example, detectors of dangerous gases in air, X-ray equipment, colorimeters, valves and photoelectric cells. Others introduce new methods into old fields, for example, an engraving machine which seems likely to displace etching, a gas tube which leaks an electrostatic charge away if the potential exceeds a fixed value, a polish measurer working photoelectrically, and an optical tube of small diameter for examining the inside surfaces of long tubes. For this device the name "introscope" has been invented. Other new names are "grapher" for recorder, "hygrograph", "opacimeter", "stormograph" and "stormoguide" for forms of barograph, any of which may at some future date find places in a new Oxford dictionary.

The late Mr. W. W. Ouless, R.A.

THE death of the distinguished portrait painter, Mr. W. W. Ouless, on December 25, at the age of eighty-five years, recalls his skill in the portrayal, in much faithfulness, of many well-known men of science. An oil painting of Charles Darwin, a treasured possession of the family, was executed in 1875, and a replica by the artist himself hangs in Christ's College, Cambridge Considered by Darwin's children to be an outstanding presentment, it was etched very successfully by M. Rajon. It is recorded in the "Life and Letters" that the portrait was finished at the end of March 1875; that Darwin felt the sittings a great fatigue in spite of Mr. Ouless's considerate desire to spare him so far as was possible. In a letter to Sir Joseph Hooker, Darwin remarks, "I look a very venerable, acute, melancholy old boy; whether I really look so I do not know." Another portrait by Ouless was of Sir William Bowman, F.R.S. (1816–1892), eminent in ophthalmic surgery. Bowman's admirers at home and abroad specially engaged the services of Ouless for this work, whilst at the same time they arranged for a reprint of all his scientific treatises, with Prof. Burdon Sanderson and Mr. Hulke as supervisors of the issue. In 1928 Ouless painted a portrait of Sir Arthur Keith.

Asiatic Society of Bengal

ON January 15, 1934, the Asiatic Society of Bengal, which was founded under the name of the "Asiatick Society", on January 15, 1784, by Sir William Jones, will reach the age of a hundred and fifty years. The Society was founded to inquire into the history, civil and natural, the antiquities, laws, arts, sciences and literature of Asia, and during its long existence its usefulness has spread far and wide, and it has to its credit a wonderful record of achievements. The president and council of the Society have decided to celebrate, on January 15, the 150th anniversary of this foundation. The anniversary programme will consist of a conversazione in the Indian Museum, and a banquet in the hall of the Society, followed by a special anniversary meeting to receive addresses from learned societies and to elect a number of honorary anniversary members of the Society. In connexion with the centenary celebration in 1884, a volume depicting the progress of letters and science during the preceding hundred years was published; and it has been decided to undertake the preparation of a special volume on similar lines covering the period of the last fifty years.

The Electronic Organ at Poste Parisien

AMONG the many applications of the thermionic valve is the invention of a new type of organ, which makes use of valve-produced electrical oscillations converted into sound through the agency of a loud-speaker. Many types of such 'electronic' organs are being developed in different parts of the world and some of these are already being used for broadcasting purposes. An illustrated description of this type of organ installed at the Poste Parisien broadcasting station is given in the *Wireless World* of December 22. This organ has three manuals, each of four and a half octaves, together with two and a half octaves of pedals, making a total of about two hundred notes. For each of these notes a three-electrode valve is provided with its oscillatory circuit, comprising a fixed condenser and an iron-cored inductance, tuning being effected by a screw-adjustment of the iron core. Another two hundred valves are fitted in the amplifiers which feed thirteen loud-speakers. A number of auxiliary instruments, mostly pneumatically operated, are fitted to produce the various noises and 'effects' required in connexion with broadcasting programmes. A notable feature of the new instrument is the 'swell' action, which is controlled by a pedal-operated rheostat applied to the whole of the organ, and not only to one or two manuals as in the case of the normal organ. The oscillations produced by the first valves are very rich in harmonics and by switching in various filter circuits the quality of the tones emitted can be varied to a considerable extent. The whole instrument is very compact and, for broadcasting purposes, the loud-speakers are not required in circuit since it is obviously unnecessary to convert the electrical into acoustical energy in order to control a wireless transmitting station.

Stream-line Form in Motor-Cars

EXPERIMENTS carried out on models in a wind tunnel by R. H. Heald, of the U.S. Bureau of Standards, shows that the trend towards stream-line form in the construction of modern cars leads at high speeds to a substantial saving of power and therefore of petrol. The tests show the air resistance of the 1933 car is more than twice that of a completely stream-lined car of the same frontal area. According to a mail report from Science Service, the tests were made on models ranging from one quarter to one fifteenth natural size with wind velocities varying from thirteen to seventy miles per hour. Some of the models were of cars of the past, but two represented cars which may be used in the future. The 1933 model had disk wheels, exposed bumpers, fenders, head-lights and a spare tyre. One of the models of the motor-car of the future had a wind-shield which made an angle of 45° with the horizontal, the chassis was rounded at the top and back and the lines were

smoothly moulded. The other model had the whole upper part rounded, was blunt at the front and tapered at the back. Mr. Heald computes from his results that, at 60 miles per hour, the 1922 Sedan requires 27 h.p. to overcome air resistance ; 26 h.p. is taken by the 1928 Sedan and 18 h.p. for the 1933 model. The two stream-lined models took 8 and 6 h.p. respectively. At 48 miles per hour it was found that the horse-power expended on air resistance was halved and at 76 m.p.h. it was doubled. Mr. Heald concludes that the 1933 motor, shorn of its projecting bumpers, head-lights and spare tyre, and fitted with a rounded top and sloping wind-shield, would consume 10 h.p. less at 60 m.p.h. and 20 h.p. less at 70 m.p.h.

Earthquake Insurance in New Zealand

ACCORDING to a message published in the *Times* of December 21, the Judicial Committee of the Privy Council in New Zealand has decided that, under the Workers' Compensation for Accidents Act, compensation could be claimed for the death or injury of labourers engaged in their occupations during the recent Hawke's Bay earthquake. The insurance companies stated that their liability in the event of a great disaster would be so serious that they could not undertake the risk. The Government accordingly introduced a measure to remove employers' liability in such cases in future. This proposal being opposed, a compromise was reached limiting the total liability of the companies to £50,000 in a single earthquake or in a series of earthquakes lasting for seven days.

Teaching of Biology in South Africa

AN address by Dr. E. P. Phillips on "The Teaching of Biology", read to the South African Biological Society, appears in the Society's Pamphlet No. 6, 1933. Dr. Phillips advocated an introduction to biology in the schools by easy stages, which would give pupils an insight into biology as a concrete whole and not as isolated facts. His scheme, beginning like many others, with the differences between living and non-living, leads gradually and finally to knowledge of elementary human physiology, and includes information on the great generalisations of biology. The discussion which followed showed a widespread feeling that biology is not satisfactorily taught in schools, and Dr. Janse placed his finger upon the weak spot in the present system when he made a plea for better trained teachers in biology.

Lovibond Comparator with B.D.H. Indicators

INCLUDED in the "Catalogue of B.D.H. Fine Chemical Products", recently received from the British Drug Houses, Ltd., London, N.1, is a leaflet describing the Lovibond comparator for use with B.D.H. indicators. The apparatus consists of a metal case, opening like a book, and furnished at the back with an opal glass screen and two partitions to take the test-tubes containing the liquid under examination. The standard colour glasses, nine in number, are fitted into a flat disc which may be rotated in the front half of the case, which contains two holes, in front of the test-tubes. By rotating the disc, a colour glass is brought into view in front of one test-tube, containing the liquid only ; through the other hole the test-tube containing liquid with the correct amount of appropriate indicator added is visible simultaneously. The colour comparison can thus be quickly made. The *p*H value of the colour appears at a third hole in the front of the case. Discs are available for different indicators of *p*H 2·8–9·6 and also for B.D.H. Universal indicator, *p*H 4–11.

Eclipses of the Sun in 1934

THERE will be a total eclipse of the sun on February 13–14, which is invisible at Greenwich. The sun will rise eclipsed over Borneo, and the path of totality runs across the Pacific Ocean without crossing any land except a few very small islands. Oroluk Island, Losap Island and Wake Island lie on the path of totality. No British expedition has been organised to observe the eclipse from any of these small islands. In Borneo the eclipsed sun will, of course, be so low down that no useful spectroscopic observations can be made. The second solar eclipse which will take place in 1934 will be an annular eclipse on August 10, also invisible at Greenwich. The track crosses South Africa from Mossamedes to Inhambane.

Announcements

A CONFERENCE on atomic physics will be held in 1934, under the auspices of the Physical Society. It will be opened by Lord Rutherford, and will probably extend over two days at least, some of the meetings being held in London and some in Cambridge.

WE regret that in referring to "Street Traffic Flow" by Mr. Henry Watson in NATURE of December 30, p. 987, the price quoted was 31*s.* net. Messrs. Chapman and Hall, Ltd., inform us that the price of the book is 21*s.* net.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned :—A junior technical assistant for the Directorate of Ordnance Factories, War Office—The Permanent Under-Secretary of State (C.4), The War Office, London, S.W.1 (Jan. 15). A chief technical assistant to the electricity undertaking of the Metropolitan Borough of Poplar—The Town Clerk, Council Offices, High Street, Poplar, E.14 (Jan. 19). A principal of the Croydon Polytechnic and Evening Institutes—The Education Officer, Education Office, Katharine Street, Croydon (Jan. 31). A specialist serologist in the Union of South Africa—The Secretary, Office of the High Commissioner for the Union of South Africa, Trafalgar Square, London, W.C.2 (Feb. 6). A principal of the Grimsby Technical Evening School—The Secretary, Education Offices, Grimsby. A chemist under the Sudan Government, at Khartoum—The Controller, Sudan Government London Office, Wellington House, Buckingham Gate, London, S.W.1.