the natives and their languages will promote the smooth working of the expedition. So far as opportunity affords and time permits, Mr. Leakey will collect other natural history specimens, such as birds, mammals and plants.

The site which was originally worked by the Germans, and where the large dinosaur known as *Gigantosaurus* was found, is at Tendaguru, about 50 miles, or four days' march, slightly west by north of Lindi, which is an open roadstead near the southern extremity of Tanganyika. Large steamers call only at Dares-Salaam, but there is a fairly frequent coastal service between that port and Lindi. The site has in the course of years become overgrown with vegetation, and the neighborhood is almost uninhabited, but no great difficulty is anticipated in opening up the site again.

There is another site about two miles east, in the Mbemkuru valley, where remains of *Gigantosaurus* were discovered by Major Pretorius; this will also be investigated. The working season extends from early May until the end of December. During the wet season, when about 17 inches of rain falls, exploration and transport are practically impossible.

Sir Horace Byatt, the Governor of Tanganyika Territory, has promised such help and facilities as the administration can provide. The trustees hope that funds will permit and results warrant the exploration being continued for at least two seasons.

THE USES OF WATER

THE third symposium of the year at Harvard University, under the auspices of Gamma Alpha, the scientific society, which had for its subject "The Nature and Uses of Water," was held on March 4, in the Harvard Union.

Professor Alexander McAdie, meteorologist and director of the Blue Hill Observatory, spoke about water in the air, his title being "Rain, hail and snow." The talk was illustrated with lantern slides, and Professor McAdie made one experiment, that of weighing the collective breath of the audience. He discussed also the causes of floods and conditions determining droughts, and various schemes for making rain.

Professor Reginald A. Daly considered the geological history of the ocean, with the title "Ancient and modern oceans." He dwelt briefly on the origin of the visible water of the globe, the changes in the composition of the ocean and in its extent, with a glance at the problem of the distortion of the earth's body, at tidal friction and its consequences.

With the subject "Man's control of water," Dr. George C. Whipple, professor of sanitary chemistry in the Harvard Engineering School, showed how large a part water has played in man's existence on the earth, how man's control of water has advanced with engineering science and led to stabilization of population and the opening up of large areas for habitation. He took up also control of the quality of water, involving chemistry and water purification, and finally the establishment of legal principles because of man's use and control of water.

The symposium was held at 8 p. m. in the Harvard Union, under the auspices of Gamma Alpha, the scientific society, and was open to the general public.

THE MANUFACTURERS ASSOCIATION OF CONNECTICUT AND YALE UNIVERSITY

A PLAN for the cooperation of Yale University and the Manufacturers Association of Connecticut in industrial research and educational work has been developed under the leadership of a committee composed of John H. Goss, of Waterbury; E. Kent Hubbard, of Hartford; L. S. Tyler, of New Haven; Howell Cheney, of South Manchester, and Samuel Ferguson, of Hartford, working with a committee representing Yale University, consisting of Dean Charles H. Warren, Professor L. P. Breckenridge (later succeeded by Professor S. W. Dudley) and Professor F. E. Spaulding.

The plan for cooperation aims to enable the industries of the state to secure greater access to the facilities that the university possesses for the carrying on of scientific and technical research, and for manufacturers to secure more easily the services of young men technically trained along the lines of special importance to their particular industries. On the other hand, it aims to afford the university an opportunity to render a more effective service to the community; to bring its students and staff into closer contact with the practical applications of science to industry through the investigation of problems arising in the industries; and to afford its students better opportunities for securing practical experience by actual work under supervision in manufacturing plants during vacation time.

For many years past the university, chiefly through its scientific and engineering departments, has cooperated with individual manufacturers in carrying out technical and scientific investigations in a number of different fields. These investigations have been carried out by members of the staff, or under their direction, and have frequently furnished results of value to the particular industry concerned and to science and technology in general.

It has not, however, been generally known, particularly among the smaller manufacturers more remote from the larger industrial centers, that such work was being done or that it could be done. Under the plan developed by the university and the association it is

now proposed to direct the attention of all industrial concerns throughout the state to the fact that such facilities are available and to emphasize as strongly as possible the benefits to be derived from research.

The main features of the plan include provisions for research; use of the university library facilities; employment of scientifically and technically trained Yale graduates; the training of specially qualified young men sent by manufacturers to the graduate school of the university; the loan of equipment to the university for use in training students; and the inspection of factories, summer employment of students and cooperative education, as a part of technical and semi-technical courses at the university.

The provision for research will be worked out under the plan as follows: a member of the Manufacturers Association desiring the investigation of a problem may send his inquiry to the association headquarters at Hartford. At the discretion of the research committee of the association the problem will be submitted to a committee acting for the university, and arrangements will be made to carry out the investigation either at the university or at the plant of the party proposing it. The research work, under the direction of well-known experts in a variety of fields, will include economics and finance, administration and management, transportation, applied psychology, public health, bacteriology, chemistry and chemical engineering, physics, mining and metallurgy, and civil, electrical and mechanical engineering.

Under the plan industrial concerns are to have access to the library facilities of the university for obtaining statistics and information concerning technical processes that usually can not be obtained in public libraries.

The attention of manufacturers is to be directed to the possibility of securing scientifically and technically trained young men through the university Bureau of Appointments, which assists in placing Yale graduates in positions for which their training fits them.

In order that the university may train students in the designing and use of special machinery and apparatus, arrangements will be made through the committee for the loan of equipment to the university. Tests will be made of such equipment, and the results will be available to the company furnishing it.

The cooperation of manufacturers with the committee will be sought in developing plans for summer employment and cooperative education. The advantages which will accrue to industry through such cooperation are believed to be great.

Students will be given the opportunity to visit plants throughout the state as a part of technical and semi-technical courses.

CHEMICAL INDUSTRY

THE progress of industry in the United States is more and more being bound up with the progress of chemical science, and "it is absolutely necessary for both the banker and the manufacturer to appreciate this if they are to avoid stagnation," according to Dr. John E. Teeple, of New York, treasurer of the American Chemical Society.

Addressing the Delaware Bankers' Association recently Dr. Teeple said that more than one half of the manufacturers of this country, with a total value exceeding $62,000,000,000, were dependent upon chemistry. So rapidly was chemistry's invasion of industry spreading, he added, that this proportion was constantly becoming larger.

He named six groups—textiles, iron and steel, leather, paper, ceramics and glass, metals and metal products—with a production valued at more than $33,000,000,000 which have a definite chemical basis. Chemical and allied products, he said, have risen in value from $750,000,000 in 1899 to more than $6,000,000,000 in 1924.

The chemical industry now ranks fourth, being outranked only by food, iron and steel and their products, and textiles, in all of which chemistry is an increasingly important factor.

Stressing the importance of research in any industry, Dr. Teeple said:

> Given any chemical industry to-day, I would rather judge its future by its fixed attitude toward research than by its fixed assets, its working capital or its past earning power.
>
> In 1915 there was no potash industry here. We wanted one suddenly and the price of potash was high. In 1918, forty-four plants were actually producing potash as a main product, not as a by-product of some other operation. Just one of these forty-four plants deliberately organized a research department and kept it constantly at work making a complete and fundamental study of its problems.
>
> To-day potash is back to pre-war prices or lower, and only one of the forty-four plants is operating in competition with French and German potash. This one plant had no particular advantage of location, raw materials, patented process, or knowledge of the industry over many others, but its directors had the foresight and its financial backers had the nerve to organize research and put up the money for it month after month in good times and in bad ones.

THE HISTORY OF SCIENCE SOCIETY

THE History of Science Society, to which reference has already been made in SCIENCE, has been definitely organized with an initial membership of about three hundred. The officers for the current year are as follows: