and chemistry in the University of Louisville, now known as the Louisville Male High School. In 1880, he resigned his teaching position and went abroad for study. He spent some time in the University of Berlin under Helmholtz, Kirchhof and Hoffmann; also in South Kensington under Professor Frankland and in London under Dr. Tyndall.

In 1882, he was called to the professorship in physics and chemistry at the newly organized Ohio University in Athens, remaining in that position until 1887.

In September, 1887, Dr. Mees was called to the position of assistant professor of physics under Dr. T. C. Mendenhall, who had just previously become president and professor of physics at Rose Polytechnic Institute, Terre Haute, Indiana. In 1889 he was made professor of physics. After the resignation of Dr. Mendenhall in 1890, he acted as chairman of the faculty until Dr. Eddy assumed the presidency in 1891. He was made acting president in 1894 and elected president in 1895, in which position he served until his resignation in September, 1919, when he was made president emeritus.

Dr. Mees was general secretary of the American Association for the Advancement of Science in 1889, secretary of Section B of the same, 1888, president of Section B, 1896, and president of Section E in 1920.

JOHN B. PEDDLE

SCIENTIFIC EVENTS

SURVEY OF THE INDIAN OCEAN

ARRANGEMENTS are being made to send an oceanographical expedition to the Arabian Sea and North-West Indian Ocean next year. Funds for the expedition, according to a correspondent of the London *Times*, have been provided by the trustees of the late Sir John Murray, F.R.S., of the Challenger Expedition, 1872–76, from certain moneys set apart by him in his will, and a committee, including Dr. Allen, of Plymouth Marine Station, Admiral Douglas, the hydrographer of the Navy, and representatives of the Royal Society and the Natural History Museum, has been formed under the chairmanship of J. C. Murray, with J. Stanley Gardiner, professor of zoology at the University of Cambridge, as secretary.

The Indian Ocean was chosen for the expedition after a set of questions had been sent to the leading oceanographers of all countries. It was pointed out that Sir John Murray had always regarded the survey by the Challenger Expedition of the oceans of the world as incomplete owing to the omission of the Indian Ocean. The work in this ocean was to have been provided for by the Indian Government, and was under consideration when the war broke out in 1914, since when financial conditions have made it impossible. Only one out of the many subsequent deep-sea expeditions—namely, that of the German *Valdiva*—had traversed the Indian Ocean, though the islands and their banks and slopes had been investigated in 1905 by H.M.S. *Sea Lark*. These enclose an area of a general depth of 2,500 fathoms, the Arabian Sea, in which there are few soundings save on the direct steamship lines from Aden to Bombay and to Colombo. The collections of deposits from the floor of this sea are relatively fewer than in any other region, as shown in the great Murray collection of deep-sea deposits in the British Museum. Their peculiar variation has been held to indicate recent subsidences of the ocean floor, which is also an area of great chemical changes. The south coast of Arabia is peculiarly bare of coral reefs, and this indicates unfavorable conditions for shallow-living animals, which require investigation, while the deeper-living animals of the same region are practically unknown.

The expedition will be under the leadership of Colonel Seymour Sewell, director of the Indian Museum at Calcutta, and will leave in August, 1933, to work throughout the Northwest monsoon, returning in April, 1934. The Arabian Sea will be traversed on several lines between Africa and India, and special investigations will be made of the Gulfs of Omar and Aden, leading respectively to the Persian and Red Seas.

The main objects for investigation by the expedition will be the topography of the ocean bottom by echo soundings, to discover whether there are any traces of the continental land areas that are supposed to have stretched westwards from India and to have formed the hypothetical continent of "Lemuria," and also to ascertain whether there are ridges and peaks in this semi-enclosed ocean, such as the Meteor Expedition found in the Atlantic. The study of the zonal distribution of the marine fauna every 50 or 100 fathoms downwards is to be attempted, special attention being paid to the fauna at Murray's Mud Line and to its relationships to currents and food supplies.

Temperature, salinity, oxygen-content and other chemical observations will be made at stations on all the traverses, both on the surface and at various depths. In particular, it is hoped to ascertain thereby the general circulation of the waters in the Arabian Sea, how far there is an inflow from the Antarctic and surrounding seas to balance the heavy evaporation; these will be checked by taking samples of the floating fauna at different depths, in which there may well be the young transparent eels which have been

so brilliantly studied by Dr. Schmidt, of Denmark. Bottom deposits will be obtained by sounding-leads, especially in connection with the problems set down for investigation by Sir John Murray.

THE OFFICIAL MAP OF THE UNITED STATES

COMMISSIONER CHARLES C. MOORE, of the General Land Office, has announced the publication of the sixty-fifth official map of the United States. This map, for which Congress appropriated $15,000, contains the latest information concerning elements required to constitute a complete map. It is detailed to the degree of indicating the position of every surveyed township in the United States. It contains the latest information as to the location of national forests, Indian reservations, national parks, military and all other reservations that are controlled by the Federal Government. It shows the latest changes in railroad routes and, indicated by the type in which their names are printed, the population classification of towns.

The map is used by government departments, government offices throughout the nation and the embassies and consulates of the world. Mounted on cloth and attached to a roller, it is sold by the Superintendent of Documents. The map, which is built on a scale of 37 miles to the inch and is seven feet wide, shows not only continental United States but all its possessions. It is appropriate for use in schools and is so colored as to show the historical development of the United States.

The master plates, engraved some 75 years ago, are still in the General Land Office. For many years a new map was made each year, but of late the practice has been to make one each two years. No sooner is one edition made than work is begun on the subsequent edition. Clarence E. Ruebsam, map engraver, works constantly on the plates, erasing old lines and engraving new developments. In the days when skilled engravers were rare in this country, the government sent to Germany for Adolph M. Maedel, who spent his life on the work. He trained a son, August, to be a map engraver, and he devoted a large part of his life to the Federal Government. Mr. Ruebsam, a descendant, is the fourth generation of the Maedel family that is devoting itself to maintaining the reliability of the map.

REELFOOT LAKE BIOLOGICAL STATION

The executive committee of the Reelfoot Lake Biological Station, under management and control of the Tennessee Academy of Science, announces the following consulting staff for the period 1932–33:

Archeology: Dr. P. E. Cox, state archeologist, Nashville; J. D. Taylor, Bristol.

Bacteriology and Protozoology: Dr. W. S. Leathers, Vanderbilt University, Nashville; Dr. E. L. Bishop, state commissioner of health, Nashville; Dr. E. W. Goodpasture, Vanderbilt University, Nashville; Dr. L. M. Graves, superintendent, Department of Health, Memphis; Dr. John L. Jelks, Memphis; Dr. L. E. LePrince, U. S. Public Health Service, Memphis; Dr. I. D. Michelson, University of Tennessee, Memphis; Dr. P. W. Allen, University of Tennessee, Knoxville.

Botany: Dr. L. R. Hesler and Dr. H. M. Jennison, University of Tennessee, Knoxville; Dr. A. John Schwarz, University of Tennessee, Memphis; Dr. C. E. Moore, West Tennessee Teachers College, Memphis; Dr. J. B. Lackey, Southwestern University, Memphis; Dr. C. W. Davis, Union University, Jackson; Dr. R. G. Turner, University of Tennessee Junior College, Martin.

Chemistry: Dr. H. W. Robinson, Dr. L. J. Bircher and Dr. John T. McGill, Vanderbilt University, Nashville; Dr. C. O. Hill and Dr. J. H. Robertson, University of Tennessee, Knoxville; Dr. W. A. Webb, George Peabody College, Nashville; Dr. G. H. Hayden, West Tennessee Teachers College, Memphis.

Entomology: Dr. G. M. Bentley and Dr. S. Marcovitch, University of Tennessee, Knoxville.

Forestry: Dr. J. O. Hazard, state forester, Nashville.

Geology: Dr. W. F. Pond, state geologist, Nashville; Dr. L. C. Glenn and Dr. W. B. Jewell, Vanderbilt University, Nashville; Dr. C. H. Gordon and Dr. G. M. Hall, University of Tennessee, Knoxville.

Histology and Embryology: Dr. C. S. Simkins, Dr. D. S. Pankratz and Dr. T. S. Eliot, University of Tennessee, Memphis.

Pharmacology: Dr. P. D. Lamson, Dr. H. A. Wells and Dr. H. S. Wesson, Vanderbilt University, Nashville; Dr. A. Richard Bliss, Jr., University of Tennessee, Memphis.

Physiology: Dr. W. E. Garrey, Dr. R. A. Ashman and Dr. C. E. King, Vanderbilt University, Nashville.

Ornithology: B. B. Coffey, Memphis; A. F. Ganier, Nashville; Dr. C. R. Mayfield, Vanderbilt University, Nashville.

Zoology: Dr. E. E. Reinke, Vanderbilt University, Nashville; Dr. J. M. Shaver, George Peabody College, Nashville; Dr. E. B. Powers and Dr. G. A. Canning, University of Tennessee, Knoxville; Dr. J. B. Lackey, Southwestern University, Memphis.

A. R. BLISS, JR.
Chairman, Executive Committee

SIGMA XI LECTURES AT THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES

FOLLOWING is the complete program of public lectures delivered in the academic year 1931–32 under the auspices of the Sigma Xi Club of the University of California at Los Angeles. The officers of the club for the year were: *President,* Dr. Samuel J. Barnett, chairman of the department of physics, and *Secretary,* Dr. Frederick C. Leonard, chairman of the department of astronomy.

September 30: Dr. Seth B. Nicholson, astronomer, Mt. Wilson Observatory of the Carnegie Institution of Washington, "Sunspots and the Weather" (illustrated).

October 14: Dr. F. L. Ransome, professor of economic