the further question of raising a fund in memory of Lord Rayleigh, to be used for the promotion of research in some branch of science in which he was specially interested.

Dr. James Emerson Reynolds, professor of chemistry at the University of Dublin from 1875 to 1903, since engaged in research work in the Davy-Faraday laboratory of the Royal institution, died on February 26 at the age of seventy-six years.

Lucien Poincaré, author of works on physics and vice-rector of the University of Paris, died on March 9, at the age of fifty-eight years. M. Poincaré was a brother of President Poincaré, and a cousin of the great mathematical physicist, Henri Poincaré.

Dr. Hugo Eisig, who cooperated with Anton Dohrn in the foundation and conduct of the Naples Zoological Station, died in Switzerland on February 10, aged seventy-three years.

The American Pharmaceutical Association has available a sum amounting to about $450 which will be expended after October 1, for the encouragement of research. This amount either in full or fractions will be awarded in such manner as will in the judgment of the research committee produce the greatest good to American pharmaceutical research. Investigators desiring financial aid in their work will communicate before May first with H. V. Arny, chairman, 115 West 68th St., New York, giving their past record and outlining the particular line of work for which the grant is desired. The committee will give each application its careful attention and will make recommendations to the American Pharmaceutical Association at its meeting in Washington, May 3–8, when the award or awards will be made.

UNIVERSITY AND EDUCATIONAL NEWS

The fund for the University of Montreal (Laval), recently destroyed by fire, has attained to more than $3,500,000.

The *Journal* of the American Medical Association states that Toronto University needs $4,000,000 for its reorganized medical department. Dr. George E. Vincent, of the Rockefeller Foundation, has been in Toronto and has been conferring with the special committee of the medical department, presided over by Dr. Alexander Primrose, C.B. It is planned to pay whole-time professors in medicine, surgery, obstetrics, pathology, and perhaps one or two others, $10,000 a year. Representatives from Queens, Western at London, and from Winnipeg interviewed Dr. Vincent as to their likelihood of participating in the $5,000,000 to be allotted to Canada for medical education from the foundation.

A bequest of £4,000 has been left to the University of Manchester by the late Mr. William Kirtley, a nephew of Stephenson, who constructed the Manchester and Liverpool Railway. The fund will be used to establish a William Kirtley scholarship for the promotion of the study of mechanical engineering.

According to the forthcoming annual report of President Harry Pratt Judson, a building which the University of Chicago stands especially in need of is a research laboratory for the department of chemistry. The present Kent Chemical Laboratory is overcrowded with students. Such a building is estimated to cost about $350,000 and would be erected directly west of Kent Chemical Laboratory.

Dr. W. C. Allee, of Lake Forest College, will next year be head of the department of biology at Knox College.

DISCUSSION AND CORRESPONDENCE

THE U. S. GEOLOGICAL SURVEY

In a recent number of Science, the director of the United States Geological Survey calls public attention to the deplorable fact that the Survey is rapidly losing many of its capable geologists. He seems to ascribe this rapid depletion of the scientific staff entirely to the low salaries offered by the government as compared with the high salaries, often with privileges of investment, offered by corporations—particularly oil companies. Geologists who are familiar with the conditions in the Geological Survey during the past twenty years or more are aware, however, that the director has mentioned only one of the reasons why geologists are rapidly leaving the survey to accept more

attractive positions elsewhere. It seems important that all the other factors should be brought to public attention so that there may be a general understanding of the situation, resulting in pressure upon Congress and the officials of the administration to preserve what remains of the survey's usefulness.

The low salaries paid by the government and the needlessly strict prohibition against investments in any kind of industrial projects even remotely connected with survey work are not the only financial handicaps that beset the employees of the Federal Survey. Geologists engaged in field work often incur more or less danger—in some cases a great deal; yet a serious injury will bring no compensation from the government, but will on the contrary generally cost the injured man his position, if his usefulness has been permanently impaired. Cases of severe illness cost the unfortunate geologist full pay during the time lost, so far as it exceeds the arbitrary "sick-leave" allowance. Again, the Survey has no provision for pensioning those who have grown old and superannuated in its service.

A more important factor, as it seems to many of us, is the less interesting work now-a-days assigned to various members of the Survey. Little by little the amount of scientific research carried on by the survey has been curtailed in favor of routine statistical and classificatory activities. In large measure survey geologists have been gradually reduced from scientific investigators to technical or scientific clerks who have but little to say about the planning and initiation of their work, and who publicly get but little individual credit for the result. There are many men of zeal and high purpose who are willing to work for a relatively small salary provided they have adequate opportunities for and encouragement in the pursuit of their chosen researches; but of late the survey has not been attractive to men of this type.

Scientific research without appropriate and opportune publication soon becomes a mockery. Long delays in the appearance of survey reports have for years been the rule rather than the exception, until the situation has become a standing joke both inside and outside the bureau. Many a report of field and laboratory investigations has been held in "cold storage" year after year until it has been duplicated and superseded by the work of others. While the war greatly aggravated this condition it was an obvious tendency even before 1914.

The most serious blow which has been struck at the survey in its entire history has come within the last few months in the guise of an administrative order greatly curtailing the space and facilities available for the work of the Geological Survey. For years members of the survey endured the conditions of the old survey office building—in which the overcrowding was a national disgrace—on the assurance that a new building would soon be constructed wherein there would at last be room enough. No sooner had the survey moved into the new building, however, than the exigencies of the war prevented them from obtaining all the space to which they were apparently entitled. Now comes the order, from a source evidently lacking an understanding of how scientific work is done, greatly reducing the already limited quarters and depriving even the more important and distinguished members of the survey of their laboratories and private offices. Men of national reputation in their science are crowded together three or four in an office suitable for one. Some of the geologists are attempting to do their more important work at their homes, to which they have removed their libraries and working materials normally kept at their survey offices. Others with more fortunate connections manage to continue work in laboratories of the National Museum. Many, however, have cut the Gordian knot by resigning, and still other resignations are following from month to month.

It should be distinctly understood by every one that although the geologists of the survey need and are entitled to salaries appropriate to their positions and in keeping with the increased cost of living, the most serious defect of the survey to-day is the paucity of actual scientific opportunities either for geologists already on the staff or to offer promising young men of the stamp formerly attracted to survey

work. No reversal of the survey's present decline curve need be expected until adequate provision is made for such opportunities.

ELIOT BLACKWELDER

DENVER, COLORADO,
January 22, 1920

THE AWARD OF THE NOBEL PRIZE TO PROFESSOR HABER

TO THE EDITOR OF SCIENCE: The statement of the First Secretary of the Swedish legation (published in the February 27 number of SCIENCE, p. 207), relative to the award of the Nobel Prize to Professor Haber, contains some erroneous conclusions and some half-truths which should not be allowed to pass unchallenged. While Professor Haber's perfection of the commercial synthesis of ammonia amply warrants the award of the prize to him, I would comment upon the other numbered statements as follows:

2. The production of ammonia is only a step, this product being oxidized to nitric acid and nitrates by the Oswald process. While the Haber process will ultimately be of great value to the world at large, the patents, secrets, experience and profits were all Germany's (until after the war). The first secretary omitted to state that the Haber process made Germany independent of Chile saltpeter (sodium nitrate), not only for agricultural purposes, but also for the manufacture of chemicals, dyes, and especially explosives.

3. The address of Professor Bernthsen in 1912 before the eighth International Congress of Applied Chemistry in New York, was notice to the world at large that Germany could carry on war even if the British fleet cut off the Chile nitrate supply. While giving much general information, Bernthsen did not disclose all of the essential details necessary to the successful manufacture of ammonia, and of nitrates from ammonia. Therefore during the war when this country wished to use the Haber process, it became necessary for one of our large American corporations to work out the details in connection with the War Nitrates Board.

4. The statement that "the Haber plants in Germany were erected with a view to producing agricultural fertilizers" is a half-truth. This naturally was an important object, for in war as well as in peace the army and the nation must be fed, and business go on; but even more vital to Germany's purposes was the fact that ammonia meant nitrates, and nitrates meant explosives necessary for the carefully planned war, which so soon followed the perfection of the Haber process.

5. Although the first secretary disclaims knowledge of the manufacture of gas masks in Sweden, it is probable that Germany got wood or charcoal from Sweden for gas mask purposes, just as she got iron ore. No criticism attaches to Sweden for this, and her fear of Russia and proximity to Germany across the Baltic (a "German lake") readily explain her attitude toward her powerful neighbor.

However the pro-German activities of certain Swedes and Swedish-Americans, and especially the abuse of Swedish diplomatic privileges by such Germans as Count Luxberg, of "spurlos versenkt" fame, have naturally created among the Allied people an atmosphere of suspicion against Sweden; so that, especially since Professor Haber is understood to be one of those who advised and helped develop gas warfare, it is easy to understand how many believe that the award of the Nobel Prize to him was, *at this time,* ill-advised and undiplomatic.

JEROME ALEXANDER

RIDGEFIELD, CONN.

SCIENTIFIC BOOKS

A Handbook of Physics Measurements. By ERVIN S. FERRY in collaboration with O. W. SILVEY, G. W. SHERMAN, JR., and D. C. DUNCAN. Vol. I. Fundamental Measurements, Properties of Matter and Optics. Pp. ix + 251. $2.00. Vol. II. Vibratory Motion, Sound, Heat, Electricity and Magnetism. Pp. x + 233. $2.00. New York, John Wiley & Sons, Inc. 1918.

Manuals for use in the physical laboratory have been designed from two quite distinct points of view. On the one hand, an attempt has been made to develop a series of experiments that would serve to illustrate the gen-