mr. Sperry in extending the great facilities of his laboratory.

LOUIS BELL
P. R. BASSETT

THE DETERMINATION OF FAT IN CREAM

TO THE EDITOR OF SCIENCE: The authors (E. G. Mahin and R. H. Carr) of a paper on "Errors in the Determination of Fat in Cream," read at the Birmingham meeting of the American Chemical Society, have experienced considerable surprise at the tone of a letter by H. W. Gregory, appearing in the issue of SCIENCE for September 15, 1922, in which he discusses our work upon this subject. Professor Gregory has based his criticisms upon a mere advance abstract, containing no details of experiment or reasoning, and without adequate knowledge of the real points at issue.

In the original paper by Mahin and Carr (not yet published) we have simply called attention to a hitherto unsuspected error in the almost universally used "glymol" method for making fat readings in the Babcock tests on