

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. Oules, R.A.

THE death of the distinguished portrait painter, Mr. W. W. Oules, 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. Oules'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 Oules 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 Oules 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 Oules 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