

### Carnegie Trust for the Universities of Scotland

THE recently published report for 1937-38 of the Carnegie Trust for the Universities of Scotland includes detailed reviews by Sir William Bragg and other eminent authorities of the operation during the quinquennium 1933-38 of the Trust's scheme for the endowment of post-graduate study and research. The scheme involved last year the expenditure of £19,000—about 15 per cent of the Trust's total disbursements, of which £51,000 went in grants to universities and colleges and £54,000 in assisting needy students to pay their class fees. The reports indicate that its results amply justified the research scheme, being fully up to the standard set in previous years. A noteworthy feature of its operation is the large number of the recipients of awards of fellowships and scholarships who are appointed to responsible positions on the staffs of universities and other institutions for teaching and research. This, remarks Prof. J. T. Wilson, emeritus professor of the University of Cambridge, in his report on the biological and medical section of the scheme, is in keeping with one of its outstanding functions: the establishment and reinforcement of a trained corps of scientific investigators constantly available for recruitment to the service of the community in its higher schools of scientific learning. As regards expenditure by the Trust on payment of class fees, a number of the beneficiaries afterwards refund the amounts thus paid on their behalf. Such voluntary refunds fluctuate between 2½ and 5 per cent of the total amounts advanced by the Trust.

### Chemical Society: Anniversary Meetings

THE anniversary meetings of the Chemical Society were held in London on March 29-31. On March 29, the Rutherford Memorial Lecture entitled "Lord Rutherford: His Life and Influence on Chemistry" was given by Sir Henry Tizard, at the Royal Institution (see p. 651). In the evening, fellows of the Society and their guests, numbering in all about four hundred, were entertained by the chairman and directors of Imperial Chemical Industries, Ltd., at Imperial Chemical House. On March 30, there were visits in the morning to Bedford College for Women and to the Wellcome Research Institution, where conducted parties were taken over the Museum of Medical Science and the Historical Medical Museum and the Chemical and Physiological Research Laboratories. In the afternoon, the business part of the annual general meeting was held at Burlington House, and the presentation of the Longstaff Medal for 1939 was made to Prof. I. M. Heilbron and of the Harrison Memorial Prize for 1938 to Mr. Alexander King. Prof. F. G. Donnan then delivered his presidential address entitled "The Role of Osmotic Pressure in the Development of Chemical and Biochemical Science". The anniversary dinner was held the same evening at Grosvenor House, the number present being 270. Prof. F. G. Donnan occupied the chair, the principal guest of the evening being Viscount Samuel. On March 31, there were visits to the British Drug Houses, Ltd., and also to

the Central Laboratories of the Shell Marketing Co., Ltd., at Fulham. In the afternoon, there were visits to the Research and Development Department of the Distillers Company at Great Burgh, Epsom, and to the Laboratories of the Research Association of British Paint, Colour and Varnish Manufacturers at Teddington. The following have been elected officers of the Society: *President*, Sir Robert Robinson; *Treasurer*, F. P. Dunn; *Secretary*, Prof. G. M. Bennett.

### Population and Fertility

A PAMPHLET of 101 pages, entitled "Population and Fertility", has been issued by the Population Investigation Committee, 69 Eccleston Square, London, S.W.1 (price 3s.). It has been prepared for the Committee by Mr. D. V. Glass and Dr. C. P. Blacker. The Population Investigation Committee was formed to examine the trends of population in Great Britain and the Dominions and to investigate the causes of these trends with special reference to the fall in the birth-rate. Many causes for this decline have been suggested; but multiple causes are at work affecting different occupations and different parts of the country in many complicated ways, so that effective counter-measures will not be easy to find. The problem is to find out how and why fertility has declined. For analysis of the first part, statistics of birth-rates and fertility-rates are given for England and Wales, the Dominions, U.S.A., Sweden, Germany, France, Italy, Ukraine and Japan. The table of net reproduction-rates for thirteen countries shows that only five of these populations are now replacing themselves. Interesting details are given regarding the history of the census in Great Britain and the recent Population (Statistics) Bill. It is pointed out that the latter is inadequate for a full fertility census, and certain additional questions are suggested for the next census. In the last two chapters, the limitations of vital registration statistics in analysing the psychological motives of childlessness are discussed and possible counter-measures are considered.

### Royal Aeronautical Society

THE Royal Aeronautical Society has now moved into new headquarters at 4 Hamilton Place, London, W.1 This is the first time during its seventy-three years of existence that the Society has had its own building. The Society's new home is a four-story building which will allow for expanding activities for some years to come. The library will be one of the finest and best equipped aeronautical libraries in the world. There will be, in addition, a reading and other rooms for members and special committee rooms for the use of the many aeronautical committees which are now sitting. It is hoped to make the building the centre of aeronautical engineering and scientific activity in Great Britain. Dr. A. H. R. Fedden, president of the Society, announced at the recent annual general meeting that to meet the increasing work of the Society and the upkeep of its new premises a fund of £100,000 is being aimed at, to which more

than £60,000 has already been promised. In July 1940 the Society will hold an International Aeronautical Conference at Stratford-on-Avon. The active support of the Air Ministry and the Society of British Aircraft Constructors in Great Britain and of the leading authorities in the United States, France, Germany and Italy has been promised.

#### New Air Speed Record

It is reported that Herr Dieterle, flying a German Heinkel aeroplane fitted with a Mercedes-Benz engine, has set up a new speed record of 463.8 miles an hour over a three kilometre course. This does not rank as an official record until it has been examined and homologated by the Fédération Aéronautique Internationale; but there is no reason to doubt that this formal recognition will be given in due course. This has beaten three world records at the same time: the 3 km. of 380 m.p.h. held by Wurster (Germany), the 100 km. of 394 m.p.h. held by Udet (Germany), and the absolute speed record of 440.7 m.p.h. held by Agello (Italy). No certain details of the aircraft are known, but it was probably developed from the Heinkel He.112.U used by Udet for the 100 km. record in June 1938. Statements that have appeared in non-technical reports that the machine was a single seater fighter fitted with an engine of 1,175 horse-power are obviously misleading. Any machine of this class must have been very thoroughly 'cleaned up' in design for such speeds, and even with such alterations the engine must have been both speeded and boosted up to a power of well over 2,000 b.h.p.

#### Deaf-Aids in Theatres

An interesting development in deaf-aids has been recently demonstrated in Wyndham's Theatre, London, and is being installed in a number of cinemas. Hitherto a deaf person in a cinema could frequently be supplied with a listening telephone, operated by an amplifier following a microphone located near the loud speakers behind the screen, or from the actual sound-film amplifying equipment itself, but the user was necessarily tied to his seat by the connecting wire. In the 'Telesonic system', made practicable by Messrs. Multitone Electric, an efficient type of deaf-aid is operated by a pick-up coil, in which are induced currents from an energized cable hung round the auditorium or placed under the carpet. In a theatre, a microphone in the footlights operates a specially corrected amplifier of about ten watts capacity, the output of which is fed into the magnetizing cable by a specially designed transformer. On demonstration, the device worked well and adequate audition was obtained, with freedom to move over the whole area of the seats, or even some distance outside this area. The fundamental idea of direct speech or music induction without a radio carrier is not, of course, new, but it is understood that the main feature of the invention is the disposition of magnetizing coils such that cross-talk between adjacent theatres or cinemas using the system is obviated. The normal

deaf-aids manufactured by the Multitone Company are now arranged to operate with the 'Telesonic system' in theatres.

#### Visual Aids in American Schools

A RECENT survey of the employment of visual aids in schools representing two thirds of the total enrolment in public elementary and secondary schools in the United States indicated that the use of (1) pictorial materials, (2) objects, specimens and models, and (3) visual aids which require mechanical equipment, was habitual in the instruction of (1) 61 per cent, (2) 52 per cent and (3) 27 per cent, respectively, of the pupils included in the survey, and that about 10,000 projectors were owned by the schools. A large percentage of the school systems not reporting were in rural districts, and the data concern, therefore, conditions in urban communities primarily. An interpretative study of these data has been published by the Office of Education ("School Use of Visual Aids" Supt. of Documents, Washington, D.C. 10 cents). There is very widespread interest in the subject (which formed the theme of thirty-seven research studies in 1936-37), and there is general agreement that the motion-picture has great potential educational value and but little apprehension that it may prove, as forecast by Georges Duhamel (in "Défense des Lettres") and others, to be one of applied science's Greek gifts to culture. Among the further developments recommended in the light of this survey are the production of high-grade educational films, a nation-wide distribution system, training courses in the technique of teaching with motion pictures and other visual aids and improvement of the 16 mm. projector so as to make it easier for amateurs to operate.

#### Antiquity

AN editorial note in *Antiquity* of March, 1939, directs attention to an important development in the study of European prehistoric chronology. E. H. de Geer, it is stated, has succeeded in equating the growth-rings of trees from the ancient mound of Rakenhangen in the Romerike district of Norway with those of a giant Californian sequoia on one hand, and with clay varves from Angermanland in North Sweden on the other. The tree trunks examined were preserved when a shaft was sunk to the base of the mound in 1868. The investigation points to A.D. 931 as the date of the cutting of the trees and the erection of the mound. As the editor of *Antiquity* points out, the acceptance of the full implication of this important discovery must await further critical examination; while the application of dendrology to European chronology is not without its peculiar difficulties. The March issue of this enterprising periodical well maintains its high standard of interest, in part owing to the inclusion of Prof. V. Gordon Childe's lecture on the relations of India to the West before the time of Darius, which originally was delivered before the Warburg Institute on October 10, 1938, and Dr. R. E. Mortimer Wheeler's report on his excavations in Brittany, to which