Brown, the Bureau's representative at that port, for appropriate publication. The service is being established near the close of the season, but it is desired to have it in working order, so that it may be efficient on the resumption of more active fishing in the spring, when it is hoped to extend it to the coast of Maine.

UNIVERSITY AND EDUCATIONAL NEWS

A GIFT of $700,000 to the University of Colorado for the construction of a medical school and hospital by the General Education Board of the Rockefeller Foundation is announced.

Two bequests to Yale University are announced, one of $46,360 from the late Allen P. Lovejoy, of the class of 1904, of Janesville, Wisconsin, for general university purposes, and one of about $113,000 from the estate of Levi I. Shoemaker, of Wilkes-Barre, Pa.

THE president of Argentina has approved the law ordering the immediate construction of a surgical institute for the chair at Buenos Ayres in charge of Professor José Arce. Four hundred thousand dollars have been provided for this work.

THE following changes have been made in the pathological chemistry staff of the New York Post-Graduate Medical School and Hospital: George Eric Simpson, Ph.D., has resigned as instructor to become assistant professor of biochemistry at McGill University. James J. Short, M.D., has resigned as instructor to complete his interneship in the hospital. To fill this latter position, Hilda M. Croll, A.M., formerly associate professor of physiological chemistry at the Woman's Medical College of Pennsylvania, has been made associate. Cameron V. Bailey, M.D., has been appointed assistant professor, to devote his time largely to respiratory and metabolic work.

THE department of physics, West Virginia University, reports the following additions to the staff: Fred A. Molby, Ph.D. (Cornell); formerly of the University of Cincinnati, associate professor. E. F. George, Ph.D. (O. S. U.), formerly of the Research Laboratory of B. F. Goodrich Rubber Company, assistant professor. O. R. Ford, B.S. (Salem), instructor.

MISS LOUISE OTIS, a graduate of Northwestern University, formerly chief chemist of The Arco Company, Cleveland, O., and recently chemist with Glenn H. Pickard, of Chicago, has been appointed instructor in food chemistry at Northwestern University.

PROFESSOR H. H. CONWELL, associate professor of mathematics in the University of Idaho, has resigned to accept a similar position in Beloit College.

DISCUSSION AND CORRESPONDENCE

A POSSIBLE RELATION BETWEEN MECHANICAL, CHEMICAL AND ELECTRICAL QUANTITIES

TO THE EDITOR OF SCIENCE: It is always of interest to find an unexpected numerical relation between different physical constants, and when the only numerical factor turns out to be a multiple of 10, one is led to expect that in the absolute system it is a rational, unity relation, if the units are properly chosen.

At present the numerical connecting link between chemical and electrical quantities is the electrochemical equivalent of silver, an empirically determined constant whose accepted value now is 0.00111800 gram per coulomb. If this value were only about 3/10 of 1 per cent. higher the writer has found the following curious and totally unexpected relation would be true for all the elements:

$$\text{grams} \times g = 10 \times \text{coulombs} \times \text{atomic weight}/g.$$

in which g is the acceleration of gravity numerically equal to 980.597; it will be noticed that the only coefficient is 10. The faraday (the number of coulombs per gram ion) then would be equal to $g^2/10 = 96{,}157$, now generally taken as 96,500. The first term (grams $\times g$) represents a force in dynes, if the grams represent a mass. The physical meaning of the right hand term is not clear, but to balance the physical dimensions the factor

"atomic weight/g" would have to be a force divided by a quantity of electricity, which quotient is called the intensity of an electric field. The atomic weight would then have to be taken to represent something more than a mere number or ratio.

It was thought that perhaps the elimination of all terrestrial factors like the atmospheric pressure, temperature, attraction of gravitation, etc., from the value of this electrochemical constant thereby reducing it to absolute terms which are independent of this earth, might perhaps raise its value by this small amount of 3/10 of 1 per cent., though the writer has been informed by very reliable authorities that it seems unlikely that such corrections would equal this amount. Unless this very slight discrepancy can be adjusted it would seem that this curious relation is a mere accidental coincidence of numbers. But when we are asked to believe that masses change with changes of velocities, that is, with accelerations, and that the atoms of the chemical elements are made up of electrons (electric charges) in very rapid orbital motions, again involving accelerations, so-called, it does not seem unreasonable to believe that new and unexpected relations may be found to exist between mechanical, chemical and electrical constants.

Carl Hering

Philadelphia,
October 13, 1920

THE INFLUENCE OF DRY VERSUS FRESH GREEN PLANT TISSUE ON CALCIUM METABOLISM

In Science, 1920, LII., 318, Hart, Steenbock and Hoppert explain negative calcium balances on dry feed in their experiments, as well as those of Forbes and Meigs, on the destruction of a hypothetical antirachitic vitamine by drying. Mellanby brings evidence to show that the antirachitic vitamine is the same as fat-soluble-A, which is not destroyed in plants by drying. On the contrary, the antiscorbutic vitamine seems to be greatly reduced by drying except in very acid foods (fruits). The marrow tissue of the bones increases in proportion to the bone proper in scurvy and calcium is apparently lost from the bones in this way. In order to make more exact studies of calcium metabolism on guinea-pigs, I feed them calcium-free diets during and for two days before metabolism periods of three days in length. One day periods were not long enough for definite conclusions to be drawn, but three-day periods on a large enough series of animals seemed perfectly reliable. The animals were under starvation conditions as regards calcium, but this lasted only five days, and examination of their bones did not show differences from animals fed liberal amounts of calcium. Animals that had been on a diet of dried plants fourteen days before the experiment, eliminated twice as much calcium as those that had been on a diet of fresh green plants and which during the experiment received calcium-free orange juice. In case of animals that had been twenty-one days on a dry diet, the difference from the controls was more striking. Scurvy appeared in all the animals on the dry diet. It seems possible, therefore, that the loss of calcium in the experiments of Hart, Steenbock and Hoppert may have been due to scurvy and that it is unnecessary to postulate rickets or an antirachitic vitamine.

E. F. Robb

University of Minnesota

PURCHASES IN GERMANY

To the Editor of Science: Some of the problems connected with the purchase of books, etc., from Germans at the present time have been alluded to several times in Science, and further information may not be out of place.

Somewhat less than a year ago I was offered by a German firm, with whom I had dealt for a score of years before the war, the file of a journal I was desirous of purchasing, for 3,000 marks. Somewhat later I received another offer from the same firm for $420. A few weeks ago the same was again offered, this time at 22,000 marks, and still more recently at 25,000 marks.

As far as I am concerned, the $420 is a