

than ten per cent of the membership of the Society. The new president for the forthcoming session is Mr. R. O. Ackerley.

The Illuminating Engineering Society made a practice, in the years preceding the War, of inviting an eminent expert from abroad to deliver an address on the occasion of each annual meeting. This practice is no longer possible in the present circumstances, but its own members have filled the gap. The lecturer on May 12 was Mr. G. H. Wilson, who took for his subject "Street Lighting: Past, Present and Future". Mr. Wilson remarked that the period 1928-38 was one of great technical progress. An outstanding event in 1928 was the erection of fifty model lighting installations illustrating the eight classes of the British standard specification. This led to a recognition of the importance of road surface brightness as a factor in relation to visibility. During the ten-year period two new sources, the sodium and mercury vapour lamps, were introduced. Their unusual spectra raised new problems and their shape and size made necessary considerable changes in the design of lanterns. Attention was also devoted to the problem of the siting of posts, which was discussed in the report of the departmental committee appointed by the Ministry of Transport appointed in 1934. After referring briefly to lessons to be learned from our experience of the low orders of illumination available during the present black-out, Mr. Wilson reviewed after-war problems. He pointed out the possibilities of the new fluorescent lamps, expressing the belief that technical resources are enormous. The future of street lighting, he affirmed, depends largely on the extent to which the scientific attitude of mind is employed in the application of the achievements of research—for example, in connexion with bold experiments in town planning.

Fluorescent Lighting

A PAPER on this subject, read recently by L. J. Davies, H. R. Ruff and W. J. Scott before the Institution of Electrical Engineers in London, gives a brief history of fluorescent lighting and follows this by a description of a typical mains-voltage tubular fluorescent lamp and the principles of its operation. The new fluorescent lamp combines the high efficiency of the straight electric discharge lamp, with much of the convenience of operation of the incandescent lamp, while possessing, in addition, special characteristics of low brightness, exceptional colour-rendering power, and comparative absence of radiant heat. The 200/250-v., 80-watt lamp and its auxiliaries, marketed in Great Britain in March 1940 to improve factory lighting in blackout conditions, are described in detail and the characteristics and components of the complete unit are explained. This lamp is 5 ft. long and $1\frac{1}{2}$ in. in diameter, taking 0.8 amp. at a lamp voltage of 115; its nominal luminous efficiency is 35 lumens/watt and its mean brightness is 3.3 candles/sq. in. Its high electric power/light conversion ratio is examined together with the conventions whereby these are assessed. The paper concentrates attention upon the practical features of the lamp, but gives a sufficient description of the physics involved to promote an appreciation of both the present characteristics and future importance of this type of light source. The authors conclude that the lamp is satisfactorily fulfilling a present industrial need, and that its quality has been so greatly appreciated that it is undoubtedly the forerunner of a new series of lighting lamps.

Industry in Scotland

IN the discussion in committee in the House of Commons on May 12 on the estimates for the Scottish Home Department, Mr. T. Johnston, Secretary of State for Scotland, gave a survey of industrial development in Scotland since 1918. He referred to the advisory committee on Scottish industry which has been set up, and expressed the hope that by its means the industrial aftermath in Scotland of 1914-18, due to concentration on heavy industries for export, will be avoided. In the course of the discussion, Sir John Graham Kerr put in a plea for the development of a variety of small light industries. The industrial belt of Scotland has grown in its present position because the sources of power are close at hand. Industry tends to drift to the more populous parts of the country—in Scotland to the south—and one way of stopping this drift is to carry power all over the country. The transport of power is of vital importance. In the form of coal and oil, subject to road or rail transport, power is only distributed with difficulty and at relatively high cost. The newer method of distribution of power through an electric grid might have a tremendous influence on Scotland and its industries, for, by these means, the site of industry is no longer tied to the source of power, and the feeding of small units becomes feasible.

Austrian Scientific Workers in Great Britain

AN Association of Austrian Engineers, Chemists and Scientific Workers in Great Britain has recently been formed. The main activities of the Association will be to assist members in their professional work and interests, to represent them with the authorities, to promote contact and relations with British colleagues and to form a link with British scientific and technical institutions. Lectures, courses and discussions will be held and will give opportunities for the exchange of views and to discuss matters of mutual interest. It is hoped that the Association may assure that better use is made of the knowledge and abilities of Austrian engineers, chemists and scientific workers who are anxious to assist in the war effort. The acting chairman of the Association is Dr. F. Ehrenfest-Egger; inquiries should be sent to the honorary secretary, Mrs. K. Hilfreich, 133 Hatherley Court, London, W.2. Lectures are being given on the first Monday of each month. Every Monday, commencing June 1, at 7 p.m., a club-room will be open for members of the Association at the Austrian Centre, 69 Eton Avenue, N.W.3, where there will be opportunities to read technical periodicals and to meet other colleagues.

A Relic of Dr. John Dee

THE sale by Messrs. Sotheby of an interesting relic of the mathematician and astrologer Dr. John Dee, who was patronized by Queen Elizabeth, was recorded in *The Times* of May 5. The relic is a gold disk $3\frac{1}{2}$ in. in diameter weighing 1 oz. 4 dwt. 5 gr., bearing the London date letter for 1589 and engraved with a diagram of the "Vision of the Four Castles" which appeared to his medium Edward Kelley, on the morning of June 20, 1584, at a house in St. Stephen's Street, Cracow, where the two men were staying. The diagram is reproduced in "A True and Faithful Relation of what passed for many Years between Dr. John Dee . . . and some Spirits" published in 1659 by Dr. Meric Casaubon. The disk was bought by the British Museum for £230.