

he gave in his presidential address to the Institution a masterly summary of telegraphic and telephonic progress, and a list of unsolved problems which proved very useful in directing the ingenuity of inventors along promising lines.

Sir John Gavey served on many international committees, including some of the earliest on radio-communication. He was one of the first to appreciate the importance of Oliver Heaviside's theoretical investigations, and to use Duddell's oscillograph in everyday experimental work. He was very highly esteemed by every one who came in contact with him, and the work he did at the Post Office has proved of the greatest value.

#### MR. A. H. CURTIS.

By the death of Alfred Harper Curtis on January 10, after a few days' illness, the Imperial Mineral Resources Bureau loses a very able and highly-esteemed member of its staff. Mr. Curtis was the second surviving son of the late Alfred Curtis, Town Clerk of Neath, Glamorgan-shire, and was born on July 12, 1863. Having chosen the profession of engineering, he early gave a practical bent to his studies. As a youth he spent three years with an engineering firm in the Swansea district, and during that time acquired a good knowledge of mining and metallurgical processes. He then proceeded to

Owens College, Manchester, where he studied civil engineering and geology, after which he took up the study of mining, mine surveying, and other subjects at the Royal School of Mines, London, and graduated as B.A. at the University of London.

On leaving the Royal School of Mines, Mr. Curtis travelled widely in many parts of the British Dominions and foreign countries, spending long periods in New Zealand and Japan, investigating and developing mineral deposits. His paper on "Gold Quartz Reduction," read at the Institution of Civil Engineers in 1891-1892, gained for him the Telford premium. While in New Zealand, during the period 1896-1902, he was a member of the council and one of the honorary secretaries of the New Zealand Institute of Mining Engineers, to which, in 1898, he contributed a paper on "The Examination and Valuation of Mines."

During the war Mr. Curtis gave much time to the preparation of reports dealing with the mineral resources of the British Empire and foreign countries. In this capacity he worked for a short time at the Imperial Institute, and compiled the publication on "Manganese Ores" issued by the Institute. He later joined the staff of the Imperial Mineral Resources Bureau, and took a prominent part in the compilation of the statistical and descriptive reports issued by the Bureau.

Mr. Curtis was an untiring and conscientious worker, and his death leaves a gap that it will be difficult to fill.

### Current Topics and Events.

At the meeting of the Chemical Society held on Thursday, January 18, it was announced that the council had nominated Prof. W. P. Wynne to fill the office of president, which will be vacated by Sir James Walker on March 22.

THE gold medal of the Royal Astronomical Society has been awarded by the council to Prof. A. A. Michelson, for his application of the interferometer to astronomical measurements. It will be presented at the annual general meeting to be held on Friday, February 9.

PROF. R. A. SAMPSON, Astronomer Royal for Scotland, has been appointed General Secretary of the Royal Society of Edinburgh for the remainder of the current session, in succession to the late Dr. C. G. Knott.

SIR EDWARD SHARPEY SCHAFFER has accepted an invitation to deliver in London next autumn the first Victor Horsley memorial lecture. The lecture, which will be given triennially, is the outcome of the work of a committee formed in 1920 to commemorate the services of Sir Victor Horsley to science and the British Empire. The subscriptions received by the committee amounted to more than 1000*l*.

At the meeting of the Institution of Electrical Engineers to be held on Thursday, February 1, the president will present to Mr. J. W. Meares, late local honorary secretary of the Institution in India, and Electrical Adviser to the Indian Government, a

salver and cigarette box subscribed for by his friends in India on the occasion of his retirement from the Indian Government Service, and as a token of his valuable services to the profession in India.

THE Air Conference, to be held at the Guild Hall on February 6 and 7, will be opened by the Lord Mayor of London. During the Conference the following papers will be presented and discussed: "The Position of Air Transport To-day," by Maj.-General Sir W. S. Brancker; "A Self-supporting Airship Service," by Commdr. C. D. Burney; "The Progress of Research and Experiment," by Air Vice-Marshal Sir W. G. H. Salmond; "Gliders and their Value to Aeronautical Progress," by Col. A. Ogilvie; "Seaplanes," by Mr. C. R. Fairey.

ON Tuesday next, January 30, at 3 o'clock, Mr. R. D. Oldham will begin a course of two lectures at the Royal Institution on the character and cause of earthquakes; and on Thursday, February 1, Prof. I. M. Heilbron will deliver the first of two lectures on the photosynthesis of plant products. The Friday evening discourse on February 2 will be delivered by Mr. C. F. Cross on fact and phantasy in industrial science, and on February 9, by Sir John Russell, on Rothamsted and agricultural science.

THE Grocers' Company is offering a scholarship (one of three), of the yearly value of 300*l*., with an allowance for necessary expenses, the object being to encourage original research in sanitary science. The appointment will be for one year, but it may be



renewed for a further second or third year. The election will take place in May next. All applications must be sent before April 1 to the Clerk of the Grocers' Company, Grocers' Hall, E.C.2, upon a special form obtainable upon application.

THE Riverbank Laboratories for research in Acoustics, Geneva, Ill., U.S.A., are establishing one or two research fellowships in acoustics, and invite applications for the same from college graduates who have taken advanced courses in physics and mathematics, and shown in their work qualities essential for success in independent investigation. The terms of appointment will be determined by the qualifications of the person or persons appointed. Applications should be sent to Mr. B. Cumming, Secretary, The Riverbank Laboratories, Geneva, Illinois, U.S.A.

THE Minister of Health has appointed the following representatives of the British Waterworks Association and the Institution of Water Engineers as a standing advisory committee to confer with representatives of the Ministry on questions of water supply: Mr. C. S. Musgrave, Mr. A. R. Atkey, Mr. A. B. E. Blackburn, Lieut.-Col. J. R. Davidson, Mr. F. W. Macaulay, and Mr. W. Terrey. The subjects discussed at the committee's first meeting included (1) the steps to be taken for formulating the outlines of a national water policy; (2) the survey of the water resources of England and Wales; and (3) the standardisation and testing of water fittings.

MR. R. I. Pocock is retiring next March from the post of superintendent of the Zoological Gardens, Regent's Park, to which he has been attached since 1904, and the council has appointed Dr. Geoffrey Marr Vevers to succeed him. Dr. Vevers is at present a Beit Memorial Research fellow and an assistant at the London School of Tropical Medicine. He will have as his staff Mr. D. Seth-Smith as curator of mammals and birds, Mr. E. G. Boulenger as curator of the aquarium and of reptiles, and Miss L. E. Cheesman as curator of insects. Dr. R. W. A. Salmond has been appointed honorary radiologist and Prof. G. H. Wooldridge as honorary consulting veterinary surgeon to the society.

PROF. ALFRED LACROIX, president of the Geological Society of France, has been selected as the recipient of the Hayden memorial geological award for 1923 of the Academy of Natural Sciences of Philadelphia. The award, which is made every three years, and consists of a gold medal, was founded in 1888 in memory of Dr. Ferdinand V. Hayden, at one time director of the United States Geological Survey, "as a reward for the best publication, exploration, discovery or research in the sciences of geology and paleontology." Prof. Lacroix is well known among geologists; he was made professor of mineralogy at the Paris Museum of Natural History in 1893, and in 1901 he was elected a foreign member of the Geological Society, from which he received the Wollaston medal in 1917; in 1904 he was elected a member of the Paris Academy of Sciences, and for the past eight years has been permanent secretary for the physical

sciences. His work includes studies of contact and endomorphic metamorphism and a detailed investigation of Mont Pelée. Among previous well-known recipients of the award are Suess, Huxley, Sir Archibald Geikie, Dr. Charles D. Walcott, Prof. H. F. Osborn, and Prof. T. C. Chamberlin.

MR. E. D. SIMON, late Lord Mayor of Manchester, has arranged with the Rothamsted Experimental Station to devote the whole of his farm and dairy herd at Leadon Court, Herefordshire, to a thorough test of the soiling system designed by Mr. J. C. Brown, formerly of the Harper Adams Agricultural College, in which a dairy herd is maintained largely on the produce of the arable land. Mr. Simon has obtained Mr. Brown's services as resident manager, and has authorised the Rothamsted authorities to publish all or any records and accounts that may be deemed helpful to farmers. It is believed that Mr. Brown's system will prove of great value; but in these difficult times the ordinary farmer could not afford to experiment on his own account, and the trial requires more land and dairy cows than could be provided at a college or an experimental farm. The experiment will serve a valuable purpose in showing how far the various modifications introduced will be financially advantageous to the dairy farmer, and agriculturists generally will greatly appreciate Mr. Simon's generous action.

ATTENTION was recently directed in these columns (November 11, p. 642) to the probable use of the cinema in England and France as a means of agricultural education among farmers. It is interesting to note that the United States Department of Agriculture has employed this method for the last nine years. At the present time they have 150 films available dealing with many branches of farming activity, and with rural life generally. Special attention is paid to the control of disease, both of animals and plants, and the best methods of crop production. The American parks and game preserves, which are in the charge of the Department of Agriculture, also receive attention, and their value to the nation is illustrated from many points of view. It is probable, however, that the films dealing with Extension Service activities of the Department are the most important. Of recent years the development of co-operation, both for the business interests and the amenities of rural life, has proceeded at an ever-increasing rate. There is no doubt that the progress of this movement has been, and will be, greatly stimulated by the use of films; they cannot, of course, replace in any way the valuable personal contact with the farmer, which is the corollary of an adequate research and advisory service, but they can help greatly in disseminating a general idea of the expert assistance that is available.

ON two previous occasions last month (December 2, p. 743, and December 30, p. 884) we referred to film displays in connexion with the Mount Everest Expedition of 1922. Another effort to place before the public a record of the results obtained, is the exhibition of



pictures at the Alpine Club Hall, Mill Street, Conduit Street, W.1. These pictures, which will be on view until February 6, include some 152 photographs and 52 paintings in oil and water colour. The photographs are chiefly by Capt. Noel, showing the personnel of the expedition, the camps and ground traversed, and the Tibetan people. Among the last-named group are several of the Rongbuk monastery and its inmates, including two telephotographs of the Chief Lama, who, as the supposed incarnation of the god Chonggraysay, could not be approached sufficiently for an ordinary photograph. There are several fine photographs of the East Rongbuk glacier by Capt. Finch, some of them showing the tremendous ice-pyramids which had to be traversed, varying in height from 30 to some 300 feet. At nearly 23,000 feet the Chang La camp was pitched in very curious surroundings; the peculiar snow formation shown behind the camp in the picture was only met with at this place. The photographs follow the climbing to a height of some 26,000 feet, and one shows the party a few minutes before the disastrous avalanche. The view of Changtse and Gyachung Kang from Mount Everest, taken at an altitude of 26,985 feet by Mr. Somervell, creates a record in photography. Among the more striking scenic effects are the wind-blown snows on the east slopes of Everest, and the sunset on the north face. Copies of the latter photograph and several others of the collection may be purchased. The impressive scenes in water colour and oil by Mr. T. Howard Somervell are also for sale. The proceeds will be spent on a third expedition.

THE weather over England in 1922 had no outstanding feature like the drought in 1921, and it will go down to posterity as a fairly normal year meteorologically. Heavy gales were somewhat more frequent than in late years, especially over the southern portion of the Kingdom. Observations at the Royal Observatory, Greenwich, show that the mean temperature for the year was 49.4° F., which is 0.7° less than the normal, using the period of 35 years, in agreement with the system adopted by the Meteorological Office. The warmest month was June with a mean temperature of 60.3°; this was the only month with the mean temperature above 60° and the only month with the mean of the maximum readings above 70°. January, February, May, June, and December were the only months with an excess of temperature. The coldest month was January, with the mean temperature 40.3°, which is 1.7° above the normal. There were two days in May with the shade temperature above 90°, and there was one day in January, April, October, and December with the shade temperature less than 25°. Rainfall for the year, using the results for the civil day, measured 23.24 inches, which is 0.26 in. less than the normal. July was the wettest month with 3.20 in., which is 0.96 in. above the normal; the next wettest month was December with 2.92 in., which is 0.66 in. more than the normal. October was the driest month, with the total rainfall 0.93 in., which is 1.60 in. less than the normal. Rain fell in all on 178 days, which is 15 days more than the normal, and in both January and July rain fell on more than 20 days.

November had only 8 days with rain. Sunshine was registered at Greenwich for 1,469 hours, which is 9 less than the normal: the sunniest month was May with 284 hours, the least sunny, November with 26 hours.

THE January number of the *Museums Journal* prints the report of a committee appointed by the National Society of Art Masters, the Incorporated Association of Headmasters of Secondary Schools, the Association of Headmistresses of Girls' Secondary Schools, and the Museums Association, to inquire how far the system of circulating objects from the Victoria and Albert Museum meets the needs of the provinces. Besides recommending that the circulation collections should be systematically completed and brought up-to-date, the committee suggests that the local museum might become a local sub-circulation department of the Victoria and Albert Museum. It ends by pointing out that, "whilst the total vote for Education has grown enormously, the sum allocated for the museum side of Art Education in the Provinces has been practically stationary for generations, and bears no proper relation to the sum available for education as a whole." And yet on its museum side Art Education is treated generously as compared with other branches of education.

AUTHORS and readers will be interested in the authoritative statistics of the cost of book production published in the excellent new Catalogue of the publications issued by Mr. Milford for the Oxford University Press. In the year ending March 31, 1914 the Press issued 157 new books at the average price of 7s. 11d., or 0.37d. per page. The corresponding figures for the year ending March 31, 1922 were 115 books at the average price of 11s. 10d., or 0.64d. per page. These figures concern only those books, in their nature unremunerative, which the Press produces as a service to education and learning. "It will be readily understood that the cost of the present output is higher than that of the pre-war output (though the rise in the price to the public does not show an equivalent increase); and the moral is easily drawn, that the output can be restored to the old level only by the activity of the Press in the production of remunerative books and by increased support from the public." It may be also noted that the concluding volume of the Oxford Dictionary will, when completed, have cost not less than 50,000l.

IN the article on the last report of the Development Commissioners, which appeared in *NATURE* of December 30 (vol. 110, p. 865), the statement was made "that the report does not contain, as in the past, an account of the present finances of the Fund." The Secretary to the Commissioners writes to point out that this statement, which we regret, is incorrect; for such an account does, in fact, appear in the body of the report, and it shows that the balance at the credit of the Fund on March 31 last was 1,337,336l., including 859,000l. received under the provisions of the Corn Production Acts (Repeal) Act 1921. The advances made during the year 1921-22 were, in the aggregate, 385,185l. The net balance available for annual



advances to meet the cost of existing schemes is stated to be 128,000*l.* only, against an estimated requirement of 200,000*l.* There may be some ground, therefore, for the apprehension expressed in the article as to the future adequacy of the Fund.

REFERRING to a remark made in the notice of his book "The Supremacy of Spirit" in NATURE of January 13, p. 45, Mr. C. A. Richardson writes to say that his purpose was not to attempt to deal at all adequately with scientific objections, but to show that (1) the evidence for the alleged facts is now of such a kind as to merit serious consideration and investigation by a scientific committee; (2) the alleged facts are in terms of his philosophical theory.

THE January list of new books and new editions added to Lewis's Medical and Scientific Circulating Library during October-December has just reached us. Although intended primarily for subscribers to the library, it should be of service to many others, being a general guide to medical and scientific works published in the past three months. The list, which is classified according to subjects, is to be

obtained free of charge from Messrs. H. K. Lewis and Co., Ltd., 136 Gower Street, W.C.1.

THE spring announcement list of the Cambridge University Press contains particulars of many forthcoming books of science. Among them we notice "The Air and its Ways," by Sir Napier Shaw, being the Rede Lecture for 1921, and other papers dealing with the physical explanation of the atmospheric circulation and with the application of meteorology to agriculture; "Relativity," forming the second of the supplementary chapters to Dr. Norman R. Campbell's "Modern Electrical Theory"; a newly arranged and enlarged edition of "The Mathematical Theory of Relativity," by Prof. A. S. Eddington; the "Collected Scientific Papers" of the late Dr. J. Aitken, containing some thirty-seven papers on atmospheric dust, fogs and clouds, air temperatures, and other scientific subjects, added to which is a sketch of the life and work of the author; and "Glass-Making in England," by the late H. J. Powell of the Whitefriars Glass Works, in which an account of glass-making in all its branches is given from the Roman period to the Great War.

### Our Astronomical Column.

OCULTATIONS OF STARS BY THE MOON.—On the night of January 27, the moon will pass over a number of the stars forming the well-known group in Taurus called the Hyades. The bright star Aldebaran is among those which will be hidden. The times of occurrence for four of the brighter stars will be as under:—

	Mag.	Disappears.		Reappears.	
		h.	m.	h.	m.
$\gamma$ Tauri	3.9	2	57	3	57
$\theta'$ Tauri	4.2	8	31	8	56
+15° 637	4.8	9	26	10	39
Aldebaran	1.1	12	35	13	30

The moon will be about 10½ days old at the time and the stars will disappear at the unilluminated side, and reappear at the bright edge of the disc.

The event may be witnessed with a small telescope, and it is possible that Aldebaran may be seen by acute, unaided vision nearly up to the time of its disappearance, which will occur 35 minutes after midnight. The moon will be due south at 8<sup>h</sup> and will be 55 degrees above the horizon at the time. There will be four other occultations of Aldebaran during the next 12 months, on March 23, October 27, November 24, and January 17, 1924.

OBSERVATIONS AT WALLAL OF THE ECLIPSE OF SEPTEMBER 1922.—The winter number of the *Chaldaean* (vol. v., No. 17) contains an interesting account of the observation of the eclipse at Wallal on the west Australian coast by Messrs. J. Hargreaves and G. S. Clark-Maxwell. Their principal instrument was the 19-ft. camera with lens of 4-in. aperture lent by Father Cortie, and the 8-in. coelostat lent by the Royal Irish Academy; these were the same instruments as were used at Sobral, Brazil, in 1919, when they gave a result in close accord with Einstein's predictions. But in 1922 the stars were too faint to be photographed with a ratio of aperture to focal length 1/57, and the instrument was simply used as a coronagraph. A large number of successful exposures were secured with a range of 1 to 80 seconds, so that they should give good details both in the inner and outer regions. Successful plates were also secured with the smaller cameras; a declinometer, to record magnetic variations during totality, failed owing to a

smoky lamp. The darkness during totality is stated to have been considerable, necessitating the use of lamps for plate-changing, etc. The extension of the corona on some of the plates is 4 solar diameters, which is quite satisfactory.

A gale rendered re-embarkation very difficult, one boat sinking in the surf. None of the important pieces of apparatus were in it, and the articles were recovered. This experience shows that it would have been quite impossible to land the very heavy packages of the Christmas Island party at Wallal; it is a slight mitigation of the disappointment that they suffered to realise that they chose the only station that was reasonably possible in the circumstances.

SPECTROSCOPIC PARALLAXES OF A-TYPE STARS.—The earlier spectroscopic parallaxes were restricted to types F, G, K, M; but, as was recently noticed in this column, Messrs. Adams and Joy have found that the state of sharpness or nebulosity of certain metallic lines in the spectra of stars of type A forms a trustworthy guide to absolute magnitude. The calibration of the correlation curves is effected both by trigonometrical parallaxes and by the group parallaxes of stars in moving clusters. The average differences of the spectroscopic and trigonometric parallaxes (without regard to sign) are +0.0131" (104 stars), spectroscopic and group parallaxes +0.0077" (82 stars). The systematic differences are 0.0000" and -0.0014" respectively. A list is given (*Astrophys. Journ.*, November 1922) of 544 spectroscopic parallaxes of stars in Boss P.G.C., including a number of members of the Taurus, Perseus, and Praesepe streams. The parallax of Praesepe is given as 0.013".

A test of the values found is afforded by plotting parallax against proper motion. The resulting graph is nearly straight, showing an increase of proper motion from 0.000" to 0.400" as the parallax rises from 0.000" to 0.058". It is found advisable to omit Sirius, the large parallax of which unduly affects the mean of its group.

Data are still wanting for finding the parallaxes of stars showing the *c* characteristic,  $\alpha$  Cygni being the leading example. Its absolute magnitude is estimated as -4 or -5.