

of various zoological and botanical subjects; Mr. Carus-Wilson's specimens of decomposed flints; Wehnelt's electrolytic contact breaker, which seems capable of producing extraordinary results; Mr. Everard im Thurn's beautiful water-color sketches of Guiana orchids; Mr. Shelford Bidwell's experiments demonstrating multiple vision; Mr. Joseph Goold's intersection patterns in compound-vibration curves; Sir Norman Lockyer's photographs of stellar spectra, and a very delicate and threadlike photograph of a meteor taken by Mr. C. P. Butler on the night of April 8, 1899.

Among the new instruments which specially attracted attention was the radiation recorder of Professor H. L. Callendar, so delicate that it shows when the slightest haze passes across the sky. The microscopic specimens illustrating the further researches which have been made into the effects of strain in metals by Professor Ewing and Mr. W. Rosenhain are noteworthy. Mr. A. Mallock's ingenious adaptation of thin films of pyroxyline for use as mirrors deserves mention, as do also Mr. H. N. Dickson's series of charts illustrative of temperature and salinity in the North Atlantic. The lantern exhibitions were particularly attractive, especially Mr. Kearton's slides illustrating the haunts and habits of British birds. Dr. Sorby also used the lantern to show some beautiful slides of Actinæ and other marine animals, and Mr. W. Duddell, oscillographs, applied to alternate current wave-forms, and to the Wehnelt interrupter.

SCIENTIFIC NOTES AND NEWS.

THE next meeting of the American Society of Naturalists will be held at New Haven, Conn., during Christmas week. Most of the 'affiliated societies' have signified their intention of meeting at the same place.

At the annual meeting of the American Academy of Art and Sciences, held May 10, 1899, the Rumford medal was, on the recommendation of the Rumford Committee, awarded to Mr. Charles F. Brush, of Cleveland, for 'the Practical Development of Electrical Arc Lighting.'

PROFESSOR C. F. CHANDLER, of Columbia Uni-

versity, has received the regular nomination for President of the Society of Chemical Industry. The election takes place in July at the annual meeting. This Society numbers 3,200 chemists, of whom nearly 600 reside in the United States. Its headquarters are in London; it has sections also in Liverpool, Newcastle, Nottingham, Glasgow, Leeds, Manchester and New York. In the list of former Presidents appear the names of Sir Henry E. Roscoe, Sir Frederick Abell, Walter Welden, W. H. Perkin, E. K. Muspratt, David Howard, Professor James Dewar, Ludwig Mond, Sir Lowthian Bell, E. Rider Cook, J. Emerson Reynolds, Sir John Evans, E. C. C. Stanford, T. E. Thorpe, Thomas Tyrer, Dr. Edward Schunck, F. Clowes and George Beilby.

CAMBRIDGE UNIVERSITY has conferred the honorary degree of Doctor of Science on Sir William Turner, professor of anatomy of the University of Edinburgh, and on the Rev. Thomas Wiltshire, emeritus professor of geology in King's college, London.

At the annual meeting of the American Academy of Arts and Sciences on May 10, 1899, the following officers were elected: *President*: Alexander Agassiz; *Vice-President* for Class I.: John Trowbridge; *Vice-President* for Class II.: Alpheus Hyatt; *Vice-President* for Class III.: Augustus Lowell; *Corresponding Secretary*: Samuel H. Scudder; *Recording Secretary*: William Watson; *Treasurer*: Francis Blake; *Librarian*: A. Lawrence Rotch; *Member of the Committee of Finance*: Augustus Lowell; *Councillors* from Class I.: Henry Taber, Theodore W. Richards, Harry M. Goodwin; *Councillors* from Class II.: Benjamin L. Robinson, William T. Councilman, John E. Wolff; *Councillors* from Class III.: Barrett Wendell, Edward Robinson, James B. Ames; *Rumford Committee*: Erasmus D. Leavitt, Edward C. Pickering, Charles R. Cross, Amos E. Dolbear, Arthur G. Webster, Theodore W. Richards, Thomas C. Mendenhall; *C. M. Warren Committee*: Francis H. Storer, Charles L. Jackson, Samuel Cabot, Henry B. Hill, Leonard P. Kinnicut, Arthur M. Comey, Robert H. Richards.

THE following 15 candidates have been selected by the Council of the Royal Society to be

recommended for election into the Society: Professor William F. Barrett, Mr. Charles Booth, D.Sc., Major David Bruce, A.M.S., Mr. Henry John Horstman Fenton, M.A., Mr. James Sykes Gamble, Professor Alfred Cort Haddon, Dr. Henry Head, Professor Conwy Lloyd Morgan, F.G.S., Mr. Clement Reid, F.G.S., Professor Henry Selby Hele Shaw, M.Inst.C.E., Dr. Ernest Henry Starling, Professor Henry William Lloyd Tanner, M.A., Mr. Richard Threlfall, Mr. Alfred E. Tutton, B.Sc., Professor Bertram Coghill Allen Windle, M.D.

DR. L. A. BAUER has resigned his position as assistant professor of mathematics and mathematical physics at the University of Cincinnati, in order to accept the position of Chief of the newly-formed Division of Terrestrial Magnetism, of the United States Coast and Geodetic Survey. To this Division has been assigned the magnetic survey of the United States and the countries under its jurisdiction and the establishment of magnetic observatories. Dr. Bauer has also been appointed lecturer in terrestrial magnetism at the Johns Hopkins University. The journal *Terrestrial Magnetism and Atmospheric Electricity*, beginning with the June number, will hereafter be issued from the Johns Hopkins University Press, Dr. Bauer continuing as editor-in-chief.

COMMISSIONER-GENERAL PECK has appointed Dr. Tarleton H. Bean Director of Forestry and Fisheries of the United States Commission to the Paris Exposition of 1900.

PROFESSOR EDGAR FRISBIE, of the U. S. Naval Observatory, having attained the age limit prescribed by the U. S. Navy, will retire on May 22d.

DR. G. LINDAU has been appointed Custodian of the Imperial Botanical Museum of Berlin.

Nature states that Mr. F. V. Bennett, who joined the Geological Survey of England in 1868, has resigned from the staff. During his long service he has mapped large areas of the Cretaceous, Tertiary and drift deposits in the eastern counties in Surrey, Berkshire and Wiltshire.

THE daily papers state that the gold medal of the American Geographical Society will be presented to Sir John Murray, the celebrated

naturalist, on the occasion of the annual meeting of the Royal Geographical Society in June. The presentation will be made by United States Ambassador Choate.

THE Council of the Institution of Civil Engineers have made the following awards for papers read and discussed before the Institution during the past session: A George Stephenson medal and premium to Mr. R. A. Hadfield, a Telford medal and premium to Mr. J. T. Milton, Watt medals and premiums to Sir Albert J. Durston and Mr. H. J. Oram, a Crampton prize to Mr. Francis Fox, a Manby premium to Sir William Roberts-Austen, and Telford premiums to Mr. J. M. Dobson, Mr. W. G. Kirkaldy and Mr. A. P. Head. The presentation of these awards, together with those for papers which have not been subject to discussion and will be announced later, will take place at the inaugural meeting of next session.

PROFESSOR CARL CHRISTIANSEN, who holds the chair of physics in the University of Copenhagen, is at present visiting American universities.

THE following officers of the Royal Institution have been elected for the ensuing year: *President*, the Duke of Northumberland; *Treasurer*, Sir James Crichton-Browne; *Secretary*, Sir Frederick Bramwell; *Managers*, Sir Frederick Abel, Sir William Crookes, the Duke of Devonshire, Lord Salisbury, Lord Halsbury, Dr. W. C. Hood, Professor D. E. Hughes, Lord Kelvin, Mr. A. B. Kempe, Mr. H. Leonard, Sir Andrew Noble, Mr. A. Siemens, Mr. B. W. Smith, Mr. W. H. Spottiswoode and Sir Henry Thompson; *Visitors*, Mr. W. H. Bennet, Mr. A. Blyth, Mr. M. Horner, Mr. E. Kraftmeier, Lieutenant-Colonel L. W. Longstaff, Mr. F. McClean, Mr. H. F. Makins, Mr. L. Mears, Dr. R. Messel, Mr. L. M. Rate, Mr. J. C. Ross, Mr. W. J. Russell, Mr. A. G. Salamon, Sir James Vaughan and Mr. J. J. Vezey.

MR. ANDREW CARNEGIE has been elected an honorary member of the American Library Association in recognition of his munificent gifts for American libraries.

MR. CHARLES LEESON PRINCE died at Tunbridge Wells on April 22d. He became a member of the Royal College of Surgeons in

1843, but ceased the practice of his profession in 1874. He was a Fellow of the Royal Astronomical and Meteorological Societies and a member of the Scottish Meteorological Society, and the author of 'Observations on the Climate of Uckfield,' second edition, 1886; 'Observations upon the Great Comet and Transit of Venus,' 1882; 'On the Ancient Telescope of Hevelius, with Translation,' 1882; 'Observations upon the Climate of Crowborough Hill, Sussex,' second edition, 1898; and 'On the Rainfall at Uckfield for 50 years.'

MR. BENJAMIN VINCENT, who was connected for more than half a century with the Royal Institution of London, died on May 3d. The *London Times* states that he owed his appointment as Assistant Secretary in 1848 to Faraday, with whom he was connected by marriage. He became subsequently Keeper of the Library, retiring in 1889 with the title of Honorary Librarian. At the Royal Institution Faraday, who was about twenty years his senior, found in him an untiring and enthusiastic coadjutor in promoting the knowledge of scientific progress and the welfare of the Institution. Faraday was well aware of the importance of creating and maintaining public interest in scientific work, and in this respect was greatly helped by Mr. Vincent, who for many years, quite apart from the official duties of his position, drew up clear, condensed reports of the lectures and discourses delivered at the Institution, which were published in *The Times*, the *Athenæum* and the *Illustrated London News*.^{*} As Librarian he was responsible for the arrangement and selection of the large and valuable collection of books, and he found time to prepare an admirable classified catalogue of these.

THE death is announced of M. M. Charles Brongniart, assistant in entomology at the Paris Museum of Natural History, at the age of 40 years. He was the son of the eminent botanist and had himself made important contributions to entomology.

DR. WILHELM JORDAN, professor of geometry and geodesy at the Technical Institute at Hanover, died on April 17th, aged 57 years.

PROFESSOR NEWTON, of Cambridge University, announces that applications by students to

occupy the University's table in the laboratory of the Marine Biological Association at Plymouth should be sent to him on or before June 1st.

THE Division of Forestry of the Department of Agriculture is prepared to appoint a few well-qualified student assistants. They will be given practical field work, their expenses will be defrayed and they will be given \$300 a year. These assistants should have preparation as follows:

- (1.) Botany, emphasis to be laid chiefly on the structure and life of plants. Systematic botany need not be dwelt on at length. The knowledge essential to the determination of the species of trees is, naturally, of great importance. Cryptogamic botany should not be entirely neglected, although only a general view is required.
- (2.) Geology, with special emphasis on the origin and meaning of the surface features of the earth.
- (3.) Some physics and chemistry are essential, and a slight knowledge of zoology and entomology should not be omitted.
- (4.) Mathematics should include geometry and trigonometry; and, preferably, mechanics also. A good working knowledge of surveying should be acquired.
- (5.) Some knowledge of law and business methods.
- (6.) German or French, preferably the former, and still better both together.
- (7.) A good course in economics.
- (8.) History and geography of the United States, with special reference to economic development and production.

Further information concerning these positions may be obtained from Mr. Gifford Pinchot, Chief of the Division of Forestry, Department of Agriculture.

By the will of Benjamin F. Horwitz, of Baltimore, \$5,000 is bequeathed to Johns Hopkins University, the income to be used annually in bestowing a medal upon such member of the medical profession, either in this country or abroad, who has accomplished most during the preceding year in ameliorating the sufferings of mankind in the way of medical discoveries. This bequest is in honor of the memory of Dr. Eugene Horwitz, son of the testator.

WE learn from the *British Medical Journal* that by a codicil to his will, dated February

20, 1899, Sir John Struthers bequeaths to the Royal College of Surgeons of Edinburgh the sum of £500 'for the purpose of promoting anatomical science' by founding a lecture to be delivered every third year before the College, the subject of the lecture to be on any part of normal vertebrate anatomy, the lecturer to be chosen at least a year before the lecture without restriction as to country or profession. Sir John Struthers left his large and valuable stock of anatomical drawings to the University of Edinburgh for the use of the professor of anatomy in the University. Most of the drawings were made by his own hand, and many of them direct from nature. Sir John Struthers also left to the University of Glasgow the sum of £500 for the founding of an award in anatomy for the purpose of encouraging original research or special practical work, the award to be made for original research or for the best special dissections or preparations or series of dissections or preparations relating to any part of anatomy, human or comparative, the decision to rest with the professor of anatomy in the University. The award is to be made every second year and to take the form of a gold medal with money prize. The prize is to be open to all students and graduates of the University of Glasgow, including the women students and graduates of Queen Margaret College.

THE annual subscriptions promised to The Liverpool School of Tropical Diseases now amount to about £2,500.

IN June next the Royal Institution, London, will complete 100 years of its existence, the first meeting of its members in the building in Albemarle street having been held on June 5, 1799. The managers have decided that this event, so interesting and memorable in the life of the Institution and in the history of science, shall be duly celebrated, and arranged for the delivery of two commemoration lectures. The first of these will be delivered on Tuesday, June 6th, by Lord Rayleigh, when the Prince of Wales, Vice Patron of the Institution, will preside and receive the honorary members; the second of the lectures will be delivered on Wednesday evening, June 7th, by Professor Dewar, when the Duke of Northumberland,

President of the Institution, will preside. The Lord Mayor has consented to give a reception to the members and guests at the Mansion-house on the evening of Tuesday, June 6th.

PROFESSOR GUSTAVE GILSON, of Louvain University, Belgium, has begun, under the direction of the government of Belgium, a series of experiments in the North Sea. On April 29th a set of bottles was let off from the West Hindar light vessel, 2 degrees, 26 minutes east longitude, 51 degrees, 23 minutes north latitude—*i. e.*, about twenty miles northwest of Ostend. Each bottle contains a printed card, and it is hoped that any one who picks up one of these bottles will take out the card and fill up the blanks reserved for the place and date of finding, name and place if found on the shore, latitude and longitude if found on the sea, and send it to Professor Gilson.

DR. PETERS, the German explorer, arrived at Sena, on the Zambesi, on May 8th.

THE Duke of Abruzzi started from Rome on the 2d inst. for the polar regions. His purpose is to sail from Norway for Franz Josef Land in the steamship *Star of Italy*, go as far north as possible in the ship, and then to try to reach the pole with sledges. The king and the royal princes have, it is reported, subscribed \$200,000 for the expedition, and the Duke will himself spend a large sum.

THE first statutory general meeting of the British National Association for the Prevention of Consumption and other Forms of Tuberculosis, of which the Prince of Wales is President, was held in London on May 4th. The Earl of Derby presided, and those present included Sir William Broadbent, Sir James Crichton-Browne, Sir Ernest Clarke, Sir John T. Brunner, M. P., Dr. Church, President of the Royal College of Physicians, Sir G. T. Brown, Mr. Edward Hulse, Professor McFadyean, Mr. C. Rube, Mr. Malcolm Morris, Treasurer, and Dr. St. Clair Thomson, Honorable Secretary of the Organizing Committee.

AT the annual dinner of the Sanitary Institute of Great Britain on May 2d the Duke of Cambridge, who presided, referred to the great work which it had done in promoting sanitary

knowledge. The public had made such use of the Parkes Museum, maintained by the Institute, that the Council had decided to start a building fund to provide a larger building to give the accommodation required for its increasing work. The Institute possessed 2,300 members and associates; its income last year was over £8,000, and its capital amounted to over £12,000. It had held 200 meetings, attended by 90,000 people.

UNIVERSITY AND EDUCATIONAL NEWS.

MR. ANDREW CARNEGIE has given £50,000 to the proposed University of Birmingham, on the understanding that scientific work be especially emphasized in the University, instancing Cornell University as the best model to be followed. The committee, in thanking Mr. Carnegie for this gift, state that it had always been intended that special attention should be given to scientific training and research.

MR. PASSMORE EDWARDS has given £10,000 to the new London University for the teaching of economics and commercial science. The *London Journal of Education* states that the commissioners of the University have decided to establish departments of psychology, political science and engineering.

THE will of the late Professor Marsh, leaving his property to Yale University and the National Academy of Sciences, is being contested by a nephew. It is unfortunate that such contests should be so common in the United States. It is in any case fortunate that Professor Marsh during his life devoted the greater part of his fortune to scientific work and Yale University.

THE Georgia Federation of Women's Clubs have presented a scholarship to the Teachers' College, Columbia University, of the value of \$450 a year. It will be assigned, on competitive examination, to an experienced teacher of the State of Georgia, and will be known as 'The Georgia Federation Scholarship.'

LAST year the University of Paris was given anonymously 75,000 fr. to permit five graduates to make a tour around the world. The gift has been repeated this year and increased so that each student will receive 16,500 fr. for the journey, which is expected to last two years.

NEW arrangements have been made for the award of the Bowdoin prizes of Harvard University. A prize of \$300 will be offered to graduates who have been in residence within three years. The subjects are to be in the languages next year, in philosophy, political science and history the following year and in mathematics and science in 1902.

The *American Naturalist* states that The Gray Herbarium of Harvard University has recently purchased a collection of *Compositæ* of the late Dr. F. W. Klapp, of Hamburg. It contains about 11,000 specimens and will probably add 60 genera, 1500 species, to the Gray Herbarium, which previously contained 35,000 sheets of composites.

A COLLECTION from the medical library of the late Dr. William Pepper, formerly Provost of the University of Pennsylvania, has been presented to the University by his son.

A COURSE in commerce, diplomacy and international law has been established at the University of Pennsylvania. The course will extend over two years. The subjects proposed being as follows: *First year*—American diplomacy, American commercial relations, international trade and foreign exchange, political economy, economical resources of European countries, and public finance. *Second year*—international law, European commercial relations, diplomatic history of Europe, government of colonies and dependencies, practical economic problems, economic resources of the Far East, comparative constitutional law.

MISS LILLIE J. MARTIN has been appointed acting assistant professor of psychology in Stanford University, to replace Dr. Frank Angell during a year's leave of absence in Europe.

MISS EDITH CHICK has been appointed Quain student in botany for three years (£100 per annum) at University College, London.

THE professorship of pathology at St. Andrews, vacant by the removal of Professor Muir to Glasgow, will be filled on June 21st. Information regarding the appointment may be obtained from Mr. J. E. Williams, Secretary of the University.