

medicine in the University of Pennsylvania; Dr. C. S. Hastings, professor of physics in the Sheffield Scientific School of Yale University; Dr. W. F. Hillebrand, chemist in the U. S. Geological Survey; Charles Rockwell Lanman, LL.D., professor of Sanskrit and comparative philology in Harvard University; Dr. F. P. Mall, LL.D., professor of anatomy in the Johns Hopkins University; the Hon. Elihu Root, LL.D., secretary of state; Dr. E. F. Nichols, professor of experimental physics in Columbia University; T. D. Seymour, LL.D., professor of Greek in Yale University; Dr. E. B. Titchener, professor of psychology in Cornell University; O. H. Tittmann, superintendent of the U. S. Coast and Geodetic Survey, and Dr. A. G. Webster, professor of physics in Clark University.

The University of Pennsylvania conferred the degree of doctor of science on William P. Hemszey, the engineer, and on James Gayley, the analytic chemist and trustee of Lafayette College. The degree of doctor of laws was conferred on King Edward VII.; Guglielmo Marconi, inventor of wireless telegraphy; Andrew Carnegie; George H. Darwin, professor of astronomy in Cambridge University; Edgar F. Smith, professor of chemistry in the University of Pennsylvania and president of the American Philosophical Society; Hampton L. Carson, attorney general of Pennsylvania; J. W. Mallet, professor of chemistry in the University of Virginia; Wm. B. Scott, professor of geology and paleontology at Princeton University; E. C. Pickering, professor of astronomy and director of the Harvard College Observatory; Hugo de Vries, professor of plant anatomy and physiology in the University of Amsterdam; A. A. Michelson, professor of physics in the University of Chicago; Ernest Rutherford, professor of physics in McGill University; E. L. Nichols, professor of physics in Cornell University; W. K. Brooks, professor of zoology in the Johns Hopkins University; W. P. Patterson, professor of divinity in Edinburgh University; Professor H. A. Lorentz, professor of mathematical physics in the University of Leiden; Alois Brandl, professor of philology in the

University of Berlin; Samuel Dickson, chancellor of the Law Association of Philadelphia.

SCIENTIFIC NOTES AND NEWS.

THE appalling disaster on the Pacific Coast has completely spared the University of California and the Lick Observatory. The buildings of Leland Stanford Junior University have suffered severely, the loss being estimated at \$4,000,000. The building of the California Academy of Sciences and its valuable collections were destroyed.

A DINNER in honor of Professor H. A. Lorentz, of the University of Leiden, was given by the Philosophical Society of Washington, on the evening of April 21.

THE University of St. Andrews has conferred its doctorate of laws on Dr. A. C. L. G. Günther, formerly keeper of the Zoological Department of the British Museum, and on Dr. A. H. Young, professor of anatomy at Manchester.

THE United States ambassador to Great Britain, Mr. Whitelaw Reid, presented the gold medal of the American Geographical Society to Captain R. N. Scott, commander of the National Antarctic Expedition, on April 9.

DR. HOBART AMORY HARE and Dr. Francis Xavier Dercum entertained recently as guests of honor at dinner at the Art Club, Philadelphia, Drs. E. Anthony Spitzka and George McClellan, recently appointed professors of anatomy in Jefferson Medical College.

MR. H. H. CLAYTON, meteorologist of the Blue Hill Meteorological Observatory, has accepted the position of professor in the U. S. Weather Bureau, and will assume his duties in Washington on about July 1.

MR. A. F. CRIDER, of the United States Geological Survey, has been appointed state geologist of Mississippi and professor of geology in the university of the same state. The line of work first undertaken by the state survey will be an investigation of the cement resources, the clays and the lignites.

DR. ALFRED W. G. WILSON has resigned his appointment as demonstrator in geology at

McGill University to go into private practise as a consulting geologist in engineering and mining work. His present address is 197 Park Avenue, Montreal.

Nature states that at a meeting of the council of the Royal College of Surgeons of England, held on April 5, the Walker prize of £100, founded by the late Mr. C. C. Walker to encourage investigation into the pathology and therapeutics of cancer, was awarded to Professor C. O. Jensen, of Copenhagen. The committee appointed to advise the council in reference to the award of the prize was influenced, not merely by the actual work which Professor Jensen has done in investigating the nature of cancer and the effect of treatment upon it, but also by the extent to which he has opened up a field of research to those engaged in the study of cancer on certain lines, enabling them to carry out their investigations over longer periods of time and under better and more determined conditions than have up to the present time been possible. The Jacksonian prize for 1905 was awarded to Mr. R. C. Elmslie for his essay on 'The Pathology and Treatment of Deformities of the Long Bones due to Disease occurring during and after Adolescence.' The prize-subject for the year 1907 will be 'The Operative Surgery of the Heart and Lungs, including the Pericardium and the Pleura.' The subject selected for essays to be submitted in competition for the Cartwright prize for the period 1906-1910 was 'Prevention of Dental Caries.' The honorary medal of the college was awarded to Lieut. Colonel Sir Richard Havelock Charles, I.M.S., in appreciative recognition of his gift of anthropological specimens—an addition to the museum of special value and importance, not only on account of the number and variety of the specimens presented, but also because of the authentic particulars attached to them.

PRESIDENT JORDAN, of Stanford University, gave recently the convocation address at the University of Wisconsin, the subject being 'The Call of the Twentieth Century.'

MR. A. LAWRENCE ROTCH, director of the Blue Hill Meteorological Observatory, gave an

illustrated lecture before the Middletown Scientific Association, on April 10, entitled 'Recent Investigations at Great Heights above the American Continent and the Atlantic Ocean.'

PROFESSOR LOUIS KAHLENBERG, of the University of Wisconsin, delivered, between April 9 and 13, a series of five lectures in physical chemistry before the faculty and students of the College of Science at the University of Illinois. The subjects of the lectures were: 'The relation between chemical action and electrical conductivity,' 'Osmosis and dialysis,' 'The rôle of silicates in nature,' 'A study of the optical rotatory power of substances' and 'The nature of solutions.' Throughout the series the lecturer argued for the recognition of solutions as chemical compounds according to variable proportions. On the evening of April 12, Professor Kahlenberg was given an informal reception by the faculty of the department of chemistry.

A SPECIAL number of the *University of Chicago Record* has been issued as a memorial to President Harper. The issue, which consists of ninety pages, contains appreciations, and also the chief addresses delivered at the various memorial services held at other American universities. Four portraits are given.

M. PIERRE CURIE, professor of physics at the Sorbonne, Paris, eminent with Mme. Curie for the discovery of radium, was run over and killed by a wagon in Paris, on April 19. M. Curie was born on May 15, 1859.

WE regret also to record the deaths of Dr. Tullio Brugnatelli, professor of chemistry at the University of Pavia and of the Swiss ornithologist, Victor Fatio.

THE next meeting of the Astronomical and Astrophysical Society of America will be held at New York, in affiliation with the American Association for the Advancement of Science, during convocation week, 1906-7.

THE working library of Professor Meissner on internal medicine, and a botanical library of three hundred or more volumes, consisting mainly of old and classical works on herbs,

have been given to the Newberry Library, Chicago, by Dr. Nicholas Senn.

THE American Academy of Arts and Sciences is the custodian of two funds, one known as the Rumford fund, the other, the Warren fund. The Warren fund consists of ten thousand dollars left to the academy by the late C. M. Warren, the interest of which, about four hundred dollars a year, is, according to the will of the donor, used for the encouragement of chemical research. A committee appointed by the academy, known as the C. M. Warren Committee, receives and considers applications for grants from this fund and reports its action to the academy at the annual meeting in May, for approval. Applications should be made to Professor Leonard P. Kinnicutt, Worcester Polytechnic Institute, Worcester, Mass., stating exactly the scope of the research for which aid is asked, and also a statement as to the way the money is to be used in carrying out the research. The recipients of aid from this fund are expected to send to the chairman of the committee, Professor Kinnicutt, at the end of each year, a report of the work accomplished, and to mention in any publication of the research that aid had been given for carrying on the work from the C. M. Warren fund of the American Academy of Arts and Sciences.

CONSUL GRIFFITH, of Liverpool, transmits a report on the establishment of an institute of tropical research, the objects of which are the collecting and tabulating of all kinds of information regarding tropical countries, their products, natural resources, industries and economic conditions, which can be of service either to commerce or science. The consul says that no provision has heretofore been made in Europe for dealing in a systematic manner with the scientific study of the tropics and of their economic aspects as a whole. The Liverpool institute represents the first effort to systematically collect and collate accurate knowledge concerning the tropics and place the result of this expert research work in an accessible form.

We learn from *The British Medical Journal* that the governor general of the Soudan has appointed a commission to investigate the possibility of the extension of 'sleeping sickness' into Soudan territory. The commission is to consist of Lieutenant-Colonel G. D. Hunter, D.S.O., P.M.O., Egyptian Army; Dr. Andrew Balfour, director of the Wellcome Research Laboratories, Khartoum; a British medical officer of the Egyptian Army, or a medical inspector of the Soudan Medical Department, or such members as may be hereafter appointed. The points to be investigated are: (1) To ascertain the distribution of various species of tsetse flies or other biting flies in the Soudan; (2) to ascertain if the disease at present exists in Soudan territory—if so, to determine the exact areas, and to what extent the distribution of the disease coincides with the presence of the tsetse or other flies in these areas; (3) a systematic investigation of the blood of a population in an infected district; (4) a thorough and complete research into the character of the disease, especially as regards its origin and spread.

THE following are the lecture arrangements at the Royal Institution after Easter: Professor G. Baldwin Brown, two lectures on Greek classical dress in life and in art; Professor William Stirling, three lectures on glands and their products; Dr. P. Chalmers Mitchell, two lectures on the digestive tract in birds and mammals; the Rev. J. P. Mahaffy, two lectures on (1) the expansion of old Greek literature by recent discoveries, (2) the influence of ptolemaic Egypt on Græco-Roman civilization; Professor William J. Sollas, three lectures on man and the glacial period; Professor Charles Waldstein, three lectures on English furniture in the eighteenth century; Sir James Dewar, two lectures on the old and the new chemistry; and Professor W. Macneile Dixon, two lectures on (1) the origins of poetry, (2) inspiration in poetry. The Friday evening meetings will be resumed on April 27, when Professor John W. Gregory will deliver a discourse on ore deposits and their distribution in depth. Succeeding discourses will probably be given by the Hon.

Charles A. Parsons, Professor J. H. Poynting, Professor Arthur Schuster, Mr. Leonard Hill, Professor H. Moissan, and Sir James Dewar.

A RECENT Friday evening lecture at the Royal Institution was given by Professor P. Zeeman, of Amsterdam University, on 'Recent Progress in Magneto-Optics.' According to the London *Times*, Professor Zeeman gave a general review of the experimental researches on the relation between magnetism and light which had occupied him during the last few years. His observation, made in 1896, of a slight widening of the spectral lines of sodium under the influence of a magnetic field was, he said, the origin of his work, which he carried on in the light of the theory of electromagnetic and optical phenomena developed by H. A. Lorentz. In accordance with this theory he found that in a strong magnetic field certain spectral lines were divided into three components, when the magnetic force was at right angles to the direction of propagation of the light, and further, that the middle one of these components was plane-polarized in a direction different from that of the two outer ones. When the magnetic force was parallel to the direction of the propagation of the light, the lines split up into two components, each circularly polarized but in opposite directions. From these phenomena it could be inferred that in a luminous gas all vibrations arose from the negative electrons, and the value deduced for the ratio of the charge to the mass of the electron was of the same order as that obtained from the study of the cathode rays. Professor Zeeman next considered the rotation of the plane of polarization close to an absorption band, and then the double refraction and resolution of the absorption lines. Finally, he discussed the behavior of different spectral lines in the magnetic field. In many metallic spectra a number of the lines occurred which were closely related and formed so-called series. It was found that all lines of the same series were split up in the same manner, *e. g.*, all were resolved into triplets, or sextets, or nonets; moreover, not only was the general type of subdivision the same, but even the

amount of separation, measured in oscillation frequency. A second law was that the corresponding series of different elements also showed the same type of resolution and the same amount of separation. The conclusion seemed to be that all the lines of a series were emitted by one oscillating system, and that, therefore, there were as many series in the spectrum of a substance as there were oscillating systems in its atom; and that the oscillating mechanism was the same in different elements. He thought there could be no doubt that spectrum analysis and especially the magnetization of the spectral lines would give a clue to the inner structure of the atom.

The Scottish Geographical Magazine states that for some time past preparations have been made for a French Colonial Congress, to be held at Marseilles in September next, under the presidency of M. J. Charles Roux, the well-known writer on colonial subjects. From the intimate connection which exists between marine and colonial affairs, it has been decided to extend the scope of the congress by the addition of an exhibition, intended to illustrate all matters connected with the scientific study of the sea and its fisheries. Its organization was entrusted to M. Charles Bénard, president of the Oceanographical Society of the Golfe de Gascogne, who has done more than any one else to further the study of oceanography in France within recent years. In recognition of the fact that the sea knows no political boundaries, it was wisely decided to give the exhibition an international character, and the cooperation of the leading oceanographers of all nations was invited. A British committee was formed under the presidency of Sir John Murray, including representatives of the principal organizations connected with the study of oceanography and marine biology in this country, and under its auspices a representative British exhibit has been got together. The society will be represented at Marseilles by Captain Wilson Barker, and among other exhibits, has sent the model of the Antarctic exploring ship, *Discovery*, a special feature of the exhibition being the illustration of the great

scientific exploring expeditions. It will include—besides examples of the best scientific instruments and appliances, charts, photographs, etc.—a number of sections devoted to the industrial side of the subject: the equipment of fishing-vessels, appliances for the capture and preservation of fish, life-saving apparatus, and many other classes of objects. A congress of geographical societies and of the 'Alliance française' (an association for the extension of the French language in the colonies and abroad) will also be arranged, the geographical section being under the presidency of M. le Myre de Vilers, president of the Paris Geographical Society. Its proceedings will be devoted towards furthering the spread and advancement of geographical science.

UNIVERSITY AND EDUCATIONAL NEWS.

THE University of California has received a gift of \$100,000 from the widow of the late Judge John H. Boalt.

MR. ANDREW CARNEGIE has offered \$40,000 to Denison University for a new library building on condition that a like sum be secured elsewhere for the endowment of the library. It is expected that the condition will be met and construction begun soon.

THROUGH the generosity of Mr. Robert S. Brookings and Mr. Adolphus Busch, the Medical Department of Washington University (St. Louis) has received a gift of \$50,000.

THE Studies and Examination Syndicate of Cambridge University has presented a report recommending that students of mathematics and science may be exempted from the entrance examination in Greek. Students of science would receive the degree of bachelor of arts and science and other students the degree of bachelor of arts and letters.

PROFESSOR ANDREW CUNNINGHAM McLAUGHLIN, professor of American history in the University of Michigan, has been appointed professor and head of the department of history in the University of Chicago. The headship of the department has been vacant since last summer, when Professor Jameson resigned to become director of the bureau of

historical research in the Carnegie Institution, the position previously held by Professor McLaughlin.

At a recent meeting of the regents of the University of Wisconsin a number of appointments were made and provision for additional professorships. Professor W. D. Pence, now head of the department of civil engineering at Purdue University, was elected to the chair of civil engineering, to fill the vacancy caused by the resignation of Professor W. D. Taylor, who has become chief engineer of the Chicago and Alton Railway. Dr. Edward B. Van Vleck, now professor of mathematics at Wesleyan University, was appointed to the professorship of mathematics left vacant by the resignation of Professor C. A. Van Velzer. Upon recommendation of the regent committee on the college of agriculture, George N. Knapp, assistant professor of farm engineering, was removed. A number of other appointments and several promotions were made at this meeting of the regents. Dr. Thomas S. Adams was promoted from assistant professor to associate professor of political economy; Emmett D. Angell from instructor to assistant professor of physical culture; Eliot Blackwelder from instructor to assistant professor of geology; Boyd H. Bode from instructor to assistant professor of philosophy; Charles W. Stoddart from instructor to assistant professor of soils. The new instructors appointed were: E. R. Jones, soils; W. G. Marquette, botany; T. Sidney Elston, physics; George N. Northrop, English; Herman T. Owen, music; L. J. Pactow, history. The assistantships filled included: Julian P. Blackman, physiology; A. R. Harris, official tester in agricultural chemistry; J. G. Brandt, Latin; J. L. Conger, American history; D. R. Lee, Latin; James Milward, horticulture; and Charles W. Hill, chemistry.

PROFESSOR E. H. STARLING has been appointed to the Jodrell chair of physiology in the University of London.

MR. G. C. GOUGH, B.Sc., has been appointed to the chair of natural history at the Royal Agricultural College, Cirencester, vacant by the resignation of Professor West.