The Coast and Geodetic Survey, representing the United States, took part in this project by making the observations at 2 of the 40 stations—one near Honolulu and the other near Manila. The publication includes a description of the instruments, some of which are illustrated, and the methods employed at these two stations, together with complete details of the observations and a summary of results.

Many of the stations of the network are at astronomical observatories where elaborate equipment, such as precision clocks and large astronomical instruments, was available. The Honolulu and Manila stations of the Coast and Geodetic Survey were strictly field stations where portable equipment had to be used, and where many formidable difficulties were encountered.

For many years the determination of longitude, especially at sea, was a very serious problem. Near the beginning of the nineteenth century, prizes amounting to many thousands of pounds in value were offered by British organizations to any one who could devise more accurate methods than the ones then available.

The invention of the chronometer was the first great step in the solution of the problem, as it enabled the mariner to carry the time of his home port quite accurately and to compare this time with his time determined at sea. The difference in the two times gives the difference in longitude.

The next great improvement in longitude determination which, however, could be used only on land, resulted from the invention of the electric telegraph, which gave a means for the direct comparison of the times between some known point and a new point.

The last great advance in longitude methods came with the advent of the radio. The radio made possible a very precise comparison of times over both land and sea and was at once adopted for practically all longitude work. This was the method used for the international longitude net in 1926.

THE OHIO ACADEMY OF SCIENCE

THE forty-first annual meeting of the Ohio Academy of Science has been arranged as a joint meeting with the Indiana Academy of Science and the Kentucky Academy of Science. It will be held at Miami University on April 2, 3 and 4.

The program will conform in the main to the following outline, the details of which will be announced later:

THURSDAY, APRIL 2:

Afternoon—Short field trip to points of local interest for those who arrive in time and care to go.

Evening—An informal gathering probably with a short address on some subject of general interest, followed by a social hour for acquaintance sake.

FRIDAY, APRIL 3:

Forenoon—Short business session, Ohio Academy of Science, followed by a general scientific session with three 30-minute addresses by the presidents of the three academies. Demonstrations.

Afternoon—Sectional meetings.

Evening—Banquet, popular address, social hour.

SATURDAY, APRIL 4:

Forenoon—Short business session, Ohio Academy, followed by sectional meetings, beginning at 9:30.

Afternoon—Sectional meetings and another field trip if desired by a sufficient number.

The membership of the program committee is as follows:

Secretary: William H. Alexander, Columbus, *chairman.*
Zoology: Wencel J. Kostir, Ohio State University, Columbus.
Botany: J. Hobart Hoskins, University of Cincinnati, Cincinnati.
Geology: Frank J. Wright, Denison University, Granville.
Medical Sciences: Charles G. Rogers, Oberlin College, Oberlin.
Psychology: James P. Porter, Ohio University, Athens.
Physical Sciences: L. W. Taylor, Oberlin College, Oberlin.

Assisted by

N. E. Pearson, *chairman,* Program Committee, Indiana Academy of Science.
Alfred M. Peter, secretary, Kentucky Academy of Science.

THE YALE OCEANOGRAPHIC EXPEDITION TO THE BAHAMA ISLANDS

A STUDY of the physics and chemistry of the ocean, and the effect of various environmental factors upon deep sea life will be made by an expedition undertaken under the auspices of the Bingham Oceanographic Foundation of Peabody Museum, Yale University, to explore the water around the Bahama Islands. Plans of the expedition, of which Gifford C. Ewing, Yale '26, of New York, is sponsor and director, have been announced by Dr. Albert E. Parr, curator of the Bingham Oceanographic Collection.

The expedition has sailed for the Bahama waters on Mr. Ewing's schooner *Abenaki,* a 50-foot gaff-rigged Alden schooner, equipped with an auxiliary 50 h. p. gasoline engine giving it a speed of eight knots under power. For the purposes of the expedition a specially designed winch with 7,000 feet of 5/32 inch steel aircraft cable on a drum was installed, taking its hoisting power by chain drive directly from the main engine of the boat. By means of this winch and wire it will be possible for the expedition to carry on observations of the physics and chemistry of the ocean down to a depth of 1,000 fathoms, and an intensive study will be made by the modern method of

using a series of deep sea samplers, with corresponding thermometers, attached to the cable at different levels.

It is the purpose of the expedition to study further the physical conditions in these waters in which, in 1927, the third oceanographic expedition of the "Pawnee," sponsored and directed by Harry Payne Bingham, Yale '10, of New York City, obtained the greatest part of the valuable collections of deep sea life now deposited in the Peabody Museum as the Bingham Oceanographic Collection.

The waters around the Bahamas are known for the configuration and relative positions of the two deep sea troughs or valleys, the Tongue of the Ocean and Exuma Sound, extending in between the Bahama Islands. Running nearly parallel and very close together for almost their entire lengths, these two troughs open towards the outer ocean at opposite ends far apart from each other.

It is hoped that the *Abenaki* expedition may bring the first step forward towards a knowledge and understanding of what actually takes place between the Antilles and Brazilian currents. In this manner the expedition will also be laying the groundwork for the Yale Oceanographic Expeditions to be undertaken during 1932–1937, by arrangement between the university and Mr. Drayton Cochran, Yale '32, and by which it is hoped that it will be possible to carry through an oceanographic exploration of the entire region west of the outer chain of islands from Florida to Brazil.

Mr. Ewing, sponsor and director of the expedition, will conduct the investigations and, with the assistance of Mrs. Ewing, will take care of the observations and collections to be made on board the schooner. He will subsequently undertake the analysis and elaboration of his results in the Bingham Oceanographic Laboratory of the Peabody Museum.

SCIENTIFIC NOTES AND NEWS

THE Echegaray medal of the Royal Academy of Sciences of Madrid has been awarded to Lord Rutherford. According to *Nature* previous recipients of the medal are: José Echegaray (1907), Eduardo Saavedra (1910), Prince Albert I of Monaco (1913), Leonardo Torres Quevedo (1916), Svante Arrhenius (1919), and Santiago Ramón y Cajal (1922).

PROFESSOR SIR J. J. THOMSON, master of Trinity College, has been appointed the delegate from the University of Cambridge to the centenary of the British Association for the Advancement of Science to be celebrated in London from September 23 to 30, and to the Faraday celebrations to be held in London on September 21 and following days.

AT the University of Glasgow on January 20, Sir Frederick Gowland Hopkins, president of the Royal Society, on behalf of the subscribers, presented to Professor Robert Muir, professor of pathology in the university, his portrait by Mr. G. Fiddes Watt, and to the university a bust by Mr. G. H. Paulin. Principal Rait, who presided, expressed his pleasure that Sir Frederick Hopkins should inaugurate his presidency of the Royal Society by going to Glasgow to do this honor to Professor Muir.

M. E. FABRY has been elected a correspondent for the section of geometry of the Paris Academy of Sciences.

DR. JEAN DEMOOR, professor of physiological biology in the University of Brussels, has been elected president of the Royal Academy of Medicine of Belgium for 1931.

THE Gamma chapter of the honorary physics fraternity at Pennsylvania State College, Sigma Pi Sigma, initiated, on February 21, Dr. Artur Haas, professor of physics at the University of Vienna, as an honorary member. Dr. Haas had given three lectures at the college.

THE Lamme Medal of the American Institute of Electrical Engineers has been awarded to Dr. William J. Foster, Schenectady, New York, "for his contributions to the design of rotating alternating current machinery," and will be presented at the summer convention of the institute which is to be held in Asheville, North Carolina, from June 22 to 26. The Lamme Medal was founded as a result of a bequest of the late Benjamin G. Lamme, chief engineer of the Westinghouse Electric and Manufacturing Company, who died on July 8, 1924, to provide for the award by the institute of a gold medal to a member, "who has shown meritorious achievement in the development of electrical apparatus or machinery."

DR. G. O. HIGLEY, head of the chemical department of Ohio Wesleyan University, has retired from active service. His former students are subscribing to a fund to be used for the establishment of the G. O. Higley Chemical Library.

DR. MARCUS BENJAMIN, editor of the publications of the U. S. National Museum since 1896, retired from active government service on January 31. A dinner in appreciation of Dr. Benjamin's work was given at the Cosmos Club on February 21. Dr. Charles G. Abbot, secretary of the Smithsonian Institution, presided and the speakers included Dr. R. S. Bassler, head