

without extraneous aid, receive only the smallest pittance from it. He hoped the grant would be on that basis for a term of years. What the University of Birmingham would get out of this depended on Sir William M'Cormick's Committee, which would advise the Government. He attached great importance to the advice of that Committee on the administration of the grant. "The less Government interference the better. Whatever you do, don't sacrifice your independence; don't come to that condition, one of those which brought Germany to her ruin." Professors of universities must be independent men, free to express their individual thoughts, subject to such control as the Chancellor or the authorities of the University might think right to impose on them. He did not want direct Government control or interference; he did not want party "pull"; he did not want anything to govern the grant except the relative merits of the recipients. Therefore he attached great importance to the independent Committee of Sir William M'Cormick, which had secured the confidence of every University which it was called upon to examine, and had been a real friend and of real assistance to those universities.

The Government had laid down general lines for the guidance of that Committee. In the first place, it could not encourage any university to undertake new developments before it had made adequate provision for that which already existed. If any grants are expected in respect of new developments, it must approve these new developments as being suitable to the general scope of the university in which they are proposed. Moreover, the work done must be of university standard. Finally, the grant would depend on the amount of local support given by the city and the Midlands. "If the citizens of Birmingham, if the towns and counties round, do not care enough for their University, and all that it means to them, to give it adequate local support, then whatever the Member for West Birmingham might be allowed to say, the Chancellor of the Exchequer will tell you flatly that if you do not value your Midland University you cannot expect the taxpayer at large to pay for conveniences for you to which you yourselves will not contribute." He most earnestly hoped that the citizens of Birmingham, and the counties and boroughs which surrounded them, would co-operate to make the University a common source of learning and of wealth for them all.

The Principal (Mr. C. Grant Robertson) read a letter from the President of the Board of Education, who wished success to the appeal, and remarked that "all over the country we are faced with the paradox that while the nation has never derived more benefit from its universities, these institutions have never found it more difficult to carry on their existence."

Mr. Grant Robertson pointed out that 42 per cent. of the students of the University came from Birmingham itself, 42 per cent. from the region round about, and the remainder from distant parts, and he hoped that the surrounding districts would contribute accordingly; at present their contribution was not one-tenth of that given by the City of Birmingham. He emphasised the underpayment of the staff; he believed that there was not one of them who could not double his income by leaving the University at that moment. By what moral right did we expect gifted men to give services at a wage which in industry would be regarded as contemptible? Professors could no more be improvised than admirals or generals. Facilities for research were indispensable; a university in which research did not flourish was a crippled institution. There was, too, a growing and insistent demand for extra-mural work that ordinary men and women

might benefit. This demand must be met, but it could not be met without money. It was a most promising sign that the people were turning to the university to learn the duties and solve the problems of citizenship. They were asking for instruction in subjects which went to the root of civic life—history, political theory, economics, and civics—and by giving this instruction the universities would be doing much to make democracy safe for the world.

The problems of the present and near future were commonly called economic; they were really spiritual and moral, and they could not be solved by merely material remedies. We were victors in the war, and our universities might be made potent instruments in the spiritual, moral, and intellectual reconstruction of society. This might be an inauspicious time for an appeal, but the University was faced with a crisis; it must either act or succumb.

In the evening the Lord Mayor (Alderman William Cadbury) presided over a meeting in the Town Hall. Lord Robert Cecil made an eloquent appeal, showing the discreditable state of this country in the matter of university education as compared with the United States, with Germany, and, most of all, with Scotland. It was a curious fact that in England people seemed to think that anyone could use his mind without special training. This was a grave fallacy, and a university was essential to provide the necessary mental training which was so vital to us as a nation. With the increasing responsibility which was being thrust upon the people (in foreign politics, for example), it was of the utmost importance that the working classes should have full opportunities of receiving education, and especially university education.

Mr. Neville Chamberlain, M.P., appealed especially to the manufacturers, banks, insurance companies, and others dependent on industry for their money. He contrasted the business methods of forty years ago with those of the present, showing that to-day—when even directors are supposed to know something of the business they direct—a constant supply of highly trained young men such as the University of Birmingham can provide is an essential factor in the success of our national commerce. If it paid men to invest large sums of money in securing the raw materials of their business, it must pay them even more to invest a modest sum in maintaining the efficiency of an institution which turns out brains—quite as important as raw materials in the success of a business.

A resolution—"That this meeting, recognising the importance of the University of Birmingham in the commercial, intellectual, and social life of the Midlands, and convinced of its need for greatly enlarged funds, cordially supports the appeal now to be issued"—was carried unanimously.

At the close of the meeting the Pro-Vice-Chancellor (Alderman Clavton) announced that a sum of 200,000*l.* had been conditionally promised.

### Aeronautics at the Science Museum, South Kensington.

THE collection of aeronautics in the Science Museum has been recently rearranged, and now occupies one of the galleries of the new Science Museum Buildings in Exhibition Road, South Kensington. Many important additions have been made to it, so that visitors can study the development of aeronautics from early times in the many objects of great historical interest, while the progress made in aviation during the last six years is represented by numerous exhibits which have been recently acquired.

The collection is arranged in six sections: Aeroplanes and aeroplane models, aeroplane construction, engines, instruments, experimental apparatus, and ballooning.

In the first of these an object of especial historical interest is the Henson flying machine model of 1842-45, which bears a striking resemblance to the modern monoplane, but was doomed to failure chiefly on account of the lack of a light engine of high power. Early pioneer work in gliding is illustrated by Lilienthal's glider, similar to the one on which the inventor met his death in 1896.

The development of the modern aeroplane can be followed in the series of scale models by which the machines of the Brothers Wright, Voison, Farman, Blériot, Santos-Dumont, and the German Taube are represented. Among the full-size machines are the only existing machine of Cody and the Vickers-Vimy Rolls-Royce aeroplane which crossed the Atlantic last year.

In the section devoted to aeroplane construction are examples of historical and modern propellers, and actual portions of early and modern aeroplanes in which the methods of construction may be compared. Portions of an early Wright biplane have been preserved, and the visitor can operate and study the control mechanism of this machine.

The collection of aeroplane engines ranges from the early steam engines of Henson and Maxim to the modern high-power petrol engine, and the collection of engines of types used during the war, including British, French, Italian, as well as German, models, is of great interest.

A wind-channel and a water-channel for experimental work may be seen in operation; the principal instruments used in aerial navigation and reconnaissance are also shown. Balloons and airships are not as yet fully represented, but to all sections additions are continually being made.

### University and Educational Intelligence.

CAMBRIDGE.—An extension of the metallurgical department of the chemical laboratory, provided by the generosity of the Goldsmiths' Company, was opened on October 5 by the Prime Warden. It includes rooms for the study of high temperatures, general metallographic research, assaying of gold and silver and their ores, a balance-room, and general provision for students working at analytical and general metallurgy.

E. K. Rideal has been elected a fellow of Trinity Hall, and H. Glauert and A. D. Ritchie fellows of Trinity.

WE learn from *Science* for September 17 that the University of Buffalo has received from O. E. Foster a gift of 400,000 dollars for the erection of a chemistry building. It has also received anonymous gifts of 250,000 dollars towards endowment and of a library building.

A COURSE of ten public lectures on "Medieval Contributions to Modern Civilisation" will be delivered at King's College, London, during the present term on Wednesdays at 5.15. Philosophy will be dealt with on October 27 by Prof. H. Wildon Carr, and Science on November 3 by Dr. Charles Singer. Other subjects are Religion, Art, Literature, Education, Society, Economics, and Politics.

THE *Pioneer Mail* for September 17 states that the Bill to establish and incorporate a Moslem university

at Aligarh has been passed by the Imperial Legislative Council. The Viceroy congratulated the Mohammedan community on the new institution, and several Mohammedan members expressed their thanks to his Excellency for his interest in the provision of educational facilities for their community.

IN a public address delivered during the course of the recent second annual conference of the Reading and District Teachers' Association, Mr. H. A. L. Fisher, President of the Board of Education, stated some facts relative to the cost of education. In the last two years the net total expenditure has risen from 19½ millions to 45½ millions, *i.e.* the cost of education has been more than doubled. The largest part of this increase is represented by additions to the salaries of teachers, of whom there are now nearly 200,000 in the public service. The additions to salaries amount to 130 per cent. increase on pre-war salaries, while the cost of living during the same period has risen by 152 per cent.; this increases the cost per child by 119 per cent. Before the war, local education authorities bore 53 per cent. of the expenses incurred, and the Board of Education 47 per cent.; now the position is exactly reversed. Mr. Fisher is of opinion that developments under the Education Act of 1918 and the cost of putting into effect the recommendations of the two Burnham Committees which are now sitting will give rise to a steady increase in the cost of education.

THE report of the University of Leeds for the year 1918-19 has been received. Full lists are given of the professorial and executive staff, before entering upon the report proper, which, it is worth noting, is the fifteenth which has been issued since the charter was acquired in 1904. It reviews the growth of the University from the autumn of 1918 to the spring of 1920, although the statistics and accounts are mostly confined to the session 1918-19. During the period under review the number of students taking full-time courses has been doubled; unfortunately, only one-sixth of this number enjoy collegiate life in the limited number of hostels available. The financial strain caused by the increased demand for higher education bears heavily on the University, and in consequence an appeal for 500,000*l.* has been issued. During the war more than fifteen hundred members served in his Majesty's forces, and some five hundred casualties were sustained. The head of the chemical department acted as chief chemical adviser to the Home Forces, and other members of the faculty undertook the responsible duties of testing varnishes, of manufacturing antiseptics and drugs, of testing high explosives, etc. The leather, engineering, textile industries, and colour chemistry departments also took active parts in researches instituted by the Government. Among the grants which have been made to the University, the most important is a sum of 36,000*l.* from the Treasury as an annual grant, and a further non-recurrent sum of 9000*l.* for the session 1920-21. An annual grant of 3800*l.* for five years has also been made towards the maintenance of the School of Agriculture. A number of friends of the late Sir Swire Smith from Keighley and district have raised the sum of 3000*l.* for the endowment of a fellowship, open to graduates of any faculty, for the purpose of conducting research. The remainder of the report is devoted to a statement of the deaths, resignations, and appointments of University officials. Towards the end of the report each department is taken separately, and an account of its work during the past academic year given.