first week was spent at Camp Hancock, Augusta, Ga., and the second at Camp Sevier, Greenville, S. C. The plan of giving lectures in the camps on geographical and travel subjects was undertaken at the instance of the committee on geology and geography of the National Research Council, of which Professor W. M. Davis, of Harvard University, is chairman.

DR. D. S. JENINGS has been appointed to the staff of the Experiment Station of the Utah Agricultural College as expert in charge of an extensive soil survey to be made of the state of Utah. This survey will be conducted in consultation with the station departments of agronomy, geology, horticulture, irrigation and drainage, botany, chemistry and bacteriology, and farm management.

PROFESSOR A. S. HITCHCOCK, Bureau of Plant Industry, spent the month of August studying and collecting grasses in Arkansas, Oklahoma, Texas and Colorado.

DR. IRA E. LEE, instructor of chemistry at the University of Rochester, has become a research chemist with E. I. du Pont de Nemours & Co., Wilmington, Del.

DR. ALFRED R. SCHULTZ has presented his resignation from the U. S. Geological Survey, to become manager of a hydro-electric power and milling company.

MR. JOHN A. COYE has resigned his position as chief chemist with the Engineering Experiment Station of the Iowa State College, Ames, Iowa, to accept the position of assistant chemist with the General Chemical Company at their Laurel Hill Works.

PROFESSOR JOJI SAKURAI, who has arrived in London from Japan, has brought with him a contribution from Japan to the Ramsay Memorial Fund, amounting to £487 9s. 2d., which he has handed over to the honorable treasurers, Lord Glenconner and Professor Collie.

UNIVERSITY AND EDUCATIONAL NEWS

THE movement for reform in the management of the universities in Argentina for which the professors and students of the universities have been keeping up an agitation, has culminated in a bill presented by the president of the republic to congress for deliberation and action. The bill coincides in general with the demands of those contending for reforms. It provides that the dean shall be elected by the professors, he shall serve four years and can not succeed himself. The election will be by a council of seven members, one representing the students, one the alumni and the others the professors.

AT Harvard University, Dr. Wallace Clement Sabine has been appointed acting director of the Jefferson Physical Laboratory, and Dr. Herbert Sidney Langfield, acting director of the Psychological Laboratory.

PROFESSOR LOUIS DE L. HARWOOD, Montreal, has been appointed dean of the medical department of Laval University.

F. C. WERKENTHIN, assistant professor of biology in New Mexico College of Agriculture and Mechanic Arts, has been elected to the associate professorship of botany in New Hampshire Agricultural College and will assume his new duties with the opening of college in September.

AT Cornell University Dr. R. C. Gibbs has been promoted to be professor of physics; Dr. H. E. Howe, formerly professor of physics at Randolph-Macon College, has been appointed assistant professor.

DR. H. L. WALSTER, of the college of agriculture of the University of Wisconsin, Madison, Wisconsin, has returned to his position as associate professor of soils in the university after having spent a year's leave of absence at the University of Chicago, where he received the Ph.D. degree in plant physiology and plant ecology.

THE following changes in the faculty of the department of agriculture in the University of Minnesota have been made recently: H. H. Kildee has resigned as chief of the dairy husbandry division in order to take charge of animal husbandry work at Iowa State College,

and has been succeeded by C. H. Eckles, formerly of the University of Missouri; J. S. Montgomery and T. G. Paterson have resigned as associate professors of animal husbandry, and R. C. Ashby as assistant professor of animal husbandry, to enter commercial work; W. H. Peters, formerly head of animal husbandry of the North Dakota Experiment Station, has been appointed professor of animal husbandry; P. A. Anderson has been promoted from instructor to assistant professor of animal husbandry; J. C. Cort, formerly of Iowa State College, has been appointed assistant professor of dairying.

DISCUSSION AND CORRESPONDENCE

RED RAYS AND PHOTOELECTRIC EFFECT

I WISH to call attention to an error which should be corrected as it is being repeated and found its way into such standard texts as Hughe's "Photoelectricity" (Cambridge University Press). Red light does *not* give a photoelectric effect with phosphorescent calcium sulphide, as the effect stops at the wave-length of about 4,200 Ångström, as was shown by the writer.[1] This result was later confirmed at the University of Berlin. The result is of considerable theoretical importance because the theory of the photoelectric effect which takes into account the necessity of a critical energy content before the electrons can be shot off, shows that there will be a wave-length for each element beyond which no photoelectric effect will be produced. The element which gives the photoelectric effect in phosphorescent calcium sulphide is not known, but has been supposed by the writer to be sulphur as it is photoelectric for ultra-violet light and it was shown experimentally to give a photoelectric effect for wave-lengths *longer* than 3,200 Ångström. This hypothesis could be established by showing that the photoelectric effect of sulphur ended at the same point as was shown for phosphorescent calcium sulphide.

When the writer began an investigation of the photoelectric effect of phosphorescent material in 1910 at Yale University, it was *supposed* that the result obtained in 1909 by Lenard and Saeland at the University of Heidelberg was correct. However, it was found that the photoelectric effect of phosphorescent calcium stopped at about 4,200 Ång., which is a shorter wave-length than red light. Thus the result of Lenard and Saeland is incorrect.

The error arose from confusing the effect of red light on the conductivity, which did exist, with that of the photoelectric effect which did not exist. In their paper in the *Annalen der Physik*, Lenard and Saeland described what they thought to be a new effect with red light which was called "Aktinodielektrische Wirkung." This effect differed from the photoelectric effect in that the test plate instead of charging up only positively, charged up both positively and negatively. It was thought that the long heat or red waves being more nearly comparable with the dimensions of the molecules affected them beyond the point where the photoelectric effect stopped. However, after working about a year on the effect of red rays on phosphorescent calcium sulphide, the writer came to the conclusion that no photoelectric effect could be obtained with red light and that the actinodielectric effect was nothing more than an increase in conductivity such as had previously been known to exist for selenium.

After the foregoing conclusion was reached a reexamination of the original article of Lenard and Saeland showed that on account of a faulty construction of their apparatus the plate on which the material was placed was not completely insulated from the accelerating and retarding fields, as is necessary when the photoelectric effect only is to be obtained.

In order to confirm the conclusion, my own apparatus was later reconstructed at the Massachusetts Agricultural College so as to obtain both effects separately at will. It was shown with this apparatus that sulphur was both photoelectric and actinodielectric. The photoelectric effect required a high vacuum, but the actinodielectric effect worked in addition at atmospheric pressure, the direction of the current depending upon the direction of the applied field.

[1] "The Photoelectric Effect of Phosphorescent Material," *American Journal of Science*, 1912.