Germany, and Nagoaka, in Japan, believe they have converted mercury into gold by the use of large currents in a mercury arc lamp. If this is true it has probably resulted from the shooting of an electron into the nucleus of a mercury atom, which would convert it into an atom of gold provided the electron should remain in the nucleus. It must be said that the velocities given to electrons in a mercury arc lamp are much smaller than those which may be imparted in other ways, and that present atomic theories seem to indicate that it is exceedingly improbable that such slow electrons could get at the nucleus. However, the success of the work of Miethe and of Nagoaka can be tested only by experiment, and if they are proved successful, the theories must be changed to account for their success. Such experiments will need to be extremely careful and convincing.

Work has been begun in this laboratory on the method by means of which electrons with thousands of times higher velocities are shot into mercury in order to see if they attach themselves to the mercury nuclei and thus produce gold. It is the opinion of those who have begun this work that even these greater concentrations of energy will be insufficient, and that still more powerful and expensive sources of energy may need to be applied. That gold happens to be the element which might be produced by such a process is of no scientific, and probably of no practical importance, since if any other element could be prepared in the same way it would be of the same interest to science, and any gold produced would be enormously more expensive than the commercial value. The choice of these elements for the scientific work is entirely due to the fact that mercury is easily separated from gold, and gold in extremely small amounts may be detected.

THE ROYAL PHOTOGRAPHIC SOCIETY

THE Royal Photographic Society of Great Britain is holding its seventieth annual exhibition in September and October of this year. This is the most representative exhibition of photographic work in the world, and the section sent by American scientific men heretofore has sufficiently demonstrated the place held by this country in applied photography. It is very desirable that American scientific photography should be equally well represented in 1925, and, in order to enable this to be done with as little difficulty as possible, I have arranged to collect and forward American work intended for the scientific section.

This work should consist of prints showing the use of photography for scientific purposes and its application to spectroscopy, astronomy, radiography, biology, etc. Photographs should reach me not later than Saturday, June 14. They should be mounted but not framed. There are no fees.

I should be glad if any worker who is able to send photographs will communicate with me as soon as possible so that I may arrange for the receiving and entry of the exhibit. Address

EASTMAN KODAK COMPANY, A. J. NEWTON
ROCHESTER, N. Y.

THE EASTERN NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY

IN accordance with its new policy of distributing its regular meetings among the towns in its territory, the eastern New York Section of the American Chemical Society held its one hundred and twenty-fifth regular meeting in Troy in cooperation with the Rensselaer Polytechnic Institute, on March 31. Dr. Zay Jeffries, of the Aluminum Company of America, addressed the meeting on "Aluminum."

About 300 engineering students of the institute attended the meeting. Dr. Jeffries showed rare ability in selecting his topics, so that his address appealed to the engineers and to the scientific men alike. A large number of the local members of the Association of Steel Treaters also attended the meeting from Watervliet and Schenectady.

Dr. Palmer C. Ricketts, director of the institute, presided. Before the meeting, the members of the section from Schenectady, Albany and the other towns around Troy were entertained by Dr. and Mrs. Ricketts at their home with a buffet luncheon.

At the conclusion of the meeting, a party was organized for a tour through the engineering laboratories of the institute. The Troy division of the section certainly managed the affair in fine shape, and a hearty vote of thanks was extended them at the close of the address of the evening.

Dr. Charles A. Kraus, head of the department of chemistry of Brown University, addressed the one hundredth and twenty-sixth regular meeting of the section in the Research Laboratory of the General Electric Company, on the morning of April 4, on "The amphoteric nature of the elements."

His lecture was concerned with his own research work on liquid ammonia solutions, a field in which Dr. Kraus is the acknowledged authority to-day. By applying the accepted theory for atomic structure, he showed that all elements should be either electropositive or electronegative, depending only on circumstances. Until Dr. Kraus started his investigations on ammonia solutions, most of the elements were electropositive, and very few could be made to show any other set of properties, for the reason that in any other state these elements, and their resulting compounds, were extremely reactive, especially to moisture.

Such compounds have now been prepared and worked with. Particular emphasis was placed on the uncommon properties so revealed by such a common element as lead. In many cases, Dr. Kraus was able to foretell his experimental results with surprising accuracy, showing his theory to be correct.

Dr. Kraus emphasized his belief that some such

reasoning as he has employed might prove of great value to the metallurgist in explaining the properties of many of the alloys with which he is familiar.

P.

A NOTABLE GIFT TO MATHEMATICS

THE publication, February, 1925, of the first of the Carus Mathematical Monographs marks the beginning of an enterprise made possible by a notable gift to the Mathematical Association of America by Mrs. Mary Hegeler Carus as trustee of the foundation underlying the Open Court Publishing Company, of Chicago.

These monographs are an expression of the desire of Mrs. Carus and of her son, Dr. Edward H. Carus, to contribute to the dissemination of mathematical knowledge by making accessible at nominal cost a series of expository presentations of the best thoughts and keenest researches in pure and applied mathematics. These expositions are to be set forth in a manner comprehensible not only to teachers and students specializing in mathematics, but also to scientific workers in other fields, and especially to the wide circle of thoughtful people who, having a moderate acquaintance with elementary mathematics, wish to extend their knowledge without prolonged and critical study of the mathematical journals and treatises. It is proposed to state in the preface of each monograph the extent of mathematical knowledge presupposed on the part of the reader.

In this first of the series of monographs, entitled "Calculus of variations" by Professor G. A. Bliss, of the University of Chicago, the author assumes that the reader has an acquaintance with the elementary principles of the differential and integral calculus, but even without such knowledge the geometrical or mechanical statements of the problems, the introductions to the various chapters and the italicized theorems throughout the book should be intelligible to any reader interested in mathematics. In the final chapter only some simple properties of differential equations are presupposed, but these have already been illustrated in the preceding chapters and are described in detail in the text.

These monographs are published for the Mathematical Association of America and are distributed at cost to its members. They are made accessible to the general public through the Open Court Publishing Company, of Chicago, Illinois.

This generous gift by Mrs. Carus to the Mathematical Association of America is especially timely in view of the great difficulty now experienced by all scientific organizations in meeting the high cost of printing both of journals and of books. She is thus not only making possible the publication of high-grade mathematical books which otherwise would be quite beyond the power of the association to handle, but she is also enabling the association to do a real service for the large body of those who have a definite interest in mathematics but who are not technical specialists in this field.

The second monograph in this series will soon be ready for the printer. It is entitled "Functions of a complex variable," by Professor D. R. Curtiss, of Northwestern University. Still others are in preparation. The opportunity for service in this line by the Association seems quite unlimited. In fact, no limit is contemplated so long as the purpose in view seems to be successfully attained.

H. E. SLAUGHT

THE DANIEL GIRAUD ELLIOT MEDAL

THE National Academy of Sciences having approved the recommendation of the Committee on Award of the Daniel Giraud Elliot Medal for 1924, the medal and honorarium will be presented at the April meeting of the academy to Abbé Henri Breuil for his work, in collaboration with MM. Capitan and Peyrony, on the volume, "Les Combarelles des Eyzies," as the most outstanding contribution of 1924 in this field.

Henri Breuil is the foremost living authority on the archeology of the Old Stone Age. His chief contributions are the recognition of the great Aurignacian upper paleolithic stage and the monographing of the entire Stone Age art of France and Spain. "Les Combarelles des Eyzies" is the last and most comprehensive of a series of epoch-making monographs; it describes and interprets every one of the 291 figures discovered in the Grotto of Combarelles. Abbé Breuil is a man of untiring endeavor, great personal courage and deliberate and philosophic interpretative powers. He is the head officer of the Institut de Paléontologie Humaine, which was founded by the late Prince of Monaco.

This is the eighth award of the Daniel Giraud Elliot Medal, previous presentations having been made as follows:

1917: Frank M. Chapman—"Distribution of bird life in Colombia."

1918: William Beebe—"A monograph of the pheasants."

1919: Robert Ridgway—"Birds of North and Middle America" (Part VIII).

1920: Othenio Abel—"Methoden der Palaobiologischen Forschung."

1921: Bashford Dean—"A bibliography of fishes" (Volume I).

1922: William Morton Wheeler—"Ants of the American Museum Congo Expedition."