tively identified with the society for many years and has served on the board of managers since 1897. At the same meeting Mr. Henry Gannett, chief geographer of the U. S. Geological Survey was elected vice-president of the society. Mr. Gannett was one of the incorporators of the society in 1888, and has served continuously on the board since that date. At the same meeting Hon. O. P. Austin, chief of the Bureau of Statistics, was elected secretary, Mr. John Joy Edson, president of the Washington Loan and Trust Co., was elected treasurer; Gilbert H. Grosvenor, editor; and Miss Eliza R. Scidmore, foreign secretary.

The society is now entering upon its eighteenth year. It has a total membership of 3,400, of whom 1,125 are residents of Washington, and 2,275 distributed throughout every state in the union and in nearly every country in the world. Its object is the increase and diffusion of geographic knowledge which it accomplishes:

1. Encouraging worthy plans for exploration. The society has sent one expedition to Alaska, another to Mont Pelée, Martinique, and La Souffrière, St. Vincent, and has been associated with several Arctic and other expeditions. At present its representative has direction of the scientific work of the Ziegler Polar Expedition, and is second in command.

2. By publishing an illustrated monthly magazine, the *National Geographic Magazine* and many large maps.

3. By an annual series of thirty addresses delivered in Washington by prominent men. The speakers this year have included Hon. John W. Foster, Wm. E. Curtis, Baron Kentaro Kaneko. Charles Emory Smith, F. H. Newell, Gifford Pinchot, G. K. Gilbert, etc.

4. By the maintenance of a library.

The society has now been established in its handsome new home, Hubbard Memorial Hall, for nearly a year. It was erected as a memorial to the first president of the society by the family of Mr. Hubbard.

SCIENTIFIC NOTES AND NEWS.

AFTER twenty years of service as United States commissioner of labor, Dr. Carroll D. Wright retired from that office on January 31, and went to Worcester, Mass., to assume the presidency of Clark College. His successor, Dr. Charles P. Neill, took charge of the Bureau of Labor on February 1.

FISH COMMISSIONER GEORGE M. BOWERS has been notified of President Roosevelt's desire that he remain at the head of the Bureau of Fisheries during the next administration. The president has several times expressed his approval of the manner in which the affairs of the bureau were being conducted, and it is reported that he recently reiterated his satisfaction, remarking that all he asked for the next four years was a continuance of the energetic and zealous work which has characterized Commissioner Bowers's seven years of service.

PROFESSOR A. AUWERS, the eminent astronomer of Berlin, has been elected an honorary member of the St. Petersburg Academy of Sciences.

THE cross of officer of the Legion of Honor has been conferred by the French government on Dr. Otto Nordenskjöld for his South Polar explorations.

THE Société Nationale d'Agriculture de France has awarded to Professor Wm. B. Alwood, of Charlottesville, Va., a diploma and silver medal for his recent work in pomology, especially as relates to the fermentation of by-products from apples. A gold medal was also awarded the exhibit on Œnological Technology prepared by Professor Alwood for the St. Louis Exposition.

MR. N. H. DARTON, of the U. S. Geological Survey, has been awarded a gold medal for his geological model of the Black Hills, exhibited by the South Dakota Commission at their section in the Mines and Mining building, at the St. Louis Exposition.

DR. G. B. HALSTED'S 'Rational Geometry,' reviewed in SCIENCE last week, is being translated into French by Professor C. Barbarin, president of the Société des sciences physiques et naturelles de Bordeaux. His address on the 'Message of the Non-Euclidean Geometry,' given as vice-president of the American

Association last year, will be translated into Japanese by Yoshio Mikami.

Dr. N. L. Britton, of the New York Botanical Garden, accompanied by Mrs. Britton and Dr. Marshall A. Howe, of the garden, and Dr. C. F. Millspaugh, of the Field Columbian Museum, are at present conducting botanical explorations in the Bahamas. They expect to return at the end of the month.

Dr. L. A. Bauer left for Europe on February 1, to be gone five weeks on business connected with the department of terrestrial magnetism of the Carnegie Institution.

Assistant Professor Harry G. Wells, of the department of pathology and bacteriology, of the University of Chicago, is spending a year in Europe in the study of physiological and pathological chemistry. He is at present in Berlin.

Miss Clara E. Cummings, professor of botany at Wellesley College, sailed on February 1, for Jamaica, where she will spend several months in the study of the flora—particularly the lichens. Part of the time will be spent at the laboratory at Cinchona maintained by the New York Botanical Garden.

During holiday week Professors Gould and Woodruff, of the Department of Geology, University of Oklahoma, conducted a fossil collecting party into the Arbuckle Mountains of Indian Territory. The party secured about 2,000 specimens, among which are a large number of rare *Camerocrinus*. Most of these will be for exchange.

Mr. Chas. T. Brues, now with the Bureau of Entomology of the U. S. Department of Agriculture, has been appointed curator of invertebrate zoology in the Milwaukee Public Museum. Mr. Brues's address will change from Washington to Milwaukee on March 1.

Dr. Emanuel Kusy, Ritter von Dubrav, has been appointed head of the sanitary department of the Austrian Ministry of the Interior.

Mr. R. H. Lock has been appointed assistant curator of the herbarium at Cambridge University, succeeding Mr. Yapp, who was some time ago elected professor of botany at Aberystwyth.

Mr. Bailey Willis, of the U. S. Geological Survey, delivered two lectures at the Johns Hopkins University on January 18 and 19 on the results of his recent work in China under the auspices of the Carnegie Institution. Professor Wm. M. Davis, of Harvard University, will give in February a course of sixteen lectures on geographic subjects to the students of the geological department.

The following members of the assay commission, named by the President and Secretary of the Treasury for 1905, will meet in Philadelphia on February 8 to test the reserved coins of the various mints for the year 1904: Hon. Ellis H. Roberts, treasurer of the United States; Hon. W. B. Ridgely, comptroller of currency; Hon. J. H. Southard, M.C.; Hon. J. B. McPherson, judge, Eastern District of Pennsylvania; Dr. Herbert Torrey, U. S. Assay Office, New York; Milo M. Potter, Los Angeles, California; O. W. Thompson, Vermillion, South Dakota; Benjamin S. Hanchett, Grand Rapids, Michigan; Hon. Warren Truitt, Moscow, Idaho; Charles S. Winslow, Chicago; W. A. Blair, Winston-Salem, N. C.; Col. E. R. Sharp, Columbus, O.; L. A. Fisher, Bureau of Standards, Washington; Dr. John A. Mathews, Syracuse, N. Y.; Dr. Francis H. Smith, University of Virginia; Dr. Leonard P. Kinnicut, Worcester Polytechnic Institute; Dr. Edgar F. Smith, University of Pennsylvania; John Birkinbine, Philadelphia; Edward F. Stotesbury, Philadelphia; and W. H. Anderson, Grand Rapids.

Nature states that Sir James Dewar has presented the proceeds of the Gunning prize, amounting to one hundred guineas, recently awarded to him by the Royal Society of Edinburgh, as a contribution to the fund for the encouragement of research, now being founded in the University of Edinburgh in memory of the late Professor Tait.

Mr. William Sellers, well known as a mechanical engineer and manufacturer of machine tools, has died at Philadelphia, at the age of eighty-one years. Mr. Sellers was a member of the National Academy of Sciences and of the American Association for the Advancement of Science.

M. PAUL HENRY, the French astronomer, died on January 4, as a result, it is said, of cold in the Alpine Observatory on Grand-Montrouge. This was also the cause of the death of his brother, Prosper, who died in 1903. The brothers are well known for the work that they carried on together in astronomical photography especially in connection with the great international chart of the heavens.

PROFESSOR ERNST ABBE, of Jena, well known for his important improvements in the microscope and other optical instruments, which he constructed in partnership with Karl Zeiss, died on January 16, at the age of sixty-four years.

MR. THOMAS W. SHORE, a British geologist and archeologist, died on January 15.

MR. J. M. BACON, known for work in astronomy, acoustics and meteorology, and especially for his balloon ascents, died on December 25, at the age of fifty-eight years.

THE Department of Health of New York City has decided to establish a research laboratory in the new laboratory building which is being erected.

THE budget of the ministry of the interior of the German empire includes an item of $37,500 for research work on tuberculosis.

THE restored pterodactyl, with a spread of wings of twelve feet, first exhibited at the St. Louis exposition, has been set up for exhibition in Peabody Museum of Yale University.

Bird-Lore for February contains the annual report of the National Committee of Audubon Societies, a document of some eighty pages. The report summarizes the history of the Audubon movement and gives most encouraging details of the year's progress. Societies are now established in thirty-five states, and a model bird law has been passed in twenty-eight states. Thirty-four wardens to guard colonies of nesting birds are employed, and the societies cooperate with national and state game officials. President Roosevelt, who is in hearty sympathy with Audubon work, has set aside certain government lands as perpetual breeding places for birds, and the Lighthouse Board has lent its powerful aid in protecting sea-birds along the coast. The National Committee, which acts as an executive body for all the state societies, has recently become incorporated and proposes to attempt to raise an endowment fund of one million dollars, of which one hundred thousand dollars has already been promised.

BULLETIN No. 79 of the New York State Museum gives a comprehensive account of the mosquitoes occurring in New York State, with special reference to methods of control. Some 55 species are treated, the larvæ or wrigglers of 43 being described, with accounts of their habits and life history. Tables for the separation of adults and larvæ are given, and the value of the work is enhanced by over 100 original line drawings and 57 process plates reproduced from the author's photomicrographs. The keys and illustrations should enable physicians, and in fact almost any person having a fair microscope at his disposal to identify most of the common forms either in the adult or larval stage. This bulletin should also appeal to teachers interested in nature study since no group of insects lends itself more readily to class room conditions.

ACCORDING to the *British Medical Journal* the medical profession is fairly well represented in the senate of Canada as well as in the Canadian House of Commons. There are nine in the former and fifteen in the latter body. In the United States Senate there are only two, while there are none in the House of Representatives. France is still the country where medical men are most prominent in politics; in the Senate there are thirty-nine, and in the Chamber of Deputies fifty-one.

THE *Geographical Journal* states that an important expedition for the purpose of exploring the interior of Dutch New Guinea, organized under the auspices of the Netherlands Geographical Society, started early in 1904. The leader is Mr. R. Posthumus Meyjes, who has with him various assistants, including Dr. Koch as natural history collector. On the way out to the East, Mr. Meyjes stopped at Florence, where he met and consulted with Sir W. MacGregor, the naturalist; travelers Beccari and Loria, and Professor Giglioli. After the arrival at Batavia, some

time was taken up in preparations, including arrangements for coolies, military escort, and so forth. Arriving at Merauke (New Guinea) on April 5, Mr. Meyjes did some preliminary work in the way of surveys and observations on the south coast of New Guinea, making a trip also to Thursday Island in order to connect his surveys with previously fixed positions. At the date of his last letter, Mr. Meyjes had returned to Surabaya and Batavia to make the final arrangements for the main expedition.

The *Scottish Geographical Magazine* is informed by Mr. W. S. Bruce that the Argentine relief ship *Uruguay* sailed from Buenos Ayres for the South Orkney Islands, to relieve the meteorological party at the station there about the middle of December. We may therefore expect the arrival of Mr. R. C. Mossman about the end of February. Progress is being made with the working out of the collections by various specialists, amongst whom may be named Professor J. Arthur Thomson, who is doing the Alcyonaria; Professor Hepburn, the histology of the Weddell seal; Dr. Watersten, penguin development; Mr. W. Eagle Clarke, the birds; Mr. R. M. Clark, the plankton; Mr. T. V. Hodgson, Pycnogonids and Isopods; Sir Charles Eliot, Nudibranchs.

Reuter's Agency is informed by the Pacific Cable Board that by an arrangement between the Washington and Sydney Observatories, with the cooperation of the telegraph administrations concerned, time signals were sent on New Year's Eve from the Washington Observatory to the Sydney Observatory. Mr. Lenahan, of the Sydney Observatory, reports as follows: "The first set of signals were received satisfactorily, the 3 P.M. contacts being recorded here at 3 hr. 0 min. 3/57 sec. The second set, only 30 signals, were received altogether, the 4 P.M. signal reaching here at 4 hr. 0 min. 3/66 sec. The third set was satisfactory, the 5 P.M. signal reaching here at 5 hr. 0 min. 2/76 sec. The fourth set was satisfactory, the 6 P.M. signal reaching here at 6 hr. 0 min. 2/55 sec., the final mean being 3/14 sec. Cutting out the second set, the mean gives 2/90 sec. This concludes the arrangements at present existing, and the rapid time in sending the great distance separating Sydney and Washington, over 12,000 miles, is a triumph to the electrical departments of the states concerned. With many thanks and every good wish for the new year." The signals through the Vancouver-Fanning cable, the longest cable span in the world (3,457.76 nautical miles), were sent by automatic apparatus, and were recorded, as they passed, at the Vancouver station on an instrument placed in the artificial line which balances the cable for the purpose of duplex working. The signals consisted of second contacts, omitting the 30th and last five of each minute, except the last minute of the hour, when the 30th and all after the 50th second were omitted, the circuit closing with a long dash on the even hour. The signals were sent for five minutes before the hour from 3 P.M. to 6 P.M., Sydney time, equivalent to midnight to 3 A.M. Washington time.

It is stated in *Nature* that the committee for the scientific exploration of Lake Tanganyika (consisting of Sir John Kirk, Dr. Sclater, Sir W. Thiselton-Dyer, Professor Lankester, Dr. Boulenger and Mr. J. E. S. Moore) has lately received news of the progress of its envoy, Mr. W. A. Cunnington, who left England in March, 1904, under directions to continue the researches carried out by Mr. J. E. S. Moore during his two expeditions to Lake Tanganyika. Proceeding by the Zambesi and Shiré route, Mr. Cunnington was most kindly received at Zomba by Sir Alfred Sharpe, who granted him the assistance of two native collectors. Mr. Cunnington had instructions to devote his special attention to the lacustrine flora and fauna of Lake Tanganyika, and, as he passed up Lake Nyassa, began his investigations in that lake, in order to be able to compare its products with those of Tanganyika. On Lake Nyassa Mr. Cunnington was able to get a good number of tow-nettings from different parts of the lake's surface, and obtained, on the whole, a large quantity of its characteristic phytoplankton, besides a considerable amount of zoo-plankton, consisting mostly of Copepoda, Cladocera and insect-larvæ. The temperature of the water of Lake Nyassa was observed

to fall seldom below 70°, while the temperature at 76 fathoms below the surface was ascertained to be about three degrees higher. Mr. Cunnington arrived at Karonga, at the head of Lake Nyassa, at the end of June, 1904, and traveled on to Tanganyika by the ordinary route of the Stevenson road. His last letters from Tanganyika are dated at Vua, on October 29, 1904. He had obtained a dhow from Ujiji, which enabled him to make his stay at different places on the lake longer or shorter according as he found much or little to collect. A good series of fishes had been preserved, and many freshwater crustaceans. As regards the vegetable life, Mr. Cunnington had been much struck by the near resemblance of all the forms obtained in Tanganyika to those which he had collected in Nyassa, though he could not say that they were specifically identical. From Vua, Mr. Cunnington had arranged to cross to the east coast of the lake, and to go some distance further north before returning to the western shore. Mr. Cunnington may be expected to return to England before the end of the year.

THE annual general meeting of the Association of Teachers in Technical Institutes was held at London on January 18. According to the London *Times,* the chairman, in opening the proceedings, said that the association had been constituted in October, when a committee had been formed for the purpose of drafting a constitution and rules. The purpose of the present meeting was to consider the constitution and rules which had now been drafted, and to elect officers for the association. They were all agreed upon the necessity for some association which should form a union of teachers in polytechnics and technical institutes of all kinds. Two hundred members had already joined; and he believed that when they had made a start and the association had become a national one they would have a very large number of members, and their body would play an important part in organizing tertiary education in this country. After the chairman's address, the members ballotted for the election of officers with the result that Mr. W. J. Lineham was elected chairman, Mr. J. B. Coleman, Mr. C. Harrap and Mr. S. G. Sterling, vice-chairmen, and Mr. J. Wilson, secretary. The following are the objects of the association, which were drawn up by the provisional committee, and agreed to after discussion: (*a*) The advancement of technical education generally; (*d*) the interchange of ideas regarding the methods of technical teaching; (*c*) the promotion and safeguarding of professional interests in such matters as tenure, salaries, pensions, registration, training and qualification of teachers, schemes of examination and inspection; (*d*) to lay the views of technical teachers before the various educational authorities and the public; (*e*) to enable teachers in technical institutes to cooperate as a body with other educational or scientific associations where desirable; (*f*) to render legal advice and assistance to members wherever possible and desirable; (*g*) to institute an employment bureau; and (*h*) to create a benevolent fund for needy members as soon as the society shall be strong enough to do so. It was further agreed that all teachers in technical institutes should be eligible for membership with the exception of those who are engaged solely in secondary school work, a technical institute being defined as any institution existing mainly for the teaching of science or art as applied to industries or crafts.

THE London *Times* prints daily an extract from its issue of a hundred years ago. The first extract of a scientific character that we have noticed is from the issue of January 23, 1805, and reads as follows: "It is not long since we heard, from Prussia, of a variety of experiments for extracting sugar from the beet-root (*beta* of the *pentandria digynia* of Linnæus). We were told, that a square plot of twenty-four miles, in the dominions of Frederic William, were to be devoted to this produce; and that the kingdom, ever after, would be rendered perfectly independent of the West India Islands, for a supply of the saccharine material. Whether the controversy of P. Terentius, and Varro Atacinus, on the antiquity of the use of this commodity, be of any importance, we will not affect to determine, but we may venture to assert, that the discovery of M. Achard, for the prepara-

tion of sugar from the vegetable we have named, deserves not only the attention of the chemist, but of the politician, considering the expanded interests of Europe and Africa as connected with the state of the Western Archipelago. The method of M. Achard is as follows: The roots are first carefully cleansed from all impurity; they are then cut into small pieces, and exposed to the bearing of a powerful press. The sugar under this process exudes from the vegetable mass, and in this state it appears glutinous, and of a dark color. Besides the saccharine matter, it abounds with albumen, extractive matter, and other substances, which must be separated from it; and the only difficulty attending the operation, is the exclusion of these impure and redundant ingredients. To effect this, he mixes in a cauldron of tin, or of tinned copper, one hundred pounds of the extract, in the state we have described, with three ounces and six drams of the sulphuric acid diluted in about a pint of water. The ingredients are afterwards poured over into vessels, to remain for the space of twelve, eighteen, or twenty-four hours. Twelve hours is a competent interval for ordinary purposes, but twenty-four is more beneficial, and the acid prevents the sugar itself from undergoing any pernicious alteration. The next step is, to separate the sulphuric acid from the extract; and this is done, by incorporating with the sugar seven ounces and a half of wood ashes, and afterwards two ounces and six grains of slacked lime. By these means, the sulphuric acid will disunite from the albumen, and the ashes with the lime will separate the acid, which will appear in the state of an insoluble salt. The application of lime is not at all new in our sugar refineries, indeed, it is constantly employed to assist the crystallization. The only thing requisite to complete the process of obtaining sugar from the beet root, is to clarify the saccharine residuum, and this part of the operation is so generally understood, that no explanation is necessary."

UNIVERSITY AND EDUCATIONAL NEWS.

The Union Theological Seminary of New York City, one of the few theological schools of university standing, has received an anonymous gift of $1,100,000, which includes a site adjacent to Columbia University, where new buildings will be erected for the seminary.

Mr. Bradford Merrill, of the New York *World,* has made a statement on behalf of Mr. Joseph Pulitzer in regard to the school of journalism established by him at Columbia University. It appears from this statement that Mr. Pulitzer has decided that the school shall not be established until after his death. Mr. Merrill says: "To avoid all uncertainties or misconception, I may add that the endowment of the college is absolutely irrevocable, and its establishment beyond a shadow of doubt. The first million is already in the actual possession of Columbia University. The second million is legally provided for, as well as a still further voluntary sum not mentioned in any agreement. Even the nomination of the advisory board is made in an instrument that will take effect instantaneously at Mr. Pulitzer's death."

Mr. Andrew Carnegie's gift of $125,000 to Oberlin College for the erection of a library building, which we recently noted, was conditioned upon the raising of $100,000 for endowment. The gift of Mr. Carnegie makes up $300,000 of the $500,000 necessary to secure the $100,000 given by an anonymous Boston donor. To secure the latter, $200,000 must be raised by July 1, 1905.

Mrs. Goldwin Smith has given $20,000 to Cornell University.

By the will of the late Edward A. Goodnough, of Worcester, gifts are made as follows: $25,000 to Mount Holyoke College, $15,000 to Iowa College, $25,000 to the Huguenot Seminary in South Africa, $5,000 to Washburn College in Kansas, $10,000 to Drury College in Missouri.

Sir John Nutting, of Dublin, has given $25,000 to Trinity College for scholarships.

Dr. Eugene Park Cowgill, of the University of Missouri, was recently elected to the position of instructor in physiology, University of Kansas. He began his duties with the opening of the new year.