

Father Cortie took a large share in the work of the Stonyhurst College Observatory during the directorship of Father Sidgreaves (1890-1919), and he became director in 1919 on the death of Father Sidgreaves. His astronomical work was in large measure connected with the relation between the phenomena of sunspots and terrestrial magnetism, and he contributed many papers to the Royal Astronomical Society and to the *Astrophysical Journal*; among them were a number relating to stellar spectra, a subject to which Father Sidgreaves had devoted much attention.

Father Cortie, carrying on a tradition started by Father Perry, took part in several expeditions to study the phenomena presented in total eclipses of the sun. He travelled to Vinaroz (Spain) in 1905, to Vavau, Tonga Islands, in 1911, and to Hernösand (Sweden) in 1914, to make observations of eclipses. He had but poor luck in the earlier expeditions, but in Sweden he observed the eclipse "in absolutely perfect weather conditions" and obtained not only valuable spectroscopic observations but also beautiful photographs of the corona, one of which is well reproduced in the Report of the Stonyhurst College Observatory for 1914.

In 1891 Father Cortie was elected a fellow of the Royal Astronomical Society, and for many years he served on the council of the Society. He was an active member of the British Astronomical Association, which he joined in 1894; for eleven years (1900-1910) he was director of the Solar Section of the Association,

and in that capacity he was responsible for many reports on solar work. He was president of the Manchester Astronomical Society since 1911. In 1922 he was made a member of the International Astronomical Union's Committee on the Solar Atmosphere and attended the meeting of the Union at Rome in that year. After the meeting he received an honorary degree at Padua on the occasion of the seventh centenary of the foundation of the University. Quite recently he had been elected president of the Manchester Literary and Philosophical Society.

WE regret to announce the following deaths:

Dr. A. G. Butler, late senior assistant keeper of the Natural History Museum and distinguished as an entomologist and ornithologist, on May 28, aged eighty years.

Dr. John Mason Clarke, State geologist and palæontologist and director of the State Museum and Science Division of the Education Department, New York, a fellow of the National Academy of Sciences, Washington, and foreign member of the Geological Society of London, sixty-eight years of age.

Prof. Giovanni Battista Grassi, Senatore del Regno, distinguished for his work on the transmission of malaria, on May 4, aged seventy-one years.

Prof. C. K. Wead, an examiner in the United States Patent Office and formerly professor of physics in the University of Michigan, who was known for his work on physical and musical acoustics, aged seventy-six years.

Current Topics and Events.

THE Rowett Research Institute, Aberdeen, for the investigation of problems of animal nutrition, has been fortunate in receiving funds from private sources. Two years ago Mr. W. A. Reid, of Aberdeen, endowed the Library and Statistical Department. The Institute has now received a gift of 10,000*l.* from Mr. Duthie Webster to support the work of an experimental stock farm. Mr. Webster, who is an Aberdeenshire farmer, is the nephew of the late Mr. William Duthie, of Collynie, who earned world-wide fame as a breeder of beef cattle. The farm is being established in accordance with recommendations made by Prof. T. B. Wood, Director of the Animal Nutrition Institute at Cambridge, and Dr. J. B. Orr, Director of the Rowett Research Institute, in a joint report which, at the request of the Agricultural Council, was drawn up and submitted to the Ministry of Agriculture and the Board of Agriculture for Scotland. One of the sections of that report emphasised the desirability of having in Great Britain one or more experimental stock farms where the results of research work, which appeared of probable economic value, could be tested on a large scale, under practical conditions. In the report it was recommended that such a farm should be established in connexion with the Rowett Research Institute.

THE scheme, which is now being carried out at the Rowett Research Institute, makes provision for departments dealing with milk cows, beef cattle, pigs, sheep and poultry, and it is intended that each department will have as its head a worker who, after having been trained in research in nutrition, will devote

himself entirely to the study of practical problems connected with the nutrition of the kind of farm animals in his department. The establishment of this experimental stock farm in connexion with the Rowett Research Institute is an important development in the scheme of research in agriculture, promoted by the Development Commission some years ago. It will enable the results of work, the full significance of which can only be understood in scientific circles, to be presented in a form intelligible to those engaged in the industry of animal husbandry. The results of large scale-feeding experiments carried out under practical conditions, should be of interest not only to stock breeders but also to those engaged in research, whose experimental work has to be confined of necessity to tests with small laboratory animals.

THE recent Conference on the Standardisation of Plate Testing Methods, inaugurated by the Royal Photographic Society, appointed an influential committee to consider its work in detail and to draw up a report for submission to the coming Paris International Congress on Photography. The report of the Committee is published in full in the Society's Journal for June. The Committee recommends a standard illumination of 4-metre candles obtained by the use of a 15-20 c.p. standardised metal filament lamp used at a colour temperature of 2360° K., this having the same colour as the Eastman Kodak acetylene flame. For exposure it recommends a non-intermittent exposure mechanism and a time scale, intensity remaining constant. When uniformity in the developer is desirable, it recommends the pyro-soda formula of Hurter and

Driffled, but of three-quarters the strength prescribed by them. The Committee recommends development in a dish, and the use of a brush to produce an efficient turbulence over the whole surface of the plate. For measuring the densities it advises the use of a definite instrument and a definite opal glass in contact with the density being measured. The pieces of opal glass should be standardised at some such institution as the National Physical Laboratory. For the interpretation and statement of results a set of curves plotted in the usual way for at least three periods of development is recommended. The effect of fog needs further investigation. The under-exposure portion of the curve should be given separately, and an illumination of $\frac{1}{10}$ m.c. is advised for work in this region, and it may be obtained from the standard light source by reflection from a magnesium oxide screen. It is hoped that these conclusions may form a basis for the standardisation of plate-testing methods as discussed at the Paris Congress.

PROF. F. A. F. C. WENT, professor of general botany in the University of Utrecht, lectured on "Modern Conceptions of Light Stimuli in Plants" at the Imperial College of Science and Technology, South Kensington, on May 25. In the course of his address, Prof. Went stated that investigations which have been carried out during the last twenty years in Holland and elsewhere had cleared away many of the old conceptions concerning phototropic curvatures of plants. The work of Blaauw, Arisz, and Koningsberger were worthy of mention in this regard. It was discovered by Blaauw that a certain quantity of light—expressed in metre-candle-seconds—is necessary to obtain a curvature in oat seedlings or the sporangiophores of *Phycomyces*. Arisz made exact measurements of light-quantities and brought evidence against the view commonly held that perception and reaction are distinct processes. Moreover, he showed that when a plant is illuminated from two different sources, the curvature resulting is determined by the addition or subtraction of the two separate reactions. From this it seems probable that the so-called "tonus" is a question of the summation of reactions, not of perception. Blaauw's well-known explanation of growth curvatures as due to the light-growth-reaction has been confirmed by Koningsberger by means of a very accurate recording auxanometer. In future it will be necessary to work with light of which the energy value is much more accurately measured than in metre-candle-seconds. It is probable that in phototropic responses some substance of the nature of a hormone, such as has been demonstrated in relation to geotropic curvature, will later be detected. It is doubtful whether the use of the word "stimulus" is now of much value in phototropism.

A NEW development at the Royal Botanic Gardens, Kew, is a house for the display of plants of botanical and educational interest. The special display at present consists of Calceolarias. *C. cana* is a small hoary-leaved species from Chile with violet-scented flowers, and the hybrids which have resulted from it show the hoary leaves of *C. cana*, while the flowers

show a wide range of colours from white through yellow to a deep purple red. The South American Calceolarias have the characteristic pouched flowers, but there are four exceptional species, with open helmet-shaped flowers, two of which occur in South America, *C. violacea* and *C. punctata*, and two in New Zealand, *C. Sinclairii* and *C. repens*. An exhibit of Petunias has also been arranged showing the development of the garden Petunia from the two wild species from the Argentine and Uruguay, namely *P. integrifolia* (syn. *P. violacea*) and *P. nyctaginiflora*. *P. integrifolia* is better known as *P. violacea*, and was received as such by the Glasgow Botanic Gardens during 1831, seed being sent by John Tweedie, then resident at Buenos Aires, and a hybrid with *P. nyctaginiflora* was raised during 1834. It was lost to cultivation for many years until 1916, when Kew reintroduced it, after several failures, through the kind offices of the late Mr. C. E. R. Rowland, then Vice-Consul at Monte Video. An interesting new South African Composite, *Venidium Wyleyi*, is also exhibited, which has been raised at Kew from seed received from Miss Wilman of Kimberley, a well-known South African botanist. The exhibits will be changed from time to time throughout the year.

SHOWERS of fish have from time to time been reported, and the following account of one that occurred in the Hardoi district of Oudh, as given in a letter from the Deputy Commissioner of that district, has been forwarded to us by Mr. C. A. Silberrad: "The local calamity was of a new type. It happened in an area 200 yards wide and three miles long in the northern part of this district. One evening in April 1924 a whirlwind rose in a small area. It advanced to the east, and as it advanced it increased in velocity and force. All the trees—big huge trees—were uprooted and carried long distances, not dragging on the ground but flying overhead. Fish in a 'tank' [*i.e.* reservoir or large pond] which came in the way were blown out and two villages were destroyed. About 45 men were killed or injured, and 150 cattle destroyed." A similar occurrence is recorded in the April-June issue of the *Australian Museum Magazine*, where it is stated that the Director of the Australian Museum, Sydney, recently received a bottle containing three small fish, which, according to the accompanying letter from Mr. F. Richards, of Gulargambone, New South Wales, "were found in the gutters and on the streets here, with hundreds of others after recent heavy rain." Examination of the fish showed they were small freshwater gudgeons (*Carassiops klunzingeri*), which are very common in streams and water-holes in western New South Wales and Southern Queensland.

AN interesting illustrated account by T. W. Jones of the life and work of Dr. Thomas Beddoes appears in April issue of *Science Progress*. Beddoes' greatest discovery was Humphry Davy, who was the first medical superintendent of his "Medical Pneumatic Institution" at Clifton. Beddoes was born at Shifnal in Shropshire in 1760, and at the time of

graduation in classics at the age of nineteen, he had acquired considerable manipulative skill in pneumatic chemistry and was conversant with the work of Priestley, Cavendish, Lavoisier, and Scheele. He studied medicine and anatomy in London and, later, in Edinburgh. After a continental tour, in which he met Guyton de Morveau and Lavoisier, he accepted the post of reader in chemistry at Oxford. Beddoes became very popular here and spent the happiest years of his life; rash political views, however, caused him to resign in 1792. He had published translations of Bergman's "Elective Attractions" and Scheele's "Chemical Essays," amongst many other things, and also a digest of the work of Mayow. Beddoes now set up a practice, still continuing, however, his private research. His published work of this period is voluminous; most of it is medical in nature, but there is a "classification of chemical substances according to their principles," which he proposed. Much of Davy's earlier work was inspired by Beddoes, and was carried out under the latter's direction, e.g. the work on nitrous oxide which brought about Davy's promotion to the Royal Institution.

METEOROLOGICAL reports by wireless telegraphy for Great Britain and the countries of Europe and North Africa are dealt with by the Meteorological Office, Air Ministry, in a new edition of official publication, M.O. 252. The third edition of the work now issued consists of 134 pages, which, compared with 84 pages in the first edition issued in 1922, illustrates the immense development of wireless now in progress. A frontispiece shows the area covered by wireless weather messages employed in the Daily Weather Service of the British Isles, from which messages are regularly received by the Meteorological Office of the Air Ministry. The area embraces nearly the whole of the northern hemisphere. To obtain observations from the entire network of observing stations, most or all of the national issues must be intercepted, but the whole area may be approximately covered by utilising only the international collective messages issued by Great Britain, France, Germany, and Russia. Most issues can be received in the British Isles by the use of quite modest receiving apparatus. Details of the meteorological messages transmitted by each country are given on a uniform plan. The reports and times of the messages are made perfectly clear. The international codes are given of reports from land stations, reports from ships at sea, abbreviated reports giving a synopsis of the meteorological situation over the continent, with much detailed information of general application for weather study. Details of the particulars of the messages from different countries are given up-to-date according to information available on February 14 of the current year, and emending notices will be issued as alterations are required. Such notices will be issued free until a new edition is ready, on application to the Director of the Meteorological Office. The work is published by H.M. Stationery Office, price 3s. 6d. net.

IN order to study the possibilities of routes through central Africa, particularly between French Equatorial Africa and the East coast, Citroën Cars Limited

has sent a large motor expedition across the continent. From Algeria the expedition crossed the Sahara to the Niger river, and then by Lake Chad to Banghi on the Ubanghi, a tributary of the Congo, which form the southern frontier of French Equatorial Africa. After a deviation to the little-known north-eastern part of the Ubanghi-Shari territory, a return was made south to Stanleyville on the Congo. From there the route was north-east through the Haut-Uele district, and eventually to Kasenyi on Lake Albert, which was crossed to Butiabwa. The route then lay south-east to Entebbe, across Lake Victoria and to Tabora. At Kampala one party branched off for Mombasa, and at Tabora another party turned west to cross Lake Tanganyika, and ascended the Lualaba valley through the Khatanga region and Rhodesia to Cape Town. The main expedition from Tabora was to proceed by Lake Nyassa and Blantyre to Beira. All the parties were to reunite at Mayunga on the west coast of Madagascar and cross the island by Antananarivo to Tamatave. Thus the whole of French Africa will have been traversed by motor car.

At the annual general meeting of the Institute of Physics, held on May 25, Sir William Bragg was elected president in succession to Sir Charles Parsons, whose term of office expires on September 30. Major C. E. S. Phillips was elected to succeed Sir Robert Hadfield as treasurer. The annual report gives the total membership as 515, which includes 293 fellows and 135 associates. There is stated to be unlimited scope for further applications of physics in the arts, industries, and public services, and therefore for the increased employment of highly-qualified physicists, and during the past year there has been a fair demand for young honours graduates in physics with two or three years' research experience. Seven lectures have so far been given in the series on "Physics in Industry," and they have been published in three volumes by the Oxford University Press. Much of the report is devoted to the *Journal of Scientific Instruments*, the second volume of which is now appearing. Editorial control has been brought into closer touch with the scientific instrument industry, and steps have been taken to procure more descriptions of workshop devices and methods. Action has been taken in conjunction with the Institute of Chemistry in urging upon the Board of Trade the desirability of defining, in the public interest, the qualifications that should be required of Gas Examiners appointed by local authorities under the provisions of the Gas Regulation Act, 1920. In this connexion a deputation from the two Institutes waited upon the Board of Trade. In reply to the deputation it was stated that the changes in the method of appointment of Gas Examiners suggested by the deputation indicated the necessity for further statutory powers.

THE Ladies' Conversazione of the Royal Society will be held in the Society's rooms on the evening of Wednesday, July 22.

THE summer meeting of the Newcomen Society for the Study of the History of Engineering and

Technology is to be held on June 17-20 at Gloucester. The meeting includes visits to works and places of antiquarian interest in the neighbourhood. Particulars can be obtained from the honorary secretary of the Society, Mr. H. W. Dickenson, Science Museum, South Kensington, London, S.W.7.

THE Science Museum at South Kensington, being too crowded on public holidays for the ordinary lectures to be given in the galleries, an experiment was made on Whit-Monday by Engineer-Capt. E. C. Smith, the official guide lecturer, giving short lectures on ships, locomotives, and aeroplanes in one of the new demonstration rooms. The lectures were illustrated by slides, models, and sketches, and drew large audiences. The experiment may be regarded as entirely successful, and we hope these holiday lectures will become a permanent feature of the work of the Museum.

WE learn from *Science* that the Barnard Medal for Meritorious Service to Science, awarded by the trustees of Columbia University on the nomination of the National Academy of Sciences, has been given to Dr. Niels Bohr, professor of physics at the University of Copenhagen, in recognition of his researches on the structure of atoms. Previous recipients of the Barnard Medal are: Lord Rayleigh and Sir William Ramsay (1895); Prof. W. K. von Röntgen (1900); Prof. Henri Becquerel (1905); Sir Ernest Rutherford (1910); Sir William Bragg and Prof. W. L. Bragg (1915); Prof. Albert Einstein (1920).

It is a hundred years since John Phillips, afterwards professor of geology in King's College, London, in the University of Dublin, and in the University of Oxford, was appointed the first keeper of the Museum of the Yorkshire Philosophical Society. In the recently issued annual report of the council of that Society, Dr. W. E. Collinge, the latest successor of Phillips, takes occasion to give an interesting account, illustrated by a good portrait, of the great geologist of Yorkshire. He suggests that a John Phillips Geological Department would form a fitting memorial. The council, however, seems to be concentrating on an extension of the Museum to accommodate the Roman antiquities.

AFTER the death of Dr. Peringuey in February 1924, and pending the appointment of the new director, Mr. E. Leonard Gill, who assumed office on January 1 of this year, the work of the South African Museum was under the supervision of Mr. K. H. Barnard, who is responsible for last year's report. The much-needed whale shed was completed during the year, and the whale skeletons re-erected therein, proving a great attraction to the public. Several short talks on matters connected with the Museum have been broadcast. The excellent custom of employing members of the staff on collecting expeditions and surveys was continued, though somewhat interfered with by the administrative changes. The chief acquisitions by this means were in plants, insects, and arachnids.

AN interesting paper on the early Bristol glasshouses appears in the March issue of the Journal of the Society of Glass Technology. It contains historical details of the fortunes of many glass-making firms, and is based mainly on contemporary newspaper accounts. The earliest record of glass-making in Bristol occurs about 1651, when Edward Dagney (or Dagnia), an Italian, had a glasshouse, of which the master was John Williams. The trade rapidly grew; in 1698 there were six glasshouses for bottles and four for flint glass; in 1761 there were fifteen, and in 1792 "about twelve" (probably concerns or firms). The Bristol industry began to decline during the early part of the nineteenth century, owing to the remoteness of coalfields and Irish competition.

THE most recent Catalogue (No. 68) of Messrs. Watson and Sons (Electro-Medical), Ltd., consists of Part I., dealing with X-ray generators and radium, and Part II. with X-ray accessories. In about three hundred pages a brief descriptive account is given of radiological apparatus covering the field of radio-diagnosis and radio-therapy. We notice a description of the Gaiffe-Gallot and Pilon constant tension apparatus which Messrs. Watson are authorised to manufacture in Great Britain. One of the most attractive features of the catalogue is the conciseness of descriptive details concerning apparatus, combined with excellent illustrations.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned: A veterinary lecturer at the Midland Agricultural and Dairy College, Sutton Bonington, Loughborough—The Principal. An assistant lecturer in chemistry at King's College for Women (Household and Social Science Department), Campden Hill Road, W.8—The Secretary (June 12). A junior scientific assistant in connexion with Admiralty Research—The Secretary of the Admiralty (C.E. Branch), Whitehall, S.W.1 (June 16). Some appointments in connexion with the physical and chemical survey of the national coal resources—The Secretary, Department of Scientific and Industrial Research, 16 Old Queen Street, S.W.1 (June 17). The professorship of zoology at King's College, London—The Academic Registrar, University of London, South Kensington, S.W.7 (June 19). An assistant entomologist at the Imperial Forestry Institute, Oxford—The Secretary (June 20). A junior lecturer in biological chemistry in the department of physiology of Bedford College for Women—The Secretary (June 20). An assistant in the Herbarium, Royal Botanic Gardens, Kew—The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (June 22). The professorship of electrotechnics in the University of the Witwatersrand—The Secretary, High Commissioner for the Union of South Africa, Trafalgar Square, W.C.2 (June 25). A senior lecturer in chemistry and physics at the Gordon College and the Kitchener School of Medicine, Khartoum—Dr. A. F. Joseph, 51 Kings Avenue, Muswell Hill, N. (July 14). A biology demonstrator at the Royal Grammar School, Worcester—The Headmaster.