

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

LONDON.—At a meeting held on May 7, Convocation received a report from the standing committee, in which is reprinted the statement presented to the Royal Commission on behalf of Convocation. The statement deals exhaustively with the origin of the commission as having reference specifically to the question of the future relations of the Imperial College to the University. Other questions involved in the commission's terms of reference are not mentioned in this statement; but Dr. Senter, one of the witnesses, put in a statement regarding the work of the University on its external side. As a record of the events leading to the establishment of the Imperial College the statement is valuable. Lord Rosebery's letter, dated June 27, 1903, to Lord Monkswell, then chairman of the London County Council, is reprinted, and a detailed account of the proceedings in the Senate in relation to the question is given. It is urged that the only changes necessary in the constitution of the University for the incorporation of the Imperial College are such as were offered by the Senate in December, 1908.

Presentation Day at the University was on May 8, the Vice-Chancellor (Sir William Collins) presiding. The report of the Principal (Sir Henry Miers) showed a decrease in candidates for all examinations as compared with 1910-11 of 12,681 to 12,263, due mainly to a decrease of entries at the matriculation examination. The number of degrees or diplomas granted was 1342, and the number of internal students is 4578. The record of endowments and benefactions given or offered during the year for university purposes amounts to a capital sum of 650,000*l.* Reference was made to the resignation of Sir William Ramsay. Finally, the Principal asserted that the activities of the University had not been checked by the general feeling of uncertainty due to the existence of the Royal Commission. The chief subject for anxiety was the decline of matriculation entries and its financial effect.

A letter from Lord Haldane to Sir Francis Mowatt, dated May 7, has been published, containing an account of the actual position of matters in regard to the proposed new university buildings. The sum of 375,000*l.* asked for the proposed site behind the British Museum was not a settled price. It is stated that the site was regarded as most suitable, because it was ascertained that additional land adjoining might be available for subsequent development. There is a risk, Lord Haldane suggests, that in consequence of the action taken by certain persons connected with the University the offers originally made may not now be available, and in the circumstances it would be idle to take steps to complete the formation of the proposed trust. "If there is to be a hostile attitude within the University itself, the task of those who wish to help in every way they can becomes a very hard one."

IN addition to a studentship in pathology and bacteriology which they endowed some time ago, the Misses Riddell, of Belfast, have now placed 25,000*l.* at the disposal of trustees to provide a hall of residence at Queen's University, Belfast, for young Protestant girl students at the University.

EXETER COLLEGE, Oxford, has appointed Mr. A. M. Hocart, late open scholar of the college, to a senior studentship, tenable for two years, in order that he may conduct anthropological research in Fiji and the adjoining parts of the Pacific region. Mr. Hocart has

already had experience of field work under Dr. Rivers in the Solomon Islands, and has since had an opportunity as a teacher of natives in Fiji of mastering the local dialect.

PROF. FILIBERT ROTH, who recently resigned his chair of forestry at the University of Michigan to accept a similar post at Cornell, has reconsidered his decision, and will remain at Ann Arbor. The Michigan regents have agreed to provide the facilities required for the extension of their forestry department. A thousand-acre "school forest" is to be purchased, which, together with the present eighty-acre forest farm, will give ample opportunity for the field work of the students.

MR. GOLDSWORTHY L. DICKINSON, fellow and tutor of King's College, Cambridge, and Mr. Percy M. Roxby, lecturer in the University of Liverpool, have been elected to Albert Kahn Travelling Fellowships. These fellowships, each of the value of 660*l.*, were established to enable the persons appointed to them to travel round the world. The founder's object is to enable men of proved intellectual attainments to enter into personal contact with men and countries they might never have known. The trust is administered at the University of London, and Sir Henry Miers, F.R.S., is the honorary secretary to the trustees, as well as a trustee himself.

THE detailed programme of papers and discussions at the Congress of the Universities of the Empire, to be held in July next, as already announced, is now complete. The congress meets for discussion on six half-days, beginning on July 2 and concluding on July 5. Among numerous other papers, the following may be mentioned:—Sir Alfred Hopkinson, Vice-Chancellor of Manchester University, on the question of the division of work and specialisation among universities; Principal Peterson, McGill University, on inter-university arrangements for post-graduate and research students; Prof. A. Smithells, F.R.S., the relation of universities to technical and professional education and to education for the Public Services; Mr. H. A. Roberts and Miss M. G. Spencer, on the action of universities in relation to the after-careers of their students; and Sir James Donaldson, Vice-Chancellor and Principal of the University of St. Andrews, on the representation of teachers and graduates on the governing body of a university. Many varied entertainments have been arranged for members of the congress. These include a luncheon to delegates by invitation of the Government at the Hotel Cecil, dinners given by several city companies, and many "At Homes."

THE Viceroy of India attended the recent Convocation of the Calcutta University, and in his capacity of chancellor of the University delivered an address. Dealing with the need for further progress in the provision of facilities for higher education, Lord Hardinge said the Government of India has decided to make a solid advance in the direction of teaching and residential universities. A recurring grant of 3 lakhs of rupees a year has been allotted, of which the Calcutta University will receive 65,000 rupees a year for the appointment of University professors and lecturers in special subjects, and for the encouragement in other ways of higher studies and research. Non-recurring grants amounting to 16 lakhs, of which the Calcutta University will receive 4 lakhs, have been allotted for the provision of University buildings, libraries, and equipment. In addition, a special grant of 10 lakhs has been reserved for hostel accommodation in Calcutta, which will be non-collegiate in character. Another sum of 10 lakhs has been

allotted for the development of accommodation in Dacca and the buildings required for the new university in that place. Lord Hardinge hopes that the liberality of the Government will be supplemented by private liberality, and that before many years have passed efficient teaching universities will take the place of the examining and federal universities which India has to-day.

THE attendance at German universities forms the subject of an article by Mr. R. Tombo, jun., in the issue of *Science* for April 26. Mr. Tombo analyses the statistics given in the *Deutscher Universitäts-Kalender* for the summer semester of the present year. There are 57,398 students in German universities, as contrasted with 57,200 for the preceding summer semester. This is, however, exclusive of 5563 auditors, who, if added, would run the grand total to 62,961, as against 61,274 during the summer semester. The University of Berlin continues to lead the list with an enrolment of 9829 matriculated students. The University of Berlin is followed by the University of Munich, with an enrolment of 6797 matriculated students and 782 auditors. The University of Leipzig ranks third with 5170 matriculated students and 925 auditors. Of the remaining universities, Bonn, Breslau, and Halle each have more than 3000 students; Göttingen, Freiburg, Heidelberg, Münster, Strassburg, and Marburg each have more than 2000, and all the other universities, except Rostock with 955, have each more than 1000 students. Of the total number of students in German universities, 52,435 are from Germany, and of the remainder 160 only are from the British Isles.

#### SOCIETIES AND ACADEMIES.

##### LONDON.

**Royal Society**, May 9.—Sir Archibald Geikie, K.C.B., president, in the chair.—A. Vernon Harcourt: The variation with temperature of the rate of a chemical change. In an inquiry into the connection between the conditions of a chemical change and its amount, one of the conditions varied was that of the temperature of the solution in which the change took place (*Phil. Trans.*, vol. clxxxvi., 1895, A, pp. 817-95). A relation was found to exist between this condition and the rate of change, expressed by the equation

$$a_1/a_0 = (T/T_0)^m,$$

where  $a$  is the rate of change, or the number of minutes in which a definite portion of chemical change is accomplished,  $T_0$  the absolute temperature  $273^\circ$ , and  $T$  any other absolute temperature. Not only do the numbers found from this equation agree very closely with the observed numbers, but the equation expresses a natural law which is nearly related to that upon which all calculations of gaseous volumes have long been based. Several later measurements of the rate of change at different temperatures have been published and compared with numbers calculated from other formulæ. In an appendix to the present paper it is shown, by one of the authors of the previous paper, that the numbers thus calculated are in less close agreement with the actual measurements than numbers calculated from his formula given above, while also the formulæ have no physical interpretation.—Dr. C. Chree: Some phenomena of sun-spots and of terrestrial magnetism at Kew Observatory. An investigation made some years ago by the author indicated the probability that a relation existed between the amplitude of the daily range of the magnetic elements and the sun-spot area, not on the same day, but several days previously. The object of the present research was to inquire into the reality of

this connection. It was found that there is a well-marked period of about 27.3 days in magnetic phenomena, in this sense, that if a certain day exhibits magnetic disturbance attaining the international standard "2," as interpreted at Kew, a day which follows either 27 or 28 days after has nearly double the chance of attaining standard "2" that the ordinary day has. This 27-28-day period was not so clearly shown in the years of maximum sun-spot frequency of the epoch considered as in the years of minimum frequency, and was most clearly shown in certain intermediate years characterised by the number rather than by the magnitude of magnetic disturbances. The conclusion that a period of about 27.3 days exists in "magnetic storms" had been reached some years ago by Mr. Arthur Harvey and Mr. E. W. Maunder, independently, considering respectively data from Toronto and Greenwich, but their conclusions have not been universally accepted. The present investigation shows that the phenomenon is not confined to the large disturbances usually termed "magnetic storms," but is exhibited in the daily range of the average day.—Sir Walter Noel Hartley and H. W. Moss: The ultimate lines and the quantities of the elements producing those lines in spectra of the oxyhydrogen flame and spark. In a recent paper by one of the authors (*Proc. Roy. Soc.*, 1911, vol. lxxxv., p. 271, Hartley) on some mineral constituents of a dusty atmosphere as determined both by flame and spark spectra, a brief reference was made to the method employed for ascertaining the weights of matter necessary to give calcium and copper lines in the spark. This work has been extended to about twenty elements. The quantities of the elements which render the ultimate lines in the oxyhydrogen flame spectra had previously been carefully determined. With the alkali metals it is found to vary between 0.008 milligram in the case of potassium, 0.01 mgrm. rubidium and caesium, and 0.1 mgrm. lithium. In the alkaline earth group, 0.01 mgrm. strontium, 0.1 mgrm. calcium, and barium 1.0 mgrm. Silver 0.1 mgrm., copper 1.0 mgrm., and gold 50 mgrms. Gallium, iridium, and thallium 0.01 mgrm., manganese 0.001 mgrm., lead 0.1, and tin 100 mgrms. The gold spectrum shows the heads of very strong bands which correspond with lines in the spark spectrum. Tin shows no lines, but the edges of bands or flutings which are enfeebled until scarcely visible.—E. Marsden and C. G. Darwin: The transformations of the active deposit of thorium. The present paper is concerned with a series of experiments undertaken with the view of discovering the genetic arrangement of the various products in the active deposit of thorium, and more particularly the transformations occurring in the product or products included in thorium C. The results give strong reason for supposing that, of the atoms of thorium C, 35 per cent. emit  $\alpha$  particles of range 4.8 cm., and become converted into atoms of thorium D, while the remaining 65 per cent. emit  $\beta$  particles and disintegrate into atoms of a very short-lived  $\alpha$ -ray product, thorium C. The experiments also show that although the  $\beta$  rays of thorium C are extremely penetrating ( $\mu = 13.5 \text{ cm.}^{-1} \text{ Al}$ ), yet they are practically unaccompanied by  $\gamma$  rays, while the relatively soft  $\beta$  rays of thorium D are accompanied by a very intense penetrating  $\gamma$  radiation containing more than six times the amount of energy of the  $\beta$  rays.—W. Wilson: The  $\beta$  particles reflected by sheets of matter of different thicknesses. (1) The radiation reflected when the  $\beta$  particles from uranium (*loc. cit.*) strike a screen can be split up into two parts, one with a very large coefficient of absorption, and the other with absorption coefficient of the same order as that of the