

increases are not to apply to members of the faculty below the rank of instructor, nor above the rank of assistant professor, and there is to be no automatic increase after instructors have arrived at a salary of 300*l.*, and after assistant professors have arrived at a salary of 400*l.* Increases are not automatic in salaries of members of the faculty who are on part time only, nor in the case of instructors and assistant professors for a year of absence on leave. Increases of salary may, of course, be given in the cases cited above, in which no automatic increase is due as of right. Larger increases than of 20*l.* are sometimes made at the discretion of the president, with the approval of the regents.

THE calendar for the session 1911-12 of the Glasgow and West of Scotland Technical College shows that the whole building now comprises more than seven acres of floor space. To quote the calendar, it "forms the largest structure in Great Britain devoted to education." It has cost, with the equipment, about 400,000*l.* The plan of confining each department to one floor has been followed in nearly every case, with the result that the internal arrangements generally are well adapted to promote efficiency in working. County secondary education committees in Scotland are authorised by the Education (Scotland) Act of 1908 to grant bursaries tenable at this college to students resident within their districts. It may be noticed, too, that a large number of firms in the area in which the college is situated have expressed their willingness to allow a selected number of their apprentices facilities for carrying out a scheme of college study conjoined with practical work. The courses of study in engineering are held during the winter session of the college, and thus student-apprentices are left free to spend the intervening summers in works. Some of these firms are willing to recognise, wholly or partially, the time spent in college as part of the apprenticeship period, but such recognition will be contingent upon satisfactory reports being received from the college in each case.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 21.—M. Arman dGautier in the chair.—The president announced the death of Albert Ladenburg, correspondant in the section of chemistry, and gave a short account of his work.—H. Deslandres and L. d'Azambuja: The velocities of rotation of the black filaments (focculi) in the upper layer of the solar atmosphere. A historical sketch of the work done on the dark focculi since their discovery by Hale and Ellermann in 1903, with special reference to the work done at the Meudon Observatory since 1908. Five diagrams are given showing successive positions of a filament on different dates, and four tables analysing various negatives.—J. Boussinesq: The spontaneous vibrations of a free bar, cooling by contact at its extremities and by radiation or convection at its lateral surface.—Kr. Birkeland: The sun and its spots. A description of experiments made with a magnetic globe as a cathode in a large discharging vessel, and a discussion of the possible bearing of these experiments on the theory of the sun. Seven photographs of the luminous phenomena observed are reproduced, and the author concludes that in the evolution of the solar system, electrical and magnetic forces must be regarded as playing a part comparable with gravitation.—A. de la Baume Pluvinel and F. Baldet: The spectrum of the Kiess comet (1911*b*). The Kiess comet was sufficiently bright during the second fortnight in July to allow of the photography of its spectrum by the prism-objective method. The wave-lengths and aspect of the bands measured are given in a table. The comet gave no continuous spectrum. Portions of the Swan spectrum and cyanogen spectrum are identified, and comparisons are made with the Johannesburg (1910*a*) and Morehouse (1908*c*) comets.—Michel Fekete: Some generalisations of a theorem of Weierstrass.—Georges de Bohezat: A method for the experimental study of the deadening of the oscillations of certain systems in motion in a fluid.—Em. Bourquelot: The glucoside from the leaves of the pear tree, its presence in the leaves of several varieties, its presence in the trunk and root. The existence of a true arbutine in the leaves,

branches, and roots of the pear has been proved.—E. L. Trouessart and E. G. Dehaut: The wild and domesticated pigs of Sardinia and Corsica.—Édouard Chatton: Some parasites of marine copepods observed by M. Apstein.—E. Roubaud: New biological researches on the solitary wasps of Africa; evolution, variations, disturbances of the maternal instinct under the influence of hunger.—C. Schlegel: The development of *Maia squinado*.—Maurice Arthurs: The intoxications produced by snake venom.—J. Basset: The determining cause of "typhoid fever of the horse" (influenza, grippe, pasteurellosis, pferdestaupe, pink eye).—Maurice Piettre: A mode of resorption of fatty reserves.

FORTHCOMING CONGRESSES.

AUGUST 31-SEPTEMBER 6.—British Association. Portsmouth. President: Sir William Ramsay, K.C.B., F.R.S. Address for inquiries: General Secretaries, Burlington House, W.
SEPTEMBER 4-6.—Centenary of the University of Christiania. President of Festival Committee: Prof. Brøgger.
SEPTEMBER 9-20.—International Congress of the Applications of Electricity. Turin. President of the Committee of Honour: H.R.H. the Duke of the Abruzzi. Honorary Secretary of the Committee: Signor Guido Semenza, Via S. Paolo 10, Milano. International Secretary: Col. R. E. Crompton, C.B., R.E., Crompton Laboratory, Kensington Court, W.
SEPTEMBER 12-15.—Celebration of the Five-hundredth Anniversary of the University of St. Andrews.
SEPTEMBER 18-23.—International Conference of Genetics. Paris. President: Dr. Viger. Secretary: M. Philippe de Vilmorin.
SEPTEMBER 25-29.—German Naturalists and Physicians, Karlsruhe.
OCTOBER 2-7.—Third International Congress of Hygiene. Dresden. General Secretary: Dr. Hopf, Reichsstrasse 4, Dresden.
OCTOBER 12-18.—Italian Society for the Advancement of Science. Rome. President: Prof. G. Ciamician. General Secretary: Prof. V. Reina, Via del Collegio Romano 26, Roma.
OCTOBER 15-22.—Tenth International Geographical Congress. Rome. President: Marquis Raffaele Cappelli. General Secretary: Commander Giovanni Roncagli, Italian Geographical Society, Rome.
DECEMBER 27.—American Association for the Advancement of Science. President: Dr. C. E. Bessey, University of Nebraska. Permanent Secretary: Dr. L. O. Howard, Smithsonian Institution, Washington, D.C.

CONTENTS.

PAGE

The Foundations of Mathematics. By G. B. M.	273
Movement and Escapement. By W. W. B.	274
Cosmical Physics	275
Botanical Monographs	276
Our Book Shelf	276
Letters to the Editor:—	
A Pseudo-Aurora—Sir Lauder Brunton, Bart., F.R.S.	278
Rainless Thunderstorms—A. A. M.; E. G.	278
Habits of Dogs—A. Everett	278
The Kacháris of Assam. (<i>Illustrated</i>).	279
The Promotion of Agricultural Research and Local Investigations	279
The Recognition of Palæobotany	280
S. H. Burbury, F.R.S. By Prof. G. H. Bryan, F.R.S.	281
Prof. A. Ladenburg	282
The British Association at Portsmouth:—	
Inaugural Address by Prof. Sir William Ramsay, K.C.B., Ph.D., LL.D., D.Sc., M.D., F.R.S., President	282
Section A.—Mathematics and Physics.—Opening Address by Prof. H. H. Turner, D.Sc., D.C.L., F.R.S., President of the Section	289
Section B.—Chemistry.—Opening Address by Prof. J. Walker, D.Sc., F.R.S., President of the Section	296
Notes	300
Our Astronomical Column:—	
Astronomical Occurrences for September	304
Brooks's Comet, 1911 <i>c</i>	304
Encke's Comet, 1011 <i>d</i>	304
The Aspect of Nova Lacertæ	304
Kiess's Comet, 1911 <i>b</i>	304
The Early Visibility of the New Moon	304
Variable Stars	304
Water Supply in the United States	304
Magnetic Observations	305
University and Educational Intelligence	305
Societies and Academies	306