JOHN HARPER LONG, professor of chemistry at the Northwestern University Medical School for thirty-seven years died at his home in Evanston, Ill., on June 14, aged sixty-two years. Dr. Long, distinguished for his work in physiological chemistry, was vice-president of the American Assocation for the Advancement of Science in 1901 and president of the American Chemical Society in 1903.

FRANK N. MEYER, of the Department of Agriculture, has died in China. Mr. Meyer had travelled as an agricultural explorer through China, Siberia and Turkestan for nearly ten years and had introduced here many species and varieties of plants. He discovered the home of the chestnut bark disease.

MAJOR EUGENE WILSON CALDWELL, of the Medical Reserve of the army, an X-ray expert who recently perfected a device for stereoscopic fluoroscopy, died last week as the result of an operation to remove a cancerous formation on one of his arms, caused by burns received some months ago in making X-ray experiments.

A CABLE from London to the daily papers states that the American Army, at the suggestion of the French, is adopting the metric system for all war purposes, *e. g.*, for artillery, machine-guns, maps, etc. The convenience of such an arrangement is obvious as all "parts" become thereby interchangeable.

UNIVERSITY AND EDUCATIONAL NEWS

GIFTS to Yale University in the past year and credited as endowment made a total of $1,279,764, the alumni were informed by President Arthur T. Hadley at the commencement luncheon. From time to time gifts have been announced, but the new items included $100,000 as the Earl Williams Fund from Mrs. James Harvey Williams for the benefit of the University Press, and $400,000 from William L. Harkness, '81, as a building fund. The Williams Fund is a memorial to Earl Williams, 1910, 301st Field Artillery, who died in May. For the present the income will be used in war relief. The Harkness building after the war will be placed on Dwight Hall site, and will contain lecture and classrooms.

UNDER a compromise agreement Columbia University will receive half the estate of the late Robert B. Van Cortlandt. The value of the estate is said to be about $1,000,000.

A GIFT of Liberty Bonds and checks totalling $100,000 to Harvard University from 206 members of the class of 1893 is announced.

EIGHTEEN fellowships and thirty-three scholarships have been established for students in chemistry at colleges and universities throughout the country by the du Pont Company. The total value of these awards will be $25,000, the fellowships carrying $750 and the scholarships $350 each for the coming scholastic year. The fellowships are distributed among seventeen colleges and universities and the scholarships go to thirty-one institutions of learning scattered through the country, every section from the Atlantic to the Pacific, and from the Canadian border to Texas being included. The fellowships are for postgraduate work and will be established in the institutions which have the most advanced courses in chemistry. The scholarships go to members of the senior classes in institutions which pay particular attention to chemical instruction. The recipients of these awards, which are to be known as "du Pont fellowships" and "du Pont scholarships," are to be selected by the institutions themselves, the only condition made by the du Pont Company being that they shall go to students who have devoted the major part of their time to chemistry.

THE *Journal* of the American Medical Association states that a donation of $2,000,000 has been promised to the University of Toronto for research work. Professor A. B. Macallum, chairman of the scientific and industrial research council of Canada, urges that research science faculties should at once be established at McGill and Toronto universities.

DR. LAUDER W. JONES, head of the department of chemistry in the University of Cincinnati, has resigned to become head of the department of chemistry in the University of

Minnesota. He has been granted a leave of absence for a year in order to take charge of the Research Division of the Gas Offensive at the American University in Washington. Dr. Harry S. Fry, associate professor, has been appointed acting head of the department of chemistry in the University of Cincinnati.

JOHN F. GUBERLET, A.M. ('11, Illinois), Ph.D., '14 (zoology), who since 1915 has been professor of biology at Carroll College, Waukesha, Wisconsin, has recently accepted the position of assistant parasitologist at the Oklahoma Agricultural and Mechanical College and Experiment Station, at Stillwater, Oklahoma. He will take up his work in Oklahoma on July first.

HERBERT RUCKES, in charge of the department of biology at Grove City College, has resigned to accept a position in the department of biology at the Agricultural and Mechanical College of Texas. For the past year Mr. Ruckes has been carrying on a botanical survey of Mercer county, Pa.

PROFESSOR H. V. TARTAR, who for the first five years has been station chemist and associate professor of agricultural chemistry at the Oregon Agricultural College, has accepted a position in the department of chemistry of the University of Washington at Seattle.

DISCUSSION AND CORRESPONDENCE

SOLUTION TENSION AND INDUCTIVITY

TO THE EDITOR OF SCIENCE: In SCIENCE of May 3, Professor Fernando Sanford, of Stanford University, describes a concentration cell in which the direction of deposition is the reverse of what would be expected if it were previously assumed that the solution tension of the metal is constant for both solvents. He offers an explanation connecting the phenomenon with the dielectric property of the solvent.

In the absence of quantitative data, the great difference known to exist between the solution tensions of a metal in different solvents would seem a sufficient explanation. It is true that in the Nernst theory of the concentration cell prior to 1894 it was supposed that the solution tension of a metal was a constant property of the metal at a given temperature; but the supposition was short lived, as it involved a difficulty exactly like the one in question, and led to measurements of solution tension in water and in alcohol,[1] so that apparently a difficulty has been raised which does not exist.

It may well be, as Professor Sanford suggests, that there is a relation between solution tension and the inductivity of the solvent, just as there must be a relation between inductivity and dissociating power, since the forces between charged bodies vary inversely as was remarked by J. J. Thomson and by Nernst. The same consideration would indicate a relation between the effective solution pressure of a metal and inductivity, since there could hardly be a more typical condenser than the Helmholtz "double layer." Certainly the quantitative investigation of the matter is greatly to be desired.

An assumption of constancy of solution tension of a metal in contact with varying concentrations of its ions in the *same solvent* is not warranted; although the results of computations using the equation for electromotive force,

$$\pi = \frac{RT}{nF}\left(ln\frac{P_1 \cdot p_2}{P_2 \cdot p_1}\right),$$

in which the solution tensions, P_1 and P_2, are assumed to cancel, and the ionic concentrations, $m_1\alpha_1$ and $m_2\alpha_2$, are substituted for the osmotic pressures, p_1 and p_2, would indicate that the simplified equation is at least approximately true.

On *a priori* grounds, the assumption is contradicted by the probability that the maintenance of ionization is largely due to an association of the charged particle with molecules of the already associated solvent, as well as that large inductivity and association certainly accompany each other, even if no simple relationship exists. So that it seems reasonable to expect, as he points out, that the inductivity of a solvent would change with changing concentration of ionic solute. But the change is in

[1] H. C. Jones, *Zeitschr. f. physik. Chem.*, 14, 346 (1894).