

### Archæological Exploration in Persia

MUCH as it may be regretted that the British School of Archæology in Iraq (Gertrude Bell Memorial), in accordance with the decision announced at the end of last season, will not itself be responsible for expeditions of archæological exploration in its special province, pending more satisfactory arrangements under the antiquities laws of the country, the announcement of the grant of £500 from the funds of the School to Sir Aurel Stein towards the cost of excavating mounds in south-western Persia will afford archæologists some measure of consolation for the suspension of activities in northern Iraq. The archæological work which Sir Aurel proposes to carry out with the assistance of this grant is in continuation of certain investigations which he has made during the past two seasons in south-eastern Persia, where a number of early sites were examined. He will cover a field in which it is anticipated that much needed evidence will be obtained bearing on the relations of the early culture of Elam and possibly, it is hoped, the relationship of the Indus valley civilisation to that of western Asia—at the moment the most intriguing of the problems of Middle Eastern prehistory. It is also announced that the British School has made a grant of £100 towards the expenses of the short season of excavation at Ur which is now opening.

### Prehistoric Art in the Libyan Desert

SHOULD preliminary announcements be confirmed by subsequent examination of the evidence, a further link in the relations between the prehistoric art of northern Africa and the Bushman art of South Africa is afforded by discoveries made by Dr. Leo Frobenius in the Libyan Desert. Dr. Frobenius, who has just returned from his eleventh expedition to Africa, reports, according to a Frankfort dispatch in the *Times* of December 28, that he has discovered in the Auwenat massif a centre of supplies for the stone implement factories of various parts of North Africa, with evidence in the form of rock-drawings, stone tools and traces of pottery of two distinct cultural periods, the older coming from Lower Egypt in the north, the later, of a character hitherto unknown, coming from the south. Moving south to the oasis of Selimah in northern Kordofan, Dr. Frobenius discovered a new southern culture with a ceramic industry dating from between 6000 and 4000 B.C. in an area which he regards as having been the valley of a third or 'Yellow' Nile. On the route to this centre, 44 stone implement factories were discovered as well as several hundred rock-drawings, representing men and animals engaged in various activities. It is maintained that these discoveries throw a new light on the relations of the art of North Africa, East Spain and South Africa, while the dating of the 'factories' makes it possible to determine the direction of culture drift.

### Presentation to Sir Herbert Jackson, K.B.E., F.R.S.

THE Council of the British Scientific Instrument Research Association held an informal luncheon at the Connaught Rooms on December 21 in honour

of Sir Herbert Jackson, who occupied the position of Director of Research of the Association from its beginning in 1918 until July 31, 1933. Some thirty members of council and friends, representing all sides of the scientific instrument industry, attended. After the luncheon, Sir Herbert Jackson was presented with a gold minute-repeater watch and a vase of carved white jade, and Lady Jackson received a pair of ivory-backed brushes and a mirror. Mr. Conrad Beck, in proposing the toast of Sir Herbert and Lady Jackson, spoke of the valuable work which Sir Herbert Jackson had done and of the friendly relations which had existed between Sir Herbert and all the members of the Association. Sir Frank Smith and Mr. H. T. Tizard both referred to the wide range of Sir Herbert's activities and to the wealth of helpful suggestion which he could invariably bring forward in discussions on non-technical as well as on technical matters. In the remarks made by Mr. R. S. Whipple, Mr. F. Twyman and Mr. J. Hasselkus, special tribute was paid to Sir Herbert's power of inspiring self-confidence in those with whom he came into contact, and to the encouragement he had always given to instrument makers not to be satisfied with an instrument that was good enough, but to produce an instrument which was really outstanding. High tribute was paid also by all the speakers, to Lady Jackson, who shares the affection in which Sir Herbert himself is held. Sir Herbert Jackson, after thanking the council and members of the Association for their expressions of appreciation and for their gifts, referred to the assistance and co-operation which he had received from the industry itself, and to the spirit of enterprise which animated the industry: without these it would have been possible to do but little.

### The Physical Society's Exhibition

THE catalogue of the Annual Exhibition of Scientific Instruments and Apparatus to be held at the Imperial College by the Physical Society on January 9-11 is an octavo volume of 184 pages, the trade section occupying 148, the research and experimental section 26, and the index to the trade section 5 pages. Reference to the exhibits, the stands and the firms exhibiting has been greatly facilitated by the number of the stand and the name of the firm being printed at the head of each page. A considerable number of illustrations are provided, but there is still a number of firms satisfied with showing little more than the outside appearance of a piece of apparatus, for example, a box on the top of which are a handle for carrying, a small window and a few terminals, instead of a diagram of its mechanism or a view of its interior. As a contrast, the descriptions in the research and experimental section are full of the information which a potential user of an instrument or a method requires in order to determine whether it will suit his purpose. In the trade section, instruments which have not been exhibited previously are marked with an asterisk and on the stalls with a red star. Many of them are connected with branches of physics which have in recent years become important in industry, for



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 "Asiatic 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