

## Educational Topics and Events

CAMBRIDGE.—The Rockefeller Foundation has agreed to make a grant of not more than £1,200 a year for five years from January 1 for research in cellular physiology at the Molteno Institute under the direction of Prof. D. Keilin.

Dr. P. Maitland, of Jesus College, and Dr. B. C. Saunders, of Magdalene College, have been appointed University demonstrators in the Department of Chemistry.

At Girton College, Dr. M. L. Tomlinson has been elected to a research fellowship.

LONDON.—Dr. Thomas Nicol has been appointed to the University chair of anatomy tenable at King's College. He has been since 1927 senior lecturer in, and for a time acting-head of, the Anatomy Department in the University of Glasgow.

The title of emeritus professor of town planning in the University has been conferred on Prof. S. D. Adshear on his retirement from the University chair of town planning at University College.

An offer by Sir Montague Burton for the partial endowment of the University chair of international relations tenable at the London School of Economics has been accepted with thanks; the title of the chair is to be changed to 'Montague Burton Chair of International Relations'.

OXFORD.—William Hume-Rothery, of Magdalen College, has been granted the degree of D.Sc.

THE annual report for 1934 of the University of Leeds gives prominence to university housing problems and their solution. It assures subscribers to its building fund—nearly half a million sterling—inaugurated in 1925, that they have "once for all laid securely the foundations of the future usefulness and prosperity of the University". The new buildings have already, it is stated, lengthened the years of usefulness of men whose health was precarious in the former makeshift and exiguous quarters. The realisation of a long-deferred project for acquiring an adequate Students' Union Building is now in sight, thanks to a gift of £25,000 by Mr. W. Riley-Smith, of Tadcaster. The new library for which Lord Brotherton left £100,000 will be ready next March, and will house the famous Brotherton collection, the transfer of which to the University was effected on October 31 with impressive ceremony in the presence of the Chancellor. One of the most significant events of the year was the approval of a proposal for a School Certificate to be followed by a Higher School Certificate on a broader basis as a condition of entrance to the University, and the discontinuance of the issue of Matriculation Certificates. This should check the crying evil of the distortion of school curricula to make them fit in with Matriculation Certificate requirements. New links with secondary education were formed by establishing a Secondary Schools Council, consisting of an equal number of headmasters and headmistresses on one hand and members of the Senate on the other, for discussing matters of common interest. Among other important items of research work during the year was an investigation of the method of X-ray analysis as applied to biological tissue. For this the Rockefeller Trustees agreed to increase their grant to more than £1,000 a year for three years.

## Science News a Century Ago

## Memorial to Watt at Manchester

ON Monday, January 11, 1836, "a most numerous and highly respectable meeting took place in our Town-hall," said a Manchester correspondent of *The Times*, "for the purpose of taking into consideration the best means of perpetuating the memory of the late celebrated James Watt Esq., whose splendid discovery of the condensing steam-engine has conferred such incalculable benefits upon the civilized world, but especially in this important district. . . . Lord Francis Egerton, M.P. for the southern division of this county, and as heir to the Bridgewater property in Lancashire . . . has intimated his intention to our authorities to erect a monument to the memory of the late Francis, Duke of Bridgewater . . . Ought the two monuments be erected close to each other—the Duke of Bridgewater as the father of our inland navigation, and Watt as the inventor of the condensing engine?"

Nothing came of the proposal at the time, but about twenty years later the matter was taken up again and on June 26, 1857, the bronze statue of Watt by Theed now in Piccadilly, Manchester, was unveiled.

## The Zoological Society

AN ordinary scientific meeting of the Zoological Society was held on January 12, 1836, William Yarrell being in the chair. "The chairman presented a case containing a male and female dotterell, with a young bird and an egg, just received from Mr. Hesham at Carlisle, which had been taken on Skiddaw, and consequently proved incontestably, for the first time, that this bird is bred in Britain. Mr. Gould presented several specimens of Indian crows from Asia, two rare varieties of which were from the Himalaya Mountains, as well as several species of mocking birds from North and South America and the West Indies. . . . Among the company were the Dean of Carlisle, Dr. Beck from Copenhagen, Messrs. Bennett and Owen, Mr. Cumming, who is about to proceed on a voyage of natural history to Manila, and other distinguished naturalists."

## The Government and Babbage's Calculating Machines

So early as April 1, 1823, the Government had asked the opinion of the Royal Society on the merits and utility of Babbage's calculating machine, and with this began a correspondence lasting about twenty years. In his "Passages from the Life of a Philosopher", Babbage included a "Statement relative to the Difference Engine, drawn up by the late Sir H. Nicholas from the Author's Papers", and in this it is said "On the 14th of January, 1836, Mr. Babbage received a communication from the Chancellor of the Exchequer (Mr. Spring Rice), expressing his desire to come to some definite result on the subject of the Calculating Engine, in which he remarked, that the conclusion to be drawn from Mr. Babbage's statement to the Duke of Wellington was, that he (Mr. Babbage) having invented a new machine, of far greater powers than the former one, wished to be informed if the Government would undertake to defray the expense of this *new* Engine."

To this Babbage replied on January 20 that he did not perceive that his statement to the Duke of

Wellington contained any application to take up the new or Analytical Engine, which, however, he said "is not only capable of accomplishing all those other complicated calculations which I had intended, but it also performs all calculations which were peculiar to the Difference Engine, both in less time, and to a greater extent: in fact, it completely supersedes the Difference Engine." Six years later, on November 4, 1842, the then Chancellor of the Exchequer wrote saying that he and Sir Robert Peel "both regretted the necessity of abandoning the completion of a machine, on which so much scientific labour had been bestowed."

#### Electrostatics: The Great Cube at the Royal Institution

IN December 1835 Faraday had begun his researches in electrostatics with some experiments on a large copper vessel, borrowed for the purpose. Not satisfied with this, it occurred to him to use a large paper box or cube big enough for him to get inside; and this, early in January, he set to work to make. "Have been for some days past engaged in building up a cube of 12 feet in the side" he wrote on January 15. "It consists of a slight wooden frame, constituting the twelve linear edges, held steady by diagonal ties of cord; the whole being mounted on four glass feet,  $5\frac{1}{2}$  inches long, to insulate it. The sides, top and bottom are covered in with paper". The frame was also strengthened with ties of copper wire, which, with some slips of tin foil pasted on the inside, served to conduct electricity to all parts of the paper covering. "The whole stands in the Lecture room. . . . The cube rises in the middle of the room above the level of the bottom of the gallery, and appears of enormous size".

The cube was electrically charged from a frictional machine until sparks flew off at the corners; and with it, Faraday confirmed and extended the observations he had made with the copper vessel. The whole of the electricity resided on the outside surface. An insulating stool was brought up immediately under the bottom of the cube, so as to provide a firm platform and yet preserve the insulation. "I now went inside the cube, standing on the stool, and Anderson worked the machine until the cube was fully charged, and he continued working the machine. I could by no appearance find any traces of electricity in myself or the surrounding objects. I could not affect the gold leaf electrometer within". Delicate electrometers, candle flames and other means of detection were tried, but from no point inside could any evidence of electrical charge be obtained. "The electrification without produced no consequent effects within".

#### Procedure in Scientific Societies

ON January 16, 1836, *The Times* published a letter from "Observer" which said: "It will not, I hope, be considered as improper to respectfully to call the attention of presidents and secretaries to an evil of considerable magnitude, which has crept into the public proceedings of some of our scientific bodies of late years—I mean the very low tone in which announcements are often made from the chair, and papers read by the secretaries. . . . One would be tempted to believe, indeed, that an idea of dignity is sometimes connected with inaudibility. . . . Let, however, a president or secretary only consider himself as addressing the distant part of the persons present and the evil will be remedied. . . ."

## Societies and Academies

### EDINBURGH

Royal Society, December 2. J. WEIR and D. LEITCH: Zonal distribution of the non-marine lamellibranchs in the coal measures of Scotland. All zones from *ovalis* to *tenuis* are represented in the Scottish Coal Measures, although they cannot all be delimited. The Productive Coal Measures fall within the *ovalis*, *modiolaris* and lower *similis-pulchra* zones, and are therefore homotaxially equivalent to the lower part of the Middle Coal Measures of Lancashire. In the Central Coalfield the boundary between *ovalis* and *modiolaris* zones is taken at the Kiltongue Musselband, and between *modiolaris* and *similis-pulchra* zones at the Musselband Coal. Correlations between Central, Douglas and Ayrshire coalfields are deduced. S. CHAPMAN: The lunar atmospheric tide at Glasgow. Reasons are given for believing that the lunar hourly inequalities of barometric pressure at Glasgow recently determined by Robb and Tannahill are substantially not of lunar origin at all (see NATURE, Nov. 16, p. 801). An earlier determination of the lunar atmospheric tide at Glasgow made in 1926 by Robb is now published with his permission, and appears to be a true lunar effect. It indicates that at Glasgow the lunar atmospheric tide is abnormally small for the latitude; the phase seems normal, and corresponds to a lag of high tide in the atmosphere of about one hour after lunar transit. END CHARLES: The effect of present trends in fertility and mortality upon the future population of Scotland and upon its age composition. Excluding the effects of migration, estimates of the population of Scotland during the next hundred years have been made on two assumptions, (a) that fertility and mortality remain at their present level, and (b) that they continue to decline at the rate shown in the past decade. According to (a), the population will begin to decline slowly about 1970, being 94 per cent of its present size in a hundred years. According to (b) the population will begin to decline about 1950 and thereafter will diminish rapidly, being 19 per cent of its present size in a hundred years. The effects of past declining fertility and of present low fertility will be seen in a continually decreasing proportion of children and increasing proportion of persons aged sixty years and more. The excess of females due to war losses will be replaced by an excess of males in 1960 by both estimates. In fifty years the increasing proportion of the older age groups will result in a higher crude death rate, between 18 and 21 per thousand. A. C. AIRKEN and H. T. GONIN: Fourfold sampling with and without replacement. The correlation is examined of characters in a sample drawn at random from a limited population, the individuals of which are classed in four categories, as possessing two characters or their alternatives. In the cases both of replacement and of non-replacement of sampled individuals, the probability is found to be expressible as a terminating series in orthogonal polynomials. These are briefly studied, and applications are made to problems of regression and moments.

### PARIS

Academy of Sciences, December 9 (*C.R.*, 201, 1157-1232). The president announced the deaths of Charles Richet and Henri Jumelle. MARIN MOLLIARD: The effect of an enrichment of the atmosphere in