

dustrial developments which have given us basic slag and potash salts, the knowledge of the fertility that can be gained by the growth of leguminous plants. From beginning to end the process of reclamation of moor and heath, as we see it in progress in north-western Europe, is stamped as the product of science and investigation.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Mr. J. T. Saunders, of Christ's College, has been appointed demonstrator in animal morphology, and Mr. J. Gray, of King's College, has been appointed demonstrator in comparative anatomy. Mr. Saunders has received a commission in the Army, but his post will be kept open for him until the end of the war. Mr. J. R. Menon, intercollegiate student, has been nominated to use the University table at the Zoological Station at Naples.

The following forms part of the address of the Vice-Chancellor of the University, Dr. M. R. James, provost of King's College, on his re-election at the beginning of this month:—

"The remembrance of what has been brilliant or sorrowful in the three terms has paled, for the time at least, before the events of the Long Vacation. The University meets in such circumstances as it has never known. We shall be few in number, and perpetually under the strain of a great anxiety. We may be exposed to actual peril: in any case, we must look forward to straitened resources and, what is more, personal sorrows. Yet there is no doubt that we are bound to carry on our work; for by it we can render definite service to the nation. Our part, while we encourage all of our students who are capable of doing so to serve their country, and while we surrender to that service many valued teachers, is to prepare more men—especially in our medical schools—for rendering active help, and to keep alive that fire of 'education, religion, learning, and research' which will in God's good time outburn the flame of war. Let us devote ourselves to making useful men of the new generation. Let us confine our own controversies within the narrowest limits, and be ready if necessary to postpone them altogether. Let our advanced work—however irrelevant it may seem to the needs of the moment—be unremittingly and faithfully pursued.

"I have spoken of the trials which we are bound to anticipate as a consequence of the war. Let me add that we shall be the better able to bear them, not only because we know that our cause is just, but because we know that the University has contributed a worthy share of its sons to champion that cause. Nearly 2000 applications for commissions from our younger graduates and our undergraduates have passed through the hands of the indefatigable committee of the Board of Military Studies; and this number does not include the very large contingent who have applied through other bodies, those who already held commissions at the outbreak of war, those who have enlisted in the ranks of various branches of the service, or those who are giving their help in tending the sick and wounded without enlisting. It is not at this moment possible to compile accurate lists of all who have responded to the great call. I hope, however, that each college will set itself to secure information as to its own members, with a view to the ultimate publication of the roll of honour of the University.

"It is our plain duty to secure that those who have interrupted their University career for the sake of their country shall suffer the least possible amount of disadvantage thereby. Some measures have already

been taken with this object, and others will be necessary.

"I shall have, further, to ask for your co-operation in an effort which is being made to enable some of those Belgian students who in the course of their gallant resistance have been deprived of their whole academic equipment, to continue, in our midst, and with the help of our libraries and teaching apparatus, the life of their universities. This is an object which, I am confident, the Senate will feel honoured in supporting."

The next combined examination for fifty-three entrance scholarships and a large number of exhibitions, at Pembroke, Gonville and Caius, Jesus, Christ's, St. John's, and Emmanuel Colleges, will be held on Tuesday, December 1, and following days. Mathematics, classics, natural sciences, and history will be the subjects of examination at all the above-mentioned colleges. A candidate for a scholarship or exhibition at any of the six colleges must not be more than nineteen years of age on October 1, 1914. Forms of application for admission to the examination at the respective colleges may be obtained from the masters of the several colleges.

MR. H. PATTERSON, University of Leeds, has been appointed part-time lecturer in physical chemistry at Battersea Polytechnic.

It is stated in *Science* that the medical school of Western Reserve University receives by the will of Mr. Liberty E. Holden a bequest said to be nearly 200,000*l.* The fund is to be known as the Albert Fairchild Holden Foundation, in memory of Mr. Holden's son.

THE Earl of Rosebery has made a donation of 1200*l.* to the London School of Economics and Political Science for the endowment of a prize to be awarded annually in the department of railway transport at that school of the University of London.

THE Rural Education Conference, which was constituted by the Board of Agriculture and Fisheries and the Board of Education in June, 1910, was appointed for a term of three years. This period having expired, the conference has been reconstituted by the Board of Agriculture and Fisheries under the name of the Agricultural Education Conference. The duty of the conference will be to discuss, and to advise, the Board upon, all questions connected with agricultural education which fall within the province of the Board of Agriculture and Fisheries, and specific questions will, from time to time, be referred by the Board to the conference for consideration. In addition, any member may suggest for discussion questions other than those formally referred to the conference. The Lord Barnard has been appointed chairman of the conference, and Mr. H. L. French (Board of Agriculture and Fisheries, Whitehall Place, S.W.) will act as its secretary.

DETAILED information as to the work of the numerous departments among which the varied activities of the University of Leeds are shared is contained in the calendar for 1914-15. In common with other modern universities, Leeds University includes a faculty of technology, and among its staff are to be found professors of engineering, mining, textile industries, tinctorial chemistry, and dyeing, leather industries, coal gas and fuel industries, and agriculture. Students may graduate in applied science as well as in pure science. The University, which is situated in the heart of a mining district possessing some of the deepest and best equipped of modern English collieries, enjoys the cordial support of the owners and managers of mines, who give the department every facility for

instructing its students. The courses in gas engineering and the technology of fuel meet the requirements of students who are preparing for responsible positions either as gas engineers or in fuel and metallurgical industries. In agriculture the instruction has been arranged to meet the requirements of young men who intend to become farmers, land agents, valuers, or teachers of agricultural science. Other examples could be given of the efforts of the University authorities to provide instruction and guidance for all parts of the community in its area and the support which is being given to the University by all sections of society augurs well for its future usefulness.

FROM Prof. H. S. Carslaw we have received a report, presented to the International Commission, dealing with the teaching of mathematics in Australia, and now published by Angus and Robertson, Sydney, 1914. Up to the present the education in the schools has been mainly influenced by examinations of the "local" type, controlled by the Australian universities. Prof. Carslaw condemns this system, which, of course, tends to lower the educational ideal of the schools to mere examination cramming. A comparison of the syllabuses of these examinations with those now being introduced into the State high schools, and the system of leaving certificates, fully supports what Prof. Carslaw states. The older examinations contain much work that is difficult, useless, and unstimulating, while the new syllabuses are much more practical, interesting, and educationally valuable. Coming next to the universities, we find that the system of combining mathematics and physics in one department still prevails in the newer institutions, and the numbers of students taking mathematics is on the whole distinctly small, having regard of the fact that the subject is compulsory for engineering students. The course in insurance mathematics is a valuable feature of the Melbourne University, and one which we should like to see copied elsewhere and made attractive to candidates for general degrees in arts and science.

THE calendar for the present session of the Armstrong College, Newcastle-upon-Tyne, has been received. The college ranks, together with the "Durham colleges," and the College of Medicine, as one of the three constituent units of the University of Durham. The faculties of science and commerce in the University are seated entirely at Armstrong College, in which alone are held the classes and examinations requisite for bachelor degrees in these faculties. In addition to pure science, the college gives instruction in the various branches of engineering, mining, metallurgy, naval architecture, and agricultural science. The agricultural department directs the Northumberland County Agricultural Experimental Station and the Durham County Station for Dairy Research. For the purpose of forestry instruction the college possesses 900 acres of wood, and its zoological equipment includes a laboratory of marine biology. College diplomas in engineering, naval architecture, mining, mine surveying, agriculture, and commerce, are open to students who are unable to take a complete degree course. A list of the various fellowships for research, scholarships, and exhibitions, of which there is a large number, is given in the calendar. We notice that a fellowship of the value of 125*l.*, and two research studentships of the value of 62*l.* 10*s.* each, are offered for competition in June of each year. The holders must engage in advanced study or research to the satisfaction of the council and be graduates of the University of Durham.

A COPY of the calendar for 1914-15 of the Manchester Municipal School of Technology has been

received. It is arranged in two parts, one dealing with university courses and the other with part-time courses. The school offers systematic training in the principles of science and art as applied to mechanical, electrical, municipal, and sanitary engineering; architecture and the building trades; the chemical industries; the textile industries; and photography and the printing crafts. Its work includes advanced study and research; university courses in the faculty of technology in the Victoria University of Manchester, of which the school is an important constituent; part-time day courses for engineers' and other apprentices whose employers allow them to devote one whole day a week to study; part-time evening courses, involving attendance on three evenings a week for five years; and other part-time classes for advanced study and research, or in preparation for the external degrees of the University of London, or for other purposes. Students who, having passed the matriculation examination or its equivalent, satisfactorily complete a three years' university course in accordance with the regulations, become entitled to the degree of Bachelor of Technical Science. A fourth year's course of advanced study and research prepares such graduates for the higher degree of Master of Technical Science. These degrees give the holders exemption from further examination when desirous of entering certain professions and learned societies, which are enumerated in the calendar. Very full particulars of the equipment, the various courses, and the general arrangements of the school are given in a manner which makes very simple reference by the intending student.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 14.—M. P. Appell in the chair.—A. Lacroix: The recent eruption of Ambrym (December, 1913) and the constitution of the lava from this volcano. The lava is of the angitic labradorite type, too poor in olivine to be considered a true basalt. A complete chemical analysis is given.—Kr. Birkeland and M. Skolem: Calculations of the lines of equal intensity in the zodiacal light.—B. Jekhowsky: The eclipse of the sun of August 20-21, 1914. Particulars of observations taken at the Observatory of Montsouris.—Ch. Vaillant: The replacement of photographic plates by gelatino-bromide paper in radiography. By the use of a reinforcing screen with exposures of from 4 to 30 seconds good negatives were obtained. The cost is about one-thirtieth of the ordinary plates.—Julien Loisel: The monographic representation of the mean direction of the wind.

September 21.—The President announced the death of M. Pérez, correspondent for the section of anatomy.—Maurice Hamy: Remarks relating to the construction of an equatorial *coudé*.—Marin Molliard: Chemical modifications of plant organs undergoing a true fermentation.

CALCUTTA.

Asiatic Society of Bengal, September 2.—W. Ivanow: The language of the gypsies of Qaināt (in eastern Persia). The gypsies of eastern Persia are a wandering tribe who live exclusively in tents and present signs of their Aryan origin, with Shemitic, Turkish, and even Dravidian admixtures. They seem to be allied to the Jats, the well-known Kshatriya tribe of India, to the Da-Yueti tribe to which Kaniska belongs, and to other kindred tribes. They dress like Persian peasants, and their religion is Islam of the Shia Sect. Their language has lost its original purity and is now about the same as Persian spoken in Qaināt. There are still some genuine gypsy words which are used to