

Prof. Lowry then showed "A New Elutriator for Rapid Use," especially adapted for use in factories. The gravimetric determination of the residue of coarse particles is here replaced by a simple measurement of the height of the column of grit in a narrow tube, and tests can therefore be made even where the ordinary facilities of a chemical laboratory are not available. Lieut.-Col. J. V. Ramsden, of Shropshire Mines Ltd., stated (at the previous meeting) that with the help of this instrument he had been able, whilst using the same grinding plant, to reduce the residue in ground barytes from 6 per cent. to 0.5 per cent. Prof. Lowry added that since this instrument was introduced two years ago the relative merits of British and imported samples of ground barytes had been reversed completely, with the result that the finest products that he had tested recently were of British manufacture.

Mr. W. J. Palmer referred to the practical importance of fine grinding in the paint industry, both in the preparation of enamels and as a means of preventing the hard setting of paint in cans which were sent abroad or stored for some years before being used. Mr. Noel Heaton contradicted the general impression that the ball-mill tends to produce round particles, since when the glass was ground in this way, even to 0.003 or 0.004 mm. diameter, the particles when examined by the microscope had the normal appearance of broken glass and were not in the least degree rounded.

Dr. R. Lessing mentioned some applications of

elutriation in connection with the fire-brick, coal and metallurgical industries. Its application to metallurgy was described by Mr. Holman in connection with tin slimes, where a loss of 10 to 15 per cent. was traced to the carrying away of very fine particles in a current of water.

Mr. Tate, of the Government Laboratory, referred to elutriation as a process of analysis in the separation of cocoa from husk in the ground product; a paper on this aspect of the subject was also submitted by Mr. R. Whympster of Messrs Peek, Frean & Company.

Mr. B. A. Keen, of Rothamsted, criticised the method of elutriation as applied to the mechanical analysis of soils, largely on the ground that the shape of the particle was as important as the size in determining the velocity of water required to lift it. In dealing with very fine particles the simpler process of sedimentation was to be preferred.

Prof. Porter, the President of the Faraday Society, in closing the discussion, referred to centrifuging as a means of grading fine powders, and commented on the relationship which Prof. Lowry had put forward between velocity and grain-size. He also referred to the utility of the discussion and especially to the value of bringing together workers from different fields, who could present information which, although well known to one section of individuals, might not be known at all to other groups represented at the meeting.

### The International Petroleum Commission.

AT the ninth annual General Meeting of the Institution of Petroleum Technologists, held on March 14, Prof. J. S. S. Brame delivered his presidential address, taking for his subject the proposals for the re-establishment of the International Petroleum Commission. International Petroleum Congresses were held in 1900, 1904, and 1908, and committees were appointed to establish methods of testing products. Little was actually achieved, and in 1909 an International Petroleum Commission of wider scope was established. The organisation of an English National Section was referred to the Institution of Petroleum Technologists by Engler and Ubbelohde, but the intended meeting of the Commission at Bucharest in 1914 was prevented by the outbreak of war.

At the first annual meeting of the Petroleum Products section of the Société de Chimie Industrielle at Paris in 1921, M. Schmitz suggested the re-constitution and endowment of this Commission to be centred at the University of Strasburg. He spoke somewhat bitterly of the Americans "profiting by the general disorganisation to seek to abandon the

analytical methods previously decided upon, in favour of their own."

Prof. Brame expressed grave doubts as to the wisdom and the justice of M. Schmitz's address. He could not believe that the largest oil-producing country, which had created such splendid organisations as the Bureau of Mines and the American Society for Testing Materials, was likely to depart from the methods of oil analysis it had elaborated and adopted. He outlined the development of these Institutions and the standard methods of petroleum testing they had recommended, and spoke of the cordial relationship between the Standardisation Committee of the Institution of Petroleum Technologists and these American organisations, from which collaboration he hoped would result an agreed system of nomenclature and specifications of the greatest mutual advantage. Such agreement he considered of much greater value to the two countries having by far the largest interests in petroleum than could be gained by the reinstitution of an International Petroleum Commission.

### Facilities for Foreign Students in American Colleges and Universities.

THE Bureau of Education of the Government of the United States have issued under the above title, as Bulletin No. 39 of 1920, a revised and enlarged edition of a valuable handbook by Dr. S. P. Capen first published in 1915. It presents in a concise and readily intelligible form a comprehensive survey of a subject concerning which few people in this country have more than a very fragmentary knowledge. After a brief account of the organisation of education of all grades and a historical summary of the college and university systems, the Bulletin gives a description of the parts and working of the typical university and draws a comparison between American and other educational institutions. Next

follow particulars of the cost of living and travel, athletics, clubs, etc., and lists of institutions of collegiate or professional grade located in the principal metropolitan centres of higher education, namely, New York, Chicago, Philadelphia, St. Louis, Boston, Baltimore, San Francisco, New Orleans, and Washington. Forty-five pages are devoted to a detailed definition of the requirements of the College Entrance Examination Board, an organisation formed by some 30 colleges together with the principal associations of colleges and secondary schools, which holds examinations in almost every State and in several foreign countries, including Canada, England, and France.

Colleges (and the collegiate, or undergraduate, divisions of universities) have, we are informed, come by common consent to express their entrance requirements in terms of "units," a unit representing "a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A four-year secondary school curriculum (the normal preliminary to admission to a college) should be regarded as representing not more than 16 units of work." Accordingly the definition of requirements includes not only examination syllabuses but also outlines of secondary school courses of study. Accounts of some approved methods of instruction and typical time-tables are added. As pointed out in the article on America in the *Universities Year-book*, 1922, "a peculiarity of the American system of grading, both in secondary and in higher institutions, is the weight attached to the length of time spent under instruction, a degree being attainable by gradual accumulation of a specified number of 'credits' (certificates of definite periods of time spent successfully under instruction) which thus largely replace the examinations used in other countries for testing the student's capacity at various intervals."

More than half of the *Bulletin* is devoted to descriptions of 74 universities, colleges, and technical and professional schools which have already been frequented by foreign students or which give courses likely to prove of special interest to such students. The descriptions deal with courses, degrees, equipment, expenses, strength of staffs, number of students, number of foreign students, and miscellaneous items of special interest to foreign students. There are also statistical tables for 1918 relating to State universities and certain agricultural and mechanical colleges, schools of mines, and other technological schools, and a list of medical colleges rated as Class A by the council on medical education of the American Medical Association. A few copies of the *Bulletin* are available at the *Universities Bureau*, 50 Russell Square, and can be obtained on payment of 1s. 3d. to cover the price (15 cents) and postage.

### University and Educational Intelligence.

**BIRMINGHAM.**—The University has received from the Trustees of the James Watt Memorial Fund the sum of 5000*l.* towards the establishment of a Chair of Research in Mechanical Science to be known as "The James Watt Chair."

Mr. James Couper Brash has been appointed professor of anatomy, to fill the vacancy occasioned by the lamented death of Prof. Peter Thompson. Mr. Brash held the position of acting professor during the leave of absence granted to the late professor. The appointment of Mr. Cyril A. Raison as part-time assistant in anatomy has been confirmed by the Council.

**CAMBRIDGE.**—The family of the late Mr. J. M. Dodds have founded at Peterhouse a studentship to be known as the J. M. Dodds studentship for the promotion of advanced study or research in the subjects of mathematics or physics. The first election will be held in June 1923.

**LONDON.**—Application for grants from the Dixon Fund for assisting scientific investigations must be made before May 15 to the Academic Registrar, University of London, South Kensington, S.W.7.

Prof. J. A. Fleming has been compelled, on account of illness, to cancel all engagements for the present, and will consequently be unable to deliver the course of lectures on "Modern Improvements in Telephony" at University College which had been

announced to begin on April 26. It is hoped that Prof. Fleming will be able to deliver the course in October.

**MANCHESTER.**—Prof. J. W. Smith has intimated his intention to resign, as from the end of the present session, the Chair of Systematic Surgery, which he has held since 1911. The following appointments have been made in the Faculty of Technology: Lecturers in Mechanical Engineering, R. M. Anderson, H. Threlfall; Lecturer in Spinning, J. Winterbottom; Demonstrators in Chemical Technology, W. H. Brindley, W. Hubball, W. H. Kelly, Esther Levin, and J. D. Mounfield; Demonstrator in Metallurgy, G. Mohn.

**SHEFFIELD.**—A course of five lectures on coal will be given in the Department of Applied Science on April 27 and successive Thursdays at 5:30 P.M. The first lecture, to be delivered by Dr. Marie Stopes, will deal with the palæobotanical aspects of the constitution of coal; the second, by Mr. F. S. Sinnatt, with the preparation of coal for the market; the third, by Dr. R. Lessing, with the carbonisation of coal; the fourth, by Mr. M. Wynter Blyth, with the manufacture of crude benzole; and the fifth, by Prof. J. W. Cobb, with the nitrogen in coal and its recovery as ammonia.

THE Education and the Parliamentary Committees of the British Science Guild have had under their careful consideration the recommendations of the Geddes Committee so far as these affect education. Their report, which has received the approval of the executive committee of the Guild, embodies certain proposals with the object of effecting reduction in expenditure where it can be shown to be without detriment to the legitimate purposes of educational expenditure. They desire to suggest one or two changes in such expenditure whereby economy in time and money can be achieved. It is essential that financial control shall be the duty of both State and local education authorities. The first consideration is, how much can be raised annually, both locally and Imperially, in respect of education and its ancillary needs, and next, how it can best be allocated in accordance with the legitimate claims of each department. The second essential is that the education committee to which the administration of education is delegated by the local authority shall be held responsible for the use of the funds. The present method of allotment of State moneys, namely 50 per cent. of the permitted local expenditure, is not peculiar to education but prevails in other State departments, and is under review with regard to its continuance. It is alleged that it multiplies unduly public officials, increases expense both of time and money, and that it is subversive of the principle of local control. The suggestion in the Geddes Committee's Report that the lower limit of compulsory age should be raised from five to six is commended, but with the proviso that it shall be accompanied by the institution of nursery schools for young children under the age of six years. A modification of the present scholarship system is suggested whereby only children of exceptional capacity, and whose parents cannot pay for their further education, shall be eligible for free places and for maintenance grants, available in schools of widely varying type. It is recommended that the practice of duplication of inspectorships should be abolished. One set of inspectors would be found quite efficient. If these reforms were carried out, much of the time now taken by unnecessary clerical work on the part of the highly paid staff of teachers and officials would be saved, and their efforts be devoted to more fruitful educational results.