

election to the studentship in the year 1913. Candidates are required to send in their applications to the professor of physiology before the end of June, with a statement of the course of research which they propose to undertake.

The Board of Agricultural Studies, in consultation with the president of the Royal Agricultural Society, has nominated C. R. Fay to be the Gilbey lecturer on the history and economics of agriculture.

The General Board of Studies is authorised to appoint a University lecturer in agricultural physiology for a further period of five years from midsummer, 1913. The lecturer will receive an annual stipend of 200*l.*, payable out of the agricultural education fund.

LEEDS.—Mr. W. A. Millard, formerly assistant lecturer in botany, has been appointed lecturer in agricultural botany.

A series of week-end lectures on modern Germany will commence on May 31, and will be continued on June 6, 7, and 14. Among the lecturers will be Dr. Hiby, managing director of the Otto Coke Oven Co., on industrial and social conditions; Prof. Smithells, on the story of German science; and Mr. J. L. Paton, on modern German education.

MANCHESTER.—The council has made a number of appointments and rearrangements in the department of chemistry consequent on the resignation of Prof. W. H. Perkin on his acceptance of the chair of chemistry at Oxford. Dr. A. Lapworth, F.R.S., has been appointed professor of organic chemistry and Dr. Charles Weizmann has been appointed reader in biochemistry and lecturer in colouring matters. Dr. E. C. Edgar and Dr. F. B. Burt have been made senior lecturers in chemistry. Prof. H. B. Dixon has been reappointed director of the chemical laboratories, to supervise the department as a whole.

Mr. Edward Sandeman has been appointed associate professor of engineering in the University. He will lecture on water supply and irrigation, and will be responsible for the studies of all students specialising in this branch of engineering.

OXFORD.—The fourth Halley lecture was delivered in the schools on May 22 by Dr. Louis A. Bauer, director of the department of research in terrestrial magnetism in the Carnegie Institution of Washington, U.S.A. The subject of the lecture was "The Earth's Magnetism." Dr. Bauer paid a tribute to Halley as one of the greatest among early investigators of the variations of the compass. He described the two years' cruise undertaken by Halley in the years 1698–1700, at the cost of William III., for the purpose of making magnetic observations. The expedition which left New York four years ago in the *Carnegie* had followed the same track, but found a great alteration in the magnetic conditions. The magnetic poles were gradually shifting. Though Halley's theory of terrestrial magnetism was not strictly correct, it seems to have been the first definite recognition of the complexity of the problem. This would not be completely solved until the physicists were able to answer the question, What is magnetism?

A valuable lecture on wireless telegraphy has been given before the Ashmolean Society by Mr. W. G. Gill, of the Officers Training Corps and fellow of Merton College.

Entries for the Final Honour School in Natural Science number eighty-nine, distributed as follows:—Physics, ten; chemistry, thirty-two; zoology, two; physiology, eighteen; botany, five; geology, ten; engineering science, twelve.

On May 27 Congregation passed the preambles of two statutes relating to the holders of professorships at present tenable for life, and to which no canonry

is annexed. The statutes provide that every such professor shall vacate office within one year of attaining the age of seventy years, and that a scheme of pensions shall be established to apply to professors vacating office under the above conditions. If these statutes are finally adopted in their present form, they will not apply to any of the present holders of professorships, nor, in all probability, to any of their successors for some years to come. It has, however, been widely felt that some steps should now be taken to provide for the eventual establishment of a satisfactory system of retirement and pension, nothing of the kind being at present in existence.

The University of Glasgow has received, under the will of Miss Jeanie Pollock, of Glasgow, the sum of 10,000*l.* for providing a materia medica research lectureship.

DR. GEORGE BARGER has been appointed by the Senate of the University of London to the University chair of chemistry tenable at the Royal Holloway College, with the status of appointed teacher.

DR. S. B. SCHRYVER, biochemist at the Research Institute of the Cancer Hospital, Brompton Road, S.W., has been appointed assistant professor of biochemistry at the Imperial College of Science and Technology.

The board of regents of the University of Nebraska recently voted a general increase in the salaries of deans and professors in the University. *Science* states that the necessary 7000*l.* was obtained from the additional maintenance grant voted by the last legislature.

DR. L. F. GUTTMANN, formerly of London University and the College of the City of New York, and for the last four years assistant professor of physical and industrial chemistry at Queen's University, Kingston, Canada, has been appointed associate professor of chemical engineering in this University.

It is now announced that the executors of the late Sir J. Wernher, Bart., have completed the allocation of the 100,000*l.* bequeathed to them to be devoted to charitable and educational purposes. 35,000*l.* has been allotted to charitable and educational purposes in South Africa, and the balance of 65,000*l.* has been distributed over nearly 150 different institutions in this country. Among the grants for scientific and educational purposes may be mentioned: to the Institute of Mining and Metallurgy, 5000*l.*; the Imperial Service College, Windsor (to found a scholarship for Bedfordshire), 2500*l.*; the London School of Tropical Medicine, 1500*l.*; and lesser amounts to the London School of Economics, the Bedford College for Women, and the Working Men's College.

SOCIETIES AND ACADEMIES.

LONDON.

Geological Society, May 7.—Dr. Aubrey Strahan, president, and afterwards Mr. W. Whitaker, in the chair.—**M. Odling**: The Bathonian rocks of the Oxford district. The lithology, palæontology, and stratigraphy of the Bathonian rocks north of Oxford are described, from the evidence afforded by numerous quarries and well-borings and by the Ardley Cutting. The general sequence is given. After a general account of the series, the points of interest in the sections and their relations are described; and it is pointed out that, although no definite zones can be formulated, the different horizons are recognisable by their assemblage of fossils. The chemical and micro-

scopic structures of the rocks are dealt with, and the conditions of deposition and stratigraphical relationship of the different members of the series discussed. Some structures from the Chipping-Norton Limestone are described, and the reasons given for considering them to be annelid-tubes. A list of fossils is appended.—Dr. J. A. Thomson: The petrology of the Kalgoorlie Goldfield (Western Australia). The district comprises an area about four miles long by one mile in breadth. Towards the south the auriferous lodes are rich (The Golden Mile), but in the north they are less productive. Most of the junctions are faulted. In "The Golden Mile" the central feature is a broad dyke of quartz-dolerite, forming a prominent ridge flanked by amphibolites and greenstones. The quartz-dolerite is cut by dykes of albite-porphry. Gold is found in shear-zones, impregnated with sulphides and tellurides, and is most abundant in the lodes in the quartz-dolerite. The sequence of the rocks of Kalgoorlie is discussed. The greenstones, fine amphibolites, and calc-schists are regarded as the old "country-rocks," into which the others are intrusive. The quartz-dolerites, hornblende-dolerites, and pyroxenites are closely related one to the other. Probably the peridotite group is the early basic facies of the quartz-dolerite series, and the porphyries and porphyrites are regarded as being derived from the same magma. The characteristic of this goldfield is the prevalence of albitisation in the auriferous districts. A consideration of the rock-facies developed from the magma suggests that there is in Kalgoorlie an instance of the production of auriferous lodes by rocks belonging to the same class as the pillow-lavas and their diabases and soda-granite-porphyrries.

PARIS.

Academy of Sciences, May 19.—M. F. Guyon in the chair.—A. Haller and Edouard Bauer: Monomethylcamphoroxime, methylcampholenic nitrile, and methylcampholenic acid. By the action of sodium amide and methyl iodide upon camphor, a mixture of monomethylcamphor and dimethylcamphor is obtained. These can be separated by treatment with Crismer's salt (hydroxylamine chlorozincate); dimethylcamphor remains unchanged, and can be separated from monomethylcamphoroxime by fractional distillation.—M. de Forcrand: The condition of water in hydrated salts. The determination of the heat of solution of hydrated salts is suggested as the best means of attacking the problem of the condition of the attached water molecules.—M. André Blondel was elected a member of the section of free academicians in the place of the late Louis Cailletet.—H. Godard: Observations of the comet 1913a (Schaumasse) made with the 38-cm. equatorial at the Observatory of Bordeaux. Two positions are given for May 16. The comet appeared as a diffuse nebulosity, without nucleus, of 10.5 magnitude.—J. Guillaume: Observations of the Schaumasse comet (1913a) made with the equatorial of the Observatory of Lyons. Two positions are given for May 10 and one for May 11. The comet is described as circular, bluish, condensed at the centre; magnitude about 10.5.—Rodolphe Soreau: A new approximate formula for the length of the ellipse.—Paul Lévy: The integration of functional partial differential equations.—M. Moulin: The law of deformation of the flat spiral spring of chronometers.—M. de Sparre: Hammering of the water in pipes formed of sections of different diameter.—C. Tissot: The influence of electrical oscillations on the conductivity of certain fused metallic salts. A layer of certain fused salts (lead and thallium chlorides, cadmium bromide, silver nitrate, chloride, and bromide) in contact with two metallic plates as electrodes becomes conducting when the E.M.F. exceeds a certain limiting value. If the

system is now submitted to electrical oscillations of sufficient intensity, the conductivity immediately disappears.—Carl Benedicks: The deduction of Planck's law of distribution of energy by the hypothesis of agglomeration. Planck's law can be deduced without the use of the *quanta* hypothesis.—J. Chaudier: The variations of magnetic rotatory power in changes of state.—André Léauté: The precautions to be taken in the use of resonance in tests of electric cables intended for use with high voltages.—R. V. Picou: Internally excited dynamos.—Camille Matignon: The law of volatility in chemical reactions. The law of Berthollet is given in a generalised form. Any system of solids or non-volatile liquids susceptible of giving rise by a new grouping of atoms to a system containing volatile bodies ought to enter into reaction at a suitable temperature. Thus it has been shown that at a very high temperature aluminium will react with magnesia, the magnesium formed being gaseous. The reduction of barium oxide by silicon is another example.—G. Arrivaut: Study of the system manganese-silver. Manganese and silver are capable of forming the combination $MnAg_2$; experimental evidence on this is given dealing with the melting-point curves, microscopical structure, electromotive forces, and chemical behaviour of various alloys of the two metals. This conclusion is opposed to that previously arrived at by G. Hindrichs.—Marcel Gompel and Victor Henri: The quantitative study of the absorption of the ultra-violet rays by the alkaloids of the atropine group. Absorption data are given for atropine, apoatropine, and cocaine.—MM. Taffanel and Le Floch: The combustion of gaseous mixtures. An examination of the causes of the lag in the inflammation of combustible mixtures of methane. Moisture was found to be without effect in reducing this lag.—J. Aloy and Ch. Rabaut: Benzoyl cyanhydrins of ketones, amides, and the alcohol acids from which they are derived.—E. E. Blaise: The characterisation of the chloro-ketones. The use of the semicarbazones was found to be advantageous for the identification of the chloro-ketones.—Alfred Guillemard: Nature of the optimum osmotic pressure in biological processes.—Jean Daniel: The relations existing between the age of the dicotyledons and the number of successive layers of their secondary woods. Under certain conditions of growth the number of concentric layers of secondary wood cannot be distinguished, and the number of years of growth cannot be determined by this means.—C. J. Pitard: The vegetation of Chouia, Morocco.—M. Hirtz: Intensive galvanotherapy with feeble current density.—Louis Roule: Contribution to the study of the biology of the salmon.—L. Bordas: A case of lateral budding in *Lumbricus herculeus*.—J. Bounhiol: The reproduction of the Algerian sardine.—Albert Berthelot: Researches on the intestinal flora. The pathogenic action of a microbial association of *Proteus vulgaris* and *Bacillus aminophilus*. A study of the symbiosis of these two organisms *in vitro* leads to the conclusion that the *B. aminophilus* prevented to some extent the growth of *Proteus*, but experiments *in vivo* with white rats at once showed that the opposite was the case. *Proteus* alone, even in large doses, is without apparent influence on rats, but in association with the bacillus above-mentioned, enteritis is rapidly produced.—G. Béchamp: Concerning *microzyma cretae*. Remarks on a recent communication by Raphaël Dubois.—J. Lesage: Epizootic myocarditis of the sheep.—C. Gerber: Comparison of the hydrolysing diastases of the latex of *Maclura aurantiaca* with those of *Ficus carica* and *Broussonetia papyrifera*.—J. Vallot: The value and variation of the temperature of the lower portion of the glacier of Mont Blanc.