

cuts off the light altogether when the mirror is deflected, is used in place of the graduated screen in the receiving apparatus.

M. Belin has perfected a portable form of the transmitting apparatus for connection to any telephone line. Considerable possibilities, both in illustrated journalism

and in police work, by the prompt transmission of portraits, finger-prints, handwriting, etc., are opened up by apparatus of this kind, and obviously the system preserves secrecy, as regards all ordinary listening-in apparatus, as the actual signals sent furnish no clue to the nature of the picture being transmitted.

Current Topics and Events.

ON May 17 the House of Lords, again prompted by Lord Sudeley, asked the Government to encourage the educational use of museums, and the Government, by the mouth of Lord Hylton, expressed the willingness of the Treasury "to consider in a very sympathetic spirit any further requests" for the appointment of guide-lecturers, also its own "desire to encourage all steps that can be taken to develop the sale of" photographs and other reproductions of objects in the national museums. Fair words! And progress has been made since the debate initiated by Lord Sudeley fourteen months ago. How does the Government translate word into act? It has just cut down the grant for the production of these popular publications, and, if its threat to reimpose admission by payment be enforced, it will deal a severe blow at the whole business and at the usefulness of the guide-lecturers. Never was anything so ridiculous perpetrated in the name of economy. That the sale of publications is a source of income is admitted by the Treasury. At the British Museum (Bloomsbury) an advanced policy has raised the receipts under this head from 3400*l.* in 1920-1921 to 6200*l.* in 1921-1922, thus more than paying for the whole cost of guide-lecturers. The introduction of pay-days will inevitably check this sale, and what will it bring in? The average receipts from admission at the Victoria and Albert Museum during the twelve years the system was in force were about 650*l.* per annum. At the Natural History Museum an expensive stall has just been fitted and saleswomen engaged, and now the authorities expect to have to spend 250*l.* on turnstiles and to lose 400*l.* on sales. One after the other the leaders of industry tell us that the secret of recuperation is more production; yet the Government, when it has a paying business, proposes to economise by checking production.

THE Metropolitan-Vickers Electrical Co., Ltd., which has a large works at Trafford Park, Manchester, devoted to the manufacture of electrical machines and apparatus, proposes to take up the manufacture of radio receiving equipment, and for this purpose will work in conjunction with the Radio Communication Co. of London. The Radio Communication Co., which is associated with the Indo-European and Eastern Telegraph Cos., was formed in 1919 to carry on business in connection with the establishment of radio telegraph and telephone installations and is well known for its important work during the war. The manager of the Metropolitan-Vickers Co.'s Research and Education Departments, Mr. A. P. M. Fleming, has been negotiating during the last few months with the Postmaster-General with reference

to the establishment of broad-casting stations, and the companies propose to establish two stations immediately, one at Trafford Park, Manchester, and the other at Slough. Other stations are projected as required. Immediately the official arrangements are made with regard to the areas to be covered and sites of the broad-casting stations, active steps will be taken to provide suitable programmes for broad-casting and to manufacture the necessary receiving equipment. The Westinghouse Co. of America initiated the broad-casting of information and entertainment by radio telephony and has very extensive experience in connection with it. The Metropolitan-Vickers Co. is technically very closely associated with the Westinghouse Co. and will be able to draw upon this unique experience, which with the utilisation of a number of fundamental patents in connection with wireless telephony, the experience of the Radio Communication Co. and its own selling, manufacturing, and research organisation, should place the Company in an exceptionally favourable position in entering this new field.

A TELEGRAM has been received from Fiji reporting the successful treatment of more than 12,000 hookworm cases by carbon tetrachloride with 90 per cent. of cures with one dose, and the removal of 98 per cent. of the worms. This method was tried first on dogs by Dr. Maurice C. Hall of the United States Bureau of Animal Industry, who found that 0.3 c.c. of the drug for every kilogram of live weight expelled all the hookworms of those animals, a result he had never previously obtained by any other method of treatment, while it could be given after fasting in hard gelatin capsules without purgation being necessary. As the new drug is much less toxic and far cheaper than either thymol or oil of chenopodium, the last of which has given rise to a number of fatalities owing to the uncertain amount of the active principle in different samples, these are matters of great practical importance, and the remarkable success of the trial now reported will, if confirmed by further observations, prove a notable advance in dealing with this the most widespread health- and labour-destroying scourge of immense areas of the world.

WITH reference to the reported discovery of a stage of the *Leishmania donovani* parasite of kala-azar in the salivary gland of a bed bug in Assam, information has now been received that Lt.-Col. Christophers, I.M.S., has reported the specimens of Mrs. Aidie to show only a normal parasite of the bed bug, which has no relationship to the organism of kala-azar, so the solution of the problem of the carrier of that disease is still incomplete.

THE revised scheme for poultry research of the Ministry of Agriculture, which was foreshadowed by Sir Arthur Griffith Boscawen at the Poultry Club dinner last October, has been approved by the Development Commissioners. Of the grant of 50,000*l.*, 19,500*l.* will be devoted to capital expenditure and the balance to maintenance during five years. The grant is conditional on the sum of 6500*l.* being provided by the industry, and apparently any further grant will depend on results. So that the seedling will have to be planted, pruned to shape, and brought into profit in five years. The provisional scheme includes: (a) An experimental section at the Harper Adams College, capital 15,000*l.*, maintenance grant 2000*l.* a year; (b) experiments in egg production, 2500*l.* and 725*l.*; (c) experiments in the production of table poultry, 1500*l.* and 725*l.*; (d) research at the Cambridge School of Agriculture, 5000*l.* and 300*l.*; (e) experiments in nutrition at the same school, 500*l.* and 1000*l.*; (f) diseases research at the Ministry's Addlestone Laboratory, 1500*l.* and 1250*l.* Much will depend on the personnel of the "advisory committee." Sections (b) and (c) will be supervised by representatives of the local poultry societies. It is hoped that the scheme may lead to an improvement in British methods of poultry production; hitherto deplorably unscientific.

THE Forestry Commissioners announce that a prize of five thousand dollars is offered by Mr. Frank J. D. Barnjum of Montreal for a practical method of combating and suppressing the spruce bud worm, bark beetle, and borer, which have caused such tremendous damage in the forests of Eastern Canada and the United States. The Province of Quebec alone has suffered a loss during the past ten years of 150,000,000 cords of standing pulpwood by these pests, which represents a market value in pulpwood of three billion dollars, or if manufactured into paper, of seven billion dollars. This represents a loss of wood sufficient for forty-five years' requirements for newsprint for the North American continent. The competition will close on August 1, and the 5000 dollars will be given for the successful suggestion that is accepted by the judges, who will be Sir William Price of Messrs. Price Bros., Quebec; Dr. C. D. Howe, Dean of the Faculty of Forestry, Toronto University; Mr. Fred A. Gilbert, Great Northern Paper Company, Bangor, Maine; Mr. G. C. Piche, Chief of Forest Service, Quebec, and Mr. Ellwood Wilson, Laurentide Company, Grand Mere, Quebec. Competitive suggestions should reach Mr. Frank J. D. Barnjum, New Birks Building, Montreal, Canada, before August 1.

ONE encouraging sign after the war is the increased interest being shown in the Yorkshire Philosophical Societies, most of which were founded about a century ago. The Whitby Society has just had its most successful year; the Scarborough Philosophical Society is also picking up; the Hull Society is celebrating its centenary this year, and the York Philosophical Society next year. This last has issued a pamphlet and an appeal for 75,000*l.* in order to

extend its museum and properly to preserve the wealth of archæological material within its grounds. Fortunately, through the generosity of the late Dr. Tempest Anderson, the society was recently very much relieved of its financial anxiety, and under the regime of the new Keeper, Dr. Collinge, efforts are being made to enlarge the museum and to take the necessary steps towards preserving St. Mary's Abbey and the Hospitium. The pamphlet accompanying the appeal contains illustrations from photographs of St. Mary's Abbey, the galleries devoted to mammalia and birds, and the unique bronze mortar belonging to St. Mary's Abbey which is dated 1308—probably one of the earliest dated pieces of this kind in the country. We notice one of the objects of the appeal is to provide "a Yorkshire museum up to the standard of modern requirements." Seeing that most of the important towns and cities in the county now have their museums, the museum at York will probably have more than sufficient for its requirements if attention is confined to the antiquities of the city and its immediate area.

THE thirty-third annual conference of the Museums Association will be held at Leicester on July 10–July 14 next, under the presidency of Mr. E. E. Lowe, Director of the Museum, Art Gallery, and Libraries, Leicester. The subjects for discussion at the conference are to deal more particularly (though not entirely) with the practical and technical side of museum work, and the secretary (Dr. W. M. Tattersall, The Museum, The University, Manchester) will be glad to receive offers of papers of this nature as early as possible. An exhibition of appliances, fittings, apparatus, and cases appertaining to museum work, by commercial firms who supply these things is being arranged with a view of the mutual interchange of ideas between Curators and business men. Visits will be made to the Museum, the Art Gallery, the Library, and the newly founded University College, and it is hoped that arrangements will be possible whereby the members attending the conference will be able to inspect one of the staple manufactories of the town. Excursions to the pre-Cambrian area of Charnwood Forest and to the granite area of Mount Sorrel are contemplated. The duties of hon. local secretary have been undertaken by Mr. W. Keay, 6 Millstone Lane, Leicester.

THE annual report of the Zoological Society of London for 1921, presented at the annual general meeting on April 28, records a net increase of 129 in the number of fellows of the Society, while the number of visitors to the gardens, though nearly 200,000 less than the million and a half of 1921, is still the third largest in the history of the Society. The scheme of lectures to school teachers, arranged in 1910 in co-operation with the London County Council, was continued, and Mr. F. Balfour-Browne conducted two courses of four lectures with lantern demonstrations and three tours of the gardens, each course arranged for 150 teachers. The future of the "Zoological Record" has received the serious consideration of the Council, and the volume for 1921 has been

started in the hope that the support appealed for will be sufficient to justify publication and so save this valuable compilation for zoologists both in this country and abroad. Special mention is made of the valuable collection of water-colour drawings of ornithological subjects bequeathed by the artist, the late Major Jones, a collection of almost unique artistic beauty and ornithological interest. The collections of animals from Nepal and Malaya presented by H.R.H. Prince of Wales, will be exhibited in a special part of the gardens during the summer of 1922. Among the proposed new works for 1922, the most important are the provision of better accommodation for the refreshment department and the suggested aquarium on the Mappin Terraces for fresh-water and marine animals. A proposal to place coloured labels on the cages and enclosures containing different species, as a means of identification for visitors, is one that will commend itself. Experiments with coloured drawings painted on tiles and afterwards fired promise success in the production of a form of label which is weatherproof. There can be no doubt that the provision of such labels will prove of great service to visitors to the gardens.

ON Tuesday next, May 30, Sir Percy Sykes will deliver the first of two lectures at the Royal Institution on (1) "Travel in Persia," (2) "Foundation of the Persian Empire." The Friday evening discourse on June 9 will be delivered by Mr. Joseph Barcroft

on "Physiological Effects at High Altitudes in Peru."

THE following have been elected officers and new members of council of the Institution of Electrical Engineers for 1922-1923: *President*, Mr. F. Gill; *Vice-Presidents*, Dr. W. H. Eccles, and Mr. A. A. Campbell Swinton; *Honorary Treasurer*, Sir James Devonshire; *Ordinary Members of Council*, Mr. J. W. Beauchamp, Mr. R. A. Chattock, Mr. F. W. Cawter, Mr. D. N. Dunlop, Major K. Edgcumbe, Mr. A. F. Harmer, and Mr. W. R. Rawlings.

AT the annual general meeting of the Chemical Section of the Manchester Literary and Philosophical Society held on May 5, the following officers and members of committee were elected: *Chairman*, Mr. Leonard E. Vlies; *Vice-Chairman*, Dr. H. F. Coward; *Hon. Secretary*, Mr. David M. Paul; *Committee*, Dr. David Bain, Dr. W. H. Bentley, Mr. David Cardwell, Mr. R. H. Clayton, Dr. J. A. R. Henderson, Mr. Harold Moore, Miss Rona Robinson Prof. F. C. Thompson, and Dr. J. C. Withers.

WE have received from the Eastman Kodak Company, Rochester, New York, their latest price list of Eastman Organic Chemicals. Several new chemicals have been added. The list is noteworthy in that it now includes melting- and boiling-point data for the majority of the chemicals determined from actual laboratory observations. This feature should make it useful to chemists.

Our Astronomical Column.

NEW COMET.—A faint comet, 1922 *b*, was discovered by Mr. Skjellerup at the Cape on May 17^d. 6^h. G.M.T., in R.A. 7^h. 53^m. 44^s., N. decl. 19° 32'. Daily motion +6^m. 40^s., N. 1° 28'. The comet is an evening object, and its motion is bringing it into a more favourable position for observation.

CHANGES ON THE MOON.—In a paper by Prof. W. H. Pickering in *Popular Astronomy* for May two drawings are reproduced of the lunar crater Eratosthenes by Dr. Maggini. Prof. Pickering shows that these corroborate strongly his own work, and establish fully the reality of the changes of aspect. He notes that the markings cannot be shadows, since they are visible at full moon, and one of them approaches the setting sun, instead of receding from it; but he has not, perhaps, considered sufficiently the possibilities arising from the different changes of reflective power, according to the angle of incidence, that are shown by different substances. It is generally agreed that at least two lunar phenomena—the increasing visibility of the bright rays as the sun's altitude increases, and the darkening of the floor of the crater Plato under the same conditions—arise in this way. Prof. Pickering estimates the density of the lunar atmosphere as $\frac{1}{1000}$ of that on earth, and supposes that enough water vapour and carbon dioxide might be emitted from the craters to support low forms of vegetation.

PROF. BROWN'S NEW LUNAR TABLES.—Prof. Brown in his tables, which are used for the first time in the Nautical Almanac for 1923, deliberately adopted the secular acceleration arising from the change in

the eccentricity of the earth's orbit, regarding the larger value deduced from ancient eclipses (generally ascribed to the tidal retardation of the earth's rotation) as too uncertain to use. Many will consider that in this respect he showed some lack of judgment, for Dr. Cowell's discussion of the old eclipses was available before the tables were put into final form. However, he now admits his conversion to the larger acceleration, which has been effected by Dr. Fotheringham's papers on the old eclipses and occultations, and the researches of C. I. Taylor and Dr. H. Jeffreys (misspelt Jeffries by Prof. Brown) on tidal friction in the Irish Sea and similar semi-landlocked waters. In a paper in the *Astronomical Journal*, No. 799, he gives the results of an increase of the moon's secular acceleration from 7.12" to 11.91", with the resulting changes in some other constants. He notes that the change makes little difference in his tabular places up to the year 1890, but that it makes a decided improvement since that date, which is another argument, though not a very strong one, for the larger acceleration. Brown's tables thus modified represent the moon's longitude correctly for the end of 1905; after that the moon went ahead of the tables, reaching a maximum of nearly 5" in 1918; it now shows signs of diminishing again. A small table enables the new correction to be applied to Brown's longitudes of the moon up to the year 1940, when its value is 7.44". This table will be of use in predicting eclipses, or for other purposes where an accurate prediction is desirable. The paper also gives a list of the errata detected in the new tables; these are chiefly in the explanatory matter, but one refers to the tables themselves.