

sent to the secretary, Professor Mario Tevi Della Vida, via Palermo 58, Roma.

THE Faraday Society and the Physical Society of London have arranged to hold a general discussion next October on colloidal physics and chemistry.

THE thirty-ninth annual meeting of the Society of Chemical Industry was held at Newcastle-upon-Tyne on July 13-16. The gold medal of the society was presented to M. Paul Kestner, president of the Society of Chemical Industry of France. Sir William J. Pope was elected president for the ensuing year and an invitation to hold the next annual general meeting at Montreal was accepted.

THE *Scientific American* is offering \$5,000 for the best essay of 3,000 words explaining the Einstein theory. All essays must be in English and written as simply, lucidly and non-technically as possible. They must be typewritten and must reach the office of the *Scientific American*, 233 Broadway, New York, by November 1, 1920. The right is reserved to divide the prize between two contestants if in the opinion of the judges the best two essays are of equal merit.

THE *Journal* of the American Medical Association records the appropriation by the Swedish government of 5,000 crowns to aid the Swedish Medical Association in publishing three journals, the semimonthly, quarterly and transactions. Three journals devoted to hygiene are given from 1,000 to 1,500 crowns, and four specialist journals from 500 to 1,200. To aid in starting the new *Acta Oto-Laryngologica*, 4,000 crowns are appropriated. Each of the journals specified is to donate a number of copies to the university libraries.

It is reported from Paris that the mosquito plague was so serious there last year that the Pasteur Institute has been devoting special attention to the destruction of the larvæ. An old plan was to pour oil on the waters where mosquitoes breed, but this also killed any fish there might be in the waters, besides making it unfit for drinking. M. Roubaud, of the Pasteur Institute, has now discovered a method

of destroying the larvæ by sprinkling powdered formaline on the surface of the water. It is said that this does not injure fish or make water impossible to drink, and is more rapid and effective than oil.

THE gift of a collection of fossils and shells which makes the University of Illinois collection of fauna and flora representing the coal period the largest extant was announced at the recent meeting of the trustees of the university. The collection was made by J. C. Carr.

#### UNIVERSITY AND EDUCATIONAL NEWS

THE family of the late Sir John Darling, of Adelaide, South Australia, have contributed the sum of £15,000 towards the cost of erecting a new building for the medical school of the University of Adelaide. This building will be designed to accommodate the departments of physiology, biochemistry and histology and the medical library. The building will be erected and equipped at a cost of £25,000.

MR. WALTER MORRISON, of Balliol College, Oxford, has just paid to Bodley's librarian the sum of £50,000 for the capital account of the library. Mr. Morrison had previously given £10,000 to each of three university funds—one for the readership in Egyptology, another for the promotion of the study of agriculture, and a third towards the establishment of a professors' pension fund.

PRELIMINARY plans have been made for an International University, which will hold its first session in Bruxelles from September 5 to 20. The courses cover practically the whole field of higher education, but will lay special weight on questions of current interest. They will be given in the building of International Associations, and there will at the same time be held a number of congresses and meetings. The names of those who will give the courses are not announced in the preliminary program, issued in July.

DR. R. I. WOLD, for the past five years connected with the engineering department and

the research laboratories of the American Telephone & Telegraph Company and the Western Electric Company, has accepted the position of head of the physics department at Union College and will cooperate with the research laboratories of the General Electric Company in certain research work.

PROFESSOR JAMES T. ROOD, of the University of Illinois, has been appointed professor of electrical engineering at the University of Wisconsin. Professor Rood was graduated from the Worcester Polytechnic Institute in 1898 and obtained the degree of doctor of philosophy at Clark Institute in 1906. He taught nine years at Lafayette College and has since been two years on the Illinois faculty.

FRED C. WERKENTHIN, associate professor of botany in New Hampshire College, has been elected to an instructorship in botany in Iowa State College.

DR. G. R. BISBY, formerly of the University of Minnesota, has accepted the position of professor of plant pathology at the Manitoba Agricultural College, Winnipeg, Canada.

PROFESSOR J. T. WILSON has been elected dean of the faculty of medicine in the University of Sydney in succession to the late Sir Thomas Anderson Stuart.

## DISCUSSION AND CORRESPONDENCE

### METHODS USED IN THE STUDY OF SOIL ALKALI

IN SCIENCE of February 6, 1920, Mr. F. B. Headley, of Fallon, Nevada, took occasion to call attention to imperfections in methods of studying soil alkali used by the Utah Station and some other institutions. His criticism seems to center around two ideas: (1) that we consider that salts added to the soil represent the true concentration of the soil solution; (2) that we did not analyze soils to which salts had been added and that we were therefore entirely ignorant of the amount of alkali the soil contained.

Answering these in order, I may say that

in Utah we have never considered salts added to the soil to be anything but *salts added*. Workers in soil science are fully aware of the fact that when such salts as carbonates are added to the soil they immediately undergo transformations that are not well understood. No one, so far as I know, would undertake to tell just what the soil solution as it affects plants really is. It is somewhat like trying to tell the composition of living protoplasm. As soon as an attempt is made to analyze the protoplasm, it is killed and its composition is probably changed. Numerous methods for arriving at the concentration of the soil solution have been suggested. These include (1) direct chemical analysis of leachings of the soil, (2) subjecting the soil to high centrifugal force in an attempt to throw off some of the real soil solution, (3) placing the moist soil under very heavy pressure to press out some of the solution, (4) attempting to obtain the osmotic pressure of the soil, (5) obtaining the conductivity of the soil to a current of electricity, (6) determining the concentration of salts by the lowering of the freezing point, and (7) getting the vapor pressure of the soil in order to determine the concentration of the soil solution.

None of these methods has been entirely satisfactory, but each one has been useful in connection with certain studies. I think it can be said therefore that at present we have no means of measuring the exact concentration of the soil solution as it affects plants. Neither the amount of salt added to the soil nor the amount recovered by chemical analyses represents the true value, and in making any interpretation it is necessary to state specifically in each case whether reference is made to "salts added" or "salts extracted." At the Utah Station we have been very careful to say which of these we referred to in every case.

In a recent publication (Utah Station Bulletin No. 170) we have taken occasion to show the relation of "salts added" to "salts recovered" by extraction using various quantities of water and stirring for different lengths of time, by the freezing point method,