

come up for decision at the next meeting, which will be held three years hence in Berlin, after discussion by a standing committee charged with the general revision of the statutes.

Proposals to elect the Royal Society of Edinburgh and the Finnish Academy of Helsingfors as members of the association were presented by the Royal Society of London and the Imperial Academy of St. Petersburg respectively. As several of the delegates were without definite instructions from their academies, the proposals will have to be submitted to the constituent bodies and voted upon by correspondence.

It is needless to say that the social functions of the meeting were carried out admirably and with lavish hospitality. Dinners and evening parties followed each other almost too continuously, and the ladies accompanying the delegates will not forget the manner in which they were hospitably entertained throughout their stay in St. Petersburg. But this account is only intended to deal with the scientific aspect of the meeting, and a brief reference only can therefore be made to the visit to the Tsar's palace at Tsarkoé Sélo, during which the delegates were individually presented to the Emperor of Russia and afterwards entertained at luncheon.

ARTHUR SCHUSTER.

PROF. JAMES GORDON MACGREGOR, F.R.S.

PROF. J. G. MACGREGOR, of Edinburgh University, died suddenly and unexpectedly on the morning of Wednesday, May 21, shortly after he had risen, apparently in his usual health. It was known, of course, both to himself and his friends that his heart was not in the healthiest condition, but up to the moment of his death no really grave symptoms had declared themselves.

Prof. MacGregor was born on March 31, 1852, at Halifax, Nova Scotia, where his father had been a well-known clergyman. He early showed mental abilities of a high order; and in 1871 he graduated M.A. at Dalhousie College, Halifax, with the highest distinctions in all departments. He was awarded the Canadian Gilchrist scholarship, the condition of which required him to continue his studies and take a degree in London University. He decided to follow out physical and chemical science, and in 1871 entered himself as a student of science in the University of Edinburgh. He began what promised to be a most distinguished career; but unfortunately he broke down in health and was forbidden to work for competitive honours in the classes. During his second winter he spent much of his time in Prof. Tait's laboratory, and in conjunction with Ewing (now Sir Alfred) he measured the electrical resistance of certain saline solutions. The paper was soon afterwards published in the Transactions of the Royal Society of Edinburgh, and it may be regarded as giving the impulse which led MacGregor to follow up the line in which his best original work was done.

He spent the better part of two years in Leipzig in the laboratory of Gustav Wiedemann, and

carried out some investigations in the electrical resistance of stretched silver wires. He gained his doctorate of science in 1876, and was immediately thereafter recalled to his native town as lecturer in physics in Dalhousie College. This he held for only one year, and from 1877 to 1879 he filled the important post of physical science master in Clifton College. The tragic death, as the result of a shooting accident, of one of the Clifton College masters, beside whom MacGregor was sitting at the moment of the accident, seriously affected his health at the time, compelling him to stop work entirely for several months. Meanwhile the Dalhousie College lectureship had developed into the Munro chair of physics, and MacGregor, undoubtedly their most promising alumnus, was invited to become professor. For twenty-two years he filled this post to the educational advantage of his native town. He took an active share in the founding of the Royal Society of Canada, in the Transactions of which some of his most important papers are published. He also keenly interested himself in the welfare of the Nova Scotian Institute of Science.

In 1887 MacGregor brought out a text-book on kinematics and dynamics (Macmillan and Co.). At the time of its publication it occupied an intermediate position between the elementary text-books and the treatise of Thomson and Tait, whose methods, indeed, MacGregor largely followed. The book had outstanding merits, and covered not only what is ordinarily understood by dynamics, but much also of hydrodynamics and elasticity. In 1909 appeared a third edition, considerably altered and improved.

The writing of this book turned MacGregor's mind to the difficult question of the foundations of dynamical science; and his conclusions were given in several papers, some of which appeared in the Transactions of the Royal Society of Canada and others in the *Philosophical Magazine*. These are characterised by clearness of apprehension of the questions at stake and by a logical statement of his own views.

On the retirement of Prof. Tait in 1901 from the chair which he had filled with such conspicuous success for forty years, Prof. MacGregor was elected his successor. During the twelve years of his tenure of this post MacGregor's chief work outside the ordinary duties of his chair was to develop the natural philosophy department and bring it into line with modern requirements. The transformation of the old infirmary building into a well-equipped laboratory demanded a vast amount of detailed consideration; and after two years of careful planning the new department was opened in 1907, not in the completed state designed by MacGregor, but sufficiently developed for a start to be made. With later additions and developments the whole combined departments of natural philosophy and applied mathematics remain as a lasting monument to Prof. MacGregor's energy, zeal, and forethought.

During the last few years Prof. MacGregor had been actively engaged in appealing to Prof. Tait's

old students for subscriptions towards a new chair on the mathematical side of natural philosophy, to be called the "Tait Chair."

Prof. MacGregor's original contributions to scientific literature other than those already indicated are mainly concerned with electrical conduction, ionisation, densities, and freezing-point depressions of solutions. These are published chiefly in the Transactions and Proceedings of the Royal Society of Canada, the Royal Society of Edinburgh, and in the *Philosophical Magazine*. He also wrote interesting addresses on educational subjects of a more general nature, and a few years ago published for the use of the students a pamphlet on physical laws and observations.

Prof. MacGregor was an enthusiastic teacher, and spared neither time nor trouble for the sake of his students. His accessibility endeared him to all. Busy though he was at all times, he was ever ready to lay aside his personal work, however pressing, so as to discuss any difficulties his students might have. His was a sunny, genial nature, finding pleasure in ministering to the needs of others; and there was no trouble too great which he would not take on behalf of his friends.

C. G. KNOTT.

NOTES.

WE regret deeply to announce that Lord Avebury died on May 28, at seventy-nine years of age.

THE annual visitation of the Royal Observatory, Greenwich, will be held on Saturday, June 7.

THE Croonian lecture of the Royal Society will be delivered by Dr. Robert Broom on Thursday, June 5; the subject will be "The Origin of Mammals."

WE learn from the *Revue Scientifique* that the mathematical works of the late Henri Poincaré are to be published by the firm of Gauthier-Villars, under the auspices of the Minister of Public Instruction and the Paris Academy of Sciences.

At the meeting of the Royal Meteorological Society on Wednesday, May 21, Dr. V. F. K. Bjerknes, professor of geophysics in the University of Leipzig, and Dr. Hugo Hergesell, president of the International Commission for Scientific Aeronautics, Strassburg, were elected honorary members of the society.

THE American Association for the Advancement of Research by Women has awarded the Ellen Richards prize of 1000 dollars to Dr. Ida Smedley (Mrs. MacLean) for her work on the biochemical synthesis of fatty acids. The prize is offered biennially, and was last awarded in 1909, when the successful candidate was also an Englishwoman, Dr. Florence Buchanan.

THE fourth International Congress for the Hygiene and Salubrity of Dwellings is to be held at Antwerp on August 31-September 7. The congress will be divided into four sections: the hygiene of emigrants, colonial hygiene, hygiene of ports and ships, and the development of towns from the hygienic point of view. Persons desiring to take part in the congress should communicate with the treasurer, Mr. A. Cols, notary, Willem Tell Street, 3, Antwerp.

NO. 2274, VOL. 91]

THE president of the Royal Society has received from the Portuguese Legation subscriptions amounting to 21*l.* 5*s.* forwarded by the Society of Medical Science of Lisbon as a donation to the Lister Memorial Fund. A sum of 867 dollars has been collected by Dr. W. W. Keen, of Philadelphia. Further donations intimated from foreign countries include:—University of Paris, 500 francs; University of Lyons, 100 francs; Société de Chirurgie of Lyons, 100 francs; faculty of medicine of the University of Munich, 100 marks; faculty of medicine of the University of Breslau, 110 marks; and Stockholm Medico-Chirurgical Society, 5*l.* A donation of 10*l.* has been received from the University of Calcutta.

WE are glad to be assured by Prof. Sampson, Astronomer Royal for Scotland, that the damage to instruments due to the explosion of a Suffragette bomb at the Royal Observatory, Edinburgh, on May 21, was happily insignificant. The bomb was placed on the floor below that of the west dome. The floor of the west dome is a heavy one, and thoroughly protected the 24-in. reflector and Cooke photovisual above it. The driving clock for these telescopes was near the bomb, but appears uninjured except in respect to its glass case. On the floor below falling plaster smashed the glass case of the Cooke drum chronograph, which is at present out of use. The disturbance was recorded by the Milne seismograph at oh. 57.2m. as a small, sharp oscillation of approximately 0.1" semi-amplitude.

SINCE 1908 the Somersetshire Archæological and Natural History Society has engaged in excavation work at Glastonbury Abbey, and year by year results of great historical and archæological importance have been secured. Last year, the society, at the request of the Abbey trustees, appointed a special committee to undertake the supervision of the future excavation work, and the researches will proceed systematically. An income of 250*l.* a year is needed to carry out the work efficiently, and the funds hitherto raised by subscriptions and donations are exhausted. The committee now makes a further appeal for money. Subscriptions or donations may be sent to the treasurer of the Glastonbury Abbey Excavation Fund, The Castle, Taunton, Somerset.

At the annual meeting of the Royal Geographical Society on Monday last, in addition to the presentations made to Lady Scott and Mrs. Wilson of the awards voted to their husbands, who died in the Antarctic, and that made to Lieut. Campbell, which are referred to elsewhere, the following awards were made:—The Victoria medal to Col. S. Burrard, Surveyor-General of India; the Murchison award to Major H. D. Pearson, for his work in the Sudan; the Gill memorial to Miss Lowthian Bell (Mesopotamia, &c.); the Cuthbert Peek grant to Dr. Felix Oswald (Armenia); and the Back bequest to Mr. W. S. Barclay (South America). In his anniversary address, Earl Curzon, as president, referred to the momentous events of the past year in polar exploration, and made the interesting announcement that the society expects presently to receive into its charge