

the session: Messrs. Agassiz, Allen, Becker, Billings, Boas, Boss, Brewer, Brooks, Brush, Cattell, Chittenden, Councilman, Dall, Davis, Dutton, Emmons, Gill, Hague, Langley, Merriam, Mitchell, Morse, Newcomb, Nichols, Osborn, Peirce, Putnam, Remsen, Walcott, Webster, Welch, Wells, White, Wood and Woodward.

The following papers were presented:

EDWARD L. NICHOLS: 'The Mechanical Equivalent of Light.'

DR. H. C. WOOD and DR. DANIEL M. HOYT: 'The Effects of Alcohol upon the Circulation.'

ALEXANDER AGASSIZ: 'The Expedition of the U. S. Fish Commission Steamer *Albatross*, in charge of Alexander Agassiz, in the Eastern Pacific, Lieut. Commander L. M. Garrett, commanding.'

WILLIAM M. DAVIS: 'Resequent Valleys.'

WILLIAM M. DAVIS: 'The Geographical Cycle in an Arid Climate.'

W. W. CAMPBELL: 'A Catalogue of Spectroscopic Binary Stars.'

C. D. PERRINE (introduced by W. W. Campbell): 'Discovery of the Sixth and Seventh Satellites of Jupiter and their Preliminary Orbits.'

W. K. BROOKS: 'The Axis of Symmetry of the Ovarian Egg of the Oysters.'

John C. Branner, of Stanford University; William H. Holmes, of the Bureau of American Ethnology; William H. Howell, of Johns Hopkins University; Arthur A. Noyes, of the Massachusetts Institute of Technology, and Michael I. Pupin, of Columbia University, were elected members of the academy.

M. Henri Becquerel, of Paris, and Professor Paul von Groth, of Munich, were elected foreign associates.

SCIENTIFIC NOTES AND NEWS.

PROFESSOR E. B. FROST has been appointed director of the Yerkes Observatory by the trustees of the University of Chicago, in succession to Professor G. E. Hale, who gives his whole time to the establishment of the new Solar Observatory of the Carnegie Institution at Mt. Wilson, Cal.

DR. WILLIAM OSLER has been elected an honorary fellow of the Royal College of Physicians of Ireland.

THE Baltimore correspondent of the N. Y. *Evening Post* states that at the request of Miss Mary E. Garrett, the benefactress of the medical department of Johns Hopkins University, Dr. W. H. Welch, Dr. W. S. Halstead and Dr. H. A. Kelly will meet Dr. William Osler in London in June, to sit for a group portrait to be painted by John S. Sargent.

THE Vienna Laryngological Society appointed Señor Manuel Garcia, on the occasion of his one hundredth birthday, to be an honorary member of the society. Professor Chiari, the president, handed the diploma of honorary membership to Señor Garcia.

PROFESSOR JOHN F. JAMESON, head of the department of history at the University of Chicago, has been offered the post of director of the Bureau of Historical Research in the Carnegie Institution, Washington, D. C. This position is vacant through the return of Professor J. Lawrence Laughlin to the University of Michigan.

PROFESSOR BASHFORD DEAN, of Columbia University, plans to spend several months in Japan, where he will continue his studies on the development of the ancient sharks, *Cestracion* and *Chlamydoselachus*. He will be the guest of the Imperial University of Tokyo.

PROFESSOR H. S. GRAVES, director of the Yale School of Forestry, who has been in India, is expected to return next month.

DR. ALBERT F. WOODS, of the Bureau of Plant Industry, has been delegated to attend the Second International Botanical Congress, to be held at Vienna in June, and the International Congress of Agriculture at Rome.

DR. D. H. CAMPBELL, of Stanford University, will spend next year in an extensive trip through Europe, Africa and Asia. He expects to attend the International Botanical Congress at Vienna and the meeting of the British Association at Cape Town, and hopes to be able to make botanical investigations in the newly opened regions about the Victoria and Zambesi falls. He will then visit Bombay and Ceylon and will spend some time at the Botanical Gardens at Buitenzorg, Java, returning

to the United States by way of the Philippine Islands.

PROFESSOR WILLIS L. JEPSON, of the botanical department of the University of California, will spend next year in Europe and in the tropics, gathering material for the botanical museum at Berkeley.

DR. HARRY PERKINS, of the University of Vermont, has received an appointment for the summer at the Marine Biological Laboratory of the Carnegie Institution at Dry Tortugas, near Key West.

M. ED. CASPARI has been elected president of the French Astronomical Society.

PROFESSOR M. TRAUB has been appointed director of the newly established department of agriculture of Java.

Nature states that the Irish branch of the Geological Survey has been transferred from the Board of Education to the Department of Agriculture and Technical Instruction for Ireland. The work will be carried on under the immediate direction of Professor G. A. J. Cole.

MR. C. A. SELEY, mechanical engineer of the Chicago, Rock Island and Pacific Railroad, delivered an address before the students and professors of Purdue University on April 11. His subject was 'Framing of Passenger and Freight Cars.'

PRINCE PEDRO OF ORLEANS AND BRAGANZA, son of the Comte d'Eu, who has already visited that part of Central Asia, contemplates making a fresh tour in Chinese Turkestan.

At a meeting of the Royal Geographical Society on April 10 Lieutenant-Colonel C. C. Manifold read a paper on the 'Problem of the Upper Yang-tsze Provinces and their Communications.'

ON March 28, Dr. Fridjof Nansen presented a paper before the Royal Geographical Society on 'Oscillations of Shore-lines'; discussion followed, which was taken part in by Sir Archibald Geikie, Sir John Murray, Admiral Sir W. J. L. Wharton, Mr. Peach, Mr. A. Strahan, Mr. Huddleston, Dr. Mill, Dr. Hull and others.

Nature states that portraits recently added to the National Portrait Gallery include those of Sir Charles Lyell, Charles Darwin and Professor W. Whewell.

Plans are being made to erect a memorial to the late president, Thomas M. Drown, of Lehigh University. It will take the form of a club house for the faculty and students, and will be erected at a cost of \$80,000.

COLONEL NICHOLAS PIKE, known for his contributions to the natural history of birds, reptiles and amphibia, died at his home in Brooklyn, on April 11, in his eighty-eighth year. A naturalist of the old school, he was the author of interesting notices on the life-history and habits of a number of rare forms, especially among the amphibia. For several years he held the post of American consul in the island of Mauritius, and during this time he collected extensively the local fauna and prepared from the living specimens many colored drawings. Especially noteworthy were the albums of the fishes of the Indian Ocean, some of which illustrated species which were later described by Louis Agassiz. His most extended work was his 'Sub-Tropical Rambles in the Land of the Aphanopteryx.'

PROFESSOR LEBEN WARREN, for twenty-seven years professor of mathematics at Colby College, died on April 21, at the age of sixty-nine years.

MR. H. B. MEDLICOTT, F.R.S., director of the Geological Survey of India from 1876 to 1887, died on April 6, at seventy-six years of age.

WE learn from *The Experimental Station Record* that Professor Emerich Meissl, of the Austrian ministry of agriculture, died on February 15 at the age of fifty years. Professor Meissl was for more than twenty years connected with the agricultural experiment station at Vienna, being director from 1886 to 1898. At that time he was called to the ministry of agriculture as an agricultural-technological expert, and was promoted to the charge of a section in the ministry in 1902, which position he occupied at the time of his death. He was widely known among agricul-

tural chemists, having made many contributions upon agricultural analysis, and the chemistry of sugars, milk, and the fermentation industries.

DR. GEORG MEISSNER, formerly professor of physiology at Göttingen, died on March 30, at the age of seventy-four years.

AT a meeting of the council of the American Anthropological Association held in New York on April 15 it was voted to hold a special meeting of the association in Portland, Oregon, during the Centennial Exposition. The members of the council present were: Messrs. Boas, Chamberlain, Culin, Farrand, Gordon, Hodge, Hyde, MacCurdy, Pepper, Putnam, Saville and Smith.

The Experiment Station Record states that it has been decided to locate the new buildings for the Department of Agriculture 106 feet farther west, and to sink the structures 10 feet lower in the ground than was previously planned. This decision is in accordance with the plans of the park commission appointed by the senate some years ago. The details which have been worked out by this commission since the publication of their report make the above changes necessary in order to conform to the general scheme in the matter of the grade and the relative position of buildings. As the excavation for the two laboratory wings as originally located had been completed, these changes will involve some delay in the work.

THE King Institute of Preventive Medicine at Guindy was formally opened, on March 11, by Lord Ampthill, governor of Madras.

MR. ALFRED BEIT has increased his donation to the London Institute of Medical Sciences from £5,000 to £25,000.

WE learn from *The Athenæum* that at a recent meeting of the Institut de France the disposition of 30,000 francs forming the Debrousse legacy was the chief subject of discussion, and M. Poincaré's report recommended the following appropriations: Publication of the 'Tables de la Lune,' 5,000 fr.; *Journal des Savants*, 5,000 fr.; 'catalogue' of the works of Leibnitz, 3,000 fr.; for the study of the 'tuniciers' at Naples, 3,000 fr.; for the

work in connection with the installation of the library at Chantilly, 7,000 fr.; and for the introduction of a seismographic apparatus at the Paris Observatory, 3,000 fr. The remaining sum of 4,000 fr. is carried over to next year's account.

THE New York Botanical Garden announces the following spring lectures, to be delivered in the Lecture Hall of the Museum Building of the Garden, Bronx Park, on Saturday afternoons, at 4:30 o'clock:

April 29.—'The Indian and his Uses for Plants,' by Mr. Frederick V. Coville.

May 6.—'The Pines and their Life History,' by Professor Francis E. Lloyd.

May 13.—'Botanical Aspects of Deserts of Arizona, California, Sonora and Baja California,' by Dr. D. T. MacDougal.

May 20.—'The Coralline Seaweeds,' by Dr. Marshall A. Howe.

May 27.—'Cuba,' by Dr. W. A. Murrill.

June 3.—'Vegetable Poisons and their Strange Uses,' by Dr. H. H. Rusby.

WE learn from *Nature* that at the annual meeting of the Iron and Steel Institute, to be held on May 11 and 12, the Bessemer gold medal for 1905 will be presented to Professor J. O. Arnold. The awards of the Andrew Carnegie gold medal and research scholarships will be announced; and the president, Mr. R. A. Hadfield, will deliver his inaugural address. The following is a list of papers that are expected to be submitted: 'Experiments on the Fusibility of Blast Furnace Slags,' Dr. O. Boudouard; 'Recent Developments of the Bertrand-Thiel Process,' Mr. J. H. Darby and Mr. G. Hatton; 'The Application of Dry-air Blast to the Manufacture of Iron,' Mr. James Gayley; 'The Effect Produced by Liquid Air Temperatures on the Mechanical and other Properties of Iron,' Mr. R. A. Hadfield; 'The Cleaning of Blast Furnace Gas,' Mr. Axel Sahlin; 'The Failure of an Iron Plate Through Fatigue,' Mr. S. A. Houghton; 'The Continuous Steel-making Process in Fixed Open-hearth Furnaces,' Mr. S. Surzycki; 'Accidents Due to the Asphyxiation of Blast Furnace Workmen,' Mr. B. H. Thwaite; and 'The Behavior of the Sulphur in Coke in the Blast Furnace,' Professor F. Wüst and Mr. P. Wolff.

AN optical convention will be held in London from May 31 to June 3. In addition to papers that will be published in a volume, there will be an exhibition of optical and scientific instruments of British manufacture. Dr. R. T. Glazebrook, director of the National Physical Laboratory is president, and the vice-presidents include Lord Kelvin, Lord Rayleigh, The Earl of Ross, Sir Howard Grubb, Sir W. H. M. Christie and Sir Wm. de W. Abney.

REUTER'S AGENCY is informed that the Duc d'Orléans has organized a North Polar expedition which will leave for the Arctic under the duke's personal leadership next month. For the purpose of the expedition the *Belgica*, the vessel of the recent Belgian Antarctic expedition, has been secured, together with the services of Lieutenant Gorchakov, who will again command the ship on the present occasion. The object of the expedition is not to reach the North Pole, and, according to present arrangements, the duke will not winter in the Arctic, although the *Belgica* will be provisioned for the event of her being closed in by the ice. The expedition will leave Norway probably on May 1 and proceed direct to Franz Josef Land, where it is believed that an attempt will be made to push northwards by way of a new channel. The duke's staff will include some French scientists and a number of Norwegian sailors. The duke will sail under the French flag. It is pointed out that as the season is early this year it is probable that the *Belgica* will find little difficulty in gaining the shores of Franz Josef Land. The scheme of pushing up a new channel is not unattended with danger, owing to the force with which the ice pack is driven down by the strong currents. It was owing to this cause that the *Eira*, of Leigh Smith's expedition, was sunk off Cape Flora and that the *Duca degli Abruzzi's* vessel was also pierced by the ice pack. No doubt a lookout will be kept for the members of the American Ziegler expedition, who are still in the Arctic.

THE sundry civil bill for 1906, passed by the last congress, contains an item of \$200,000 appropriated to the United States Geological

Survey for the purpose of gaging streams and determining water supply. With this sum it is proposed to continue the work of measuring streams in all parts of the United States and of collecting data that will be helpful in promoting water powers and irrigation projects, and valuable in determining the quality of water best suited for domestic and municipal purposes and for manufacturing enterprises. Estimates of the daily flow of important rivers are needed by engineers and investors, as is shown by the many requests for such information received from all parts of the country. It is believed that more than \$5,000,000 is annually expended in new projects that are stimulated largely by facts that have been ascertained officially during years of careful observation.

THE New York *Evening Post* states that Dr. Otto Klotz, government astronomer of the Dominion of Canada, has been in Cambridge recently, arranging with the Harvard Observatory for a station to perfect his series of longitude observations made in the interest of the Dominion Government. This work was instituted upon the completion of the British transpacific cable a few years ago. Dr. Klotz and his party made longitude connections beginning at Ottawa, at Vancouver, Fanning Island, the Fiji Islands, Norfolk Island, Queensland, Australia and Sidney, N. S. W., where his series met a like series from Greenwich eastward to Sidney. This completed the circuit of the world for the first time in work of this character, an event that culminated actually on the night of September 27, 1903. The work involves the setting up of a firm pier of cement or brick at each of the stations, on the top of which is a point, the longitude of which is determined with the utmost possible accuracy. The observers' clocks at two stations are telegraphically connected during observation, and the error determined with extreme refinement. It is to set up such a pier at Harvard that Dr. Klotz has come, and he has been promised the hearty cooperation of Professor E. C. Pickering and his staff in carrying out his project. This step connects the Canadian transcontinental longitude se-

ries at one end with the American series, and ultimately there will be a similar connection established between Vancouver and Seattle, thus completing the loop.

TOPOGRAPHERS and geologists of the United States Geological Survey will be at work during the coming summer in the region south and east of Tonopah, Nevada. A party of fifteen or twenty topographers under the direction of Mr. R. H. Chapman will go into the field about the middle of May. They will make surveys for three topographic maps. Two of these maps will be detail maps made by Mr. William Stranahan, one of the Goldfield district, which is $23\frac{1}{2}$ miles southeast of Tonopah, and one of the Bullfrog district, which is about 60 miles east of Goldfield. The Goldfield map will cover approximately 40 square miles and will be drawn on a scale of 2,000 feet to the inch. Triangulation and leveling will be carried from Owens Valley to get control for the Bullfrog map, which will also be drawn on a scale of 2,000 feet to the inch. The third map will be a reconnaissance map of an area about 120 miles long by 90 miles wide, or about 10,000 square miles, south and southeast of Goldfield. It will include Goldfield in its northwest corner. The reconnaissance map will include part of the Death Valley. Levels for the control of all this work are now being carried forward from Mohave by a topographic party under the direction of Mr. R. H. Farmer. It is hoped that there will be an opportunity of running a level line to find the correct elevation of Death Valley. Mr. E. M. Douglas, chief of the western section of topography has computed that the lowest point in the Valley is 450 feet below sea level, which makes it the lowest point in the United States, but the elevation has never been accurately and incontestably determined. Geologic studies in these same Nevada areas will be prosecuted during the summer under the direction of Mr. J. E. Spurr. With the assistance of Mr. S. H. Ball, Mr. Spurr will investigate the general geology of the district covered by the reconnaissance map. Mr. Spurr will also make a special report on the geology of the mining camps in

this area. A third report will have to do with the geology of the Goldfield district. Mr. Spurr will be assisted in this last inquiry by Mr. G. H. Garrey.

UNIVERSITY AND EDUCATIONAL NEWS.

A TEACHING observatory will be established by the Ontario government at the University of Toronto. Dr. C. A. Chant expects to visit the observatories of the United States to study their plans and methods.

THE main building of Vanderbilt University was destroyed by fire on April 20.

THE Suez Canal Company has voted 50 guineas to be announced at the banquet over which Mr. Chamberlain will preside on May 10, on behalf of the London School of Tropical Medicine, this being a gift in recognition of the school's services in the tropics.

THE Geological Department of Colby College, Waterville, Maine, has been abolished by the trustees of the college, the reason assigned for the action being a financial one. Professor W. S. Bayley, who has been in charge of the department during the past sixteen years will therefore sever his connection with the institution at the close of the present college year.

DR. CHARLES M. BAKEWELL, assistant professor of philosophy in the University of California, has been elected to a professorship of philosophy in Yale University.

MR. CHARLES W. BROWN, of Lehigh University, has been appointed instructor in geology in Brown University.

FELLOWSHIPS in zoology and entomology at the Ohio State University have been granted respectively to Mr. C. F. Jackson, of De Pauw University, and Mr. W. B. Herms, of German Wallace College, Berea, Ohio.

PROFESSOR WALTER KÖNIG, of Greifswald, has accepted a professorship of physics in the University of Giessen.

THE council of University College, London, has appointed Sir Thomas Barlow to the Holme Chair of Clinical Medicine, vacant through the resignation of Professor F. T. Roberts.