in the sand. The insoluble residue remaining after repeated and alternated fusions with sodium bisulfate and caustic soda was labeled "New Oxide" in 1918. Its properties and mode of occurrence indicated that it was an oxide of the titanium-zirconium group, and that it was the oxide of the missing element, of which the atomic number is 72. Some of its properties showed a resemblance to tantalum, its next neighbor, with the atomic number 73; but all traces of this element would be removed by the repeated fusions with caustic soda. As none of the ordinary salts were available for the purpose of determining the atomic weight, recourse was had to the double fluoride with potassium, which closely resembles those of titanium and zirconium. The rough determinations with material imperfectly purified for such a purpose indicated that the atomic weight of the element was between one and one half and two times that of zirconium (90.6). The oxide resulting from these determinations was of a cinnamon-brown color, not white as was expected. We understand that Dr. Scott wrote on January 28 to Drs. Coster and Hevesey offering to send them specimens of his separated material to compare with their own, and received a reply from them on Saturday night last (February 3) saying they would be very glad to do so. On Monday Dr. Scott sent to them practically all his purified material, and not only he, but also all scientific men, must await with keen interest the result of the searching examination by means of the powerful appliances in their hands for spectral analysis by X-rays. In view of the source of his oxide and its association with much titanium oxide, Dr. Scott has suggested, as Oceanus was one of the Titans, that "Oceanium" would be a suitable name for the element. This name would also recall that the sand came from Oceania, of which New Zealand is one of the component parts.

GEODETIC AND TIDAL SURVEYS

A CONFERENCE was held in Ottawa on January 2, 3 and 4, at which officers of the United States service discussed with Canadian officials problems common to the two countries. The visitors were Dr. William Bowie, chief of the Division of Geodesy of the United States Coast and Geodetic Survey, who conferred on geodetic work with Dr. E. Deville, director general of surveys, and Mr. Noel Ogilvie, director of the Geodetic Survey of Canada, and Mr. G. T. Rude, chief of the Division of Tides and Currents, who met Dr. Bell Dawson, superintendent of the Tides and Current Surveys of Canada, and discussed tidal data.

The cooperative geodetic plan includes primary or precise triangulation along the international boundary from Lake Superior to the Pacific coast, and extension of triangulation in Idaho, Oregon and Washington to the Canadian boundary. On the Pacific coast similar cooperative work is being carried on from northern Washington through British Columbia to the Yukon territory and Alaska. The plan also includes several lines of precise leveling for strengthening the precise level nets of both countries.

The triangulation and precise leveling will be available to both countries for all classes of work needing precise control. The result will be coordination in the surveys of the two countries, and the geographical positions of boundary monuments will be the same on the maps of each. Accurate maps are possible only after the precise establishment of geodetic control points, and on accurate maps the development and prosperity of any country largely depend. Accurate maps have also an important influence in promoting cordial international relations.

Referring in one of his public addresses in Ottawa to cooperative geodetic work, Dr. Bowie stated that, as far as triangulation and precise leveling were concerned, there was one geographical unit for Canada, the United States and Mexico. He added that North America was the only continent that could boast of this uniformity, and that Europe for years had been struggling, so far unsuccessfully, to obtain the same result. Geodetic cooperation between Canada and the United States was most conspicuous and most happy.

Mr. Rude spoke of the importance of accurate charts and of a thorough investigation of facts relating to tides and currents. He referred also to the cooperation that existed between Great Britain, Canada and the United States in regard to the interchange of such knowledge.

COLLOID CHEMISTRY

WITH the assistance of prominent specialists the world over, I am preparing a comprehensive book on Colloid Chemistry, Theoretical

and Applied. The extensive and international character of the book is evidenced by the subjoined list of some of those who have already promised contributions:

United States: E. G. Acheson, W. D. Bancroft, Carl Barus, M. H. Fischer, W. D. Harkins, H. N. Holmes, G. A. Hulett, D. D. Jackson, G. F. Kunz, R. S. Lillie, D. T. MacDougal, S. E. Sheppard, A. Silverman, E. B. Spear, E. W. Washburn, A. W. Thomas, H. A. Gardner. England: E. F. Armstrong, Henry Bassett, W. M. Bayliss, E. F. Burton, W. B. Hardy, F. G. Donnan, F. E. Lloyd, A. E. Dunstan. Germany: H. Bechhold, G. Bredig, A. Fodor, H. Handovsky, A. Lottermoser, Lüppo-Cramer, R. Höber, W. Ostwald, H. Plauson, E. Stiasny, G. Tammann, H. Schade. Austria: C. Doelter, W. Pauli. Jugoslavia: M. Samec. Sweden: Sven Oden. Holland: H. R. Kruyt. Mexico: A. L. Herrera.

Many unusual experimental facts and practical applications of colloid chemical principles are unpublished, and the object of this letter is to ask any one in any field of science or experience who may have information of interest to send me a brief statement for inclusion in the book.

Contributions may consist of a paragraph, a page, or several pages, and will (unless contrary request is made) be duly acknowledged. If possible they should be submitted in English and duplicate copies will be appreciated. Authors should state their full names and titles.

The editors of scientific, technical and cultural publications in all countries are asked to disseminate this appeal.

JEROME ALEXANDER
50 EAST FORTY-FIRST STREET,
NEW YORK CITY

DR. PAUL WAGNER

ON the seventh of March, the noted German agricultural chemist and investigator, Dr. Paul Wagner of Darmstadt, will complete his eightieth year, at which time his numerous friends and pupils in Germany will hold a celebration at Darmstadt in his honor.

Fifty years ago, Dr. Wagner became director of the Experiment Station at Darmstadt, which had just been founded, and has since won for this institution a world renown, through his investigations on plant foods. He certainly deserves to receive great commendation for having, with the help of his own method of pot experiments, substantially extended and firmly established the foundation for the use of commercial fertilizers.

He was the first to recognize and correctly estimate the fertilizing effect of the Thomas phosphate or basic slag. By a steady improvement in the methods of fertilizer experiments in the field, he succeeded in making of these field experiments a practical means of exact investigation.

Dr. Wagner, furthermore, has clearly shown the results of his investigations in the vegetation house, field and laboratory to the practical farmer, both in articles which are easily understood and in inspiring lectures; and in this way he has contributed in an enormous degree toward the proper use of commercial fertilizers in agriculture.

Here in the United States, many of Dr. Wagner's articles are known, having been translated or summarized by numerous writers to the great advantage of American agriculture.

H. A. H.

SIGMA XI LECTURES

THE following public lectures were given before the Iota Chapter of the Society of Sigma Xi, University of Kansas:

Dr. Henry B. Ward, professor of zoology, University of Illinois: January 10, "The struggle of man with the life of the wilderness in North America," and "The factors which control and direct the migration of the Pacific salmon."

Dr. A. Sommerfeld, professor of mathematical physics, University of Munich, at present holding the Karl Schurz memorial professorship at the University of Wisconsin: Jan. 20, "Atomic structure and periodic system of elements."

Officers of Iota Chapter are:

President, F. B. Dains, professor of chemistry.
Vice-president, W. S. Hunter, professor of psychology.
Secretary, Guy W. Smith, assistant professor of mathematics.
Treasurer, H. E. Jordan, assistant professor of disseminate this appeal.

In a visit to the University of Oklahoma Dr. Henry B. Ward, national president of Sigma Xi, addressed the local Sigma Xi Club on the evening of January 11 on "The struggle of man with the life of the wilderness in