with the Westinghouse Electric and Manufacturing Co. at its East Pittsburg works. On joining the Manchester company, he was engaged as a specialist in electrical insulation and soon became chief designer, and then superintendent and chief engineer, of the Transformer Department.

It was not long before Fleming introduced arrangements for the systematic training and further education of the young men in this Department, and from this beginning grew the Education Department of the Company, of which he became director. He used often to say that the most important raw material of industry was its young people, and he devoted himself to ensuring that his own young people, from the embryo craftsman to the university graduate, were recognized and treated as such. They came not only from schools and universities in Britain, but also from all over the world, for in the sphere of industrial training the names of Fleming and Metro-Vickers became international bywords; and there can scarcely be a country in which there are not several, indeed many, men who hold 'A. P. M.' in honour and who would welcome the opportunity to express their deep gratitude for his efforts on their behalf. His influence and inspiration in this sphere were not, of course, confined to his own Company; they penetrated widely within the electrical industry as a whole, and the benefits they have brought to the progress of this industry have been profound.

All this, however, was only part of his achievement. His far-sighted views on engineering education and training were matched by his realization of the need for research within industry, and especially for research which was not bounded by the problems of existing products. In parallel, therefore, with his establishment of schemes of apprentice training, he began to create a research department within the Company, to which he attracted a succession of men of outstanding ability and who responded to his inspiration by making many notable contributions in pure as well as applied science. A particular example of his remarkable foresight was his forceful contribution to the establishment of radio broadcasting in Britain. He retired from his directorship of research and education in Manchester in 1952.

Fleming's outside interests and activities were manifold. He was a member of the Council of the University of Manchester, of the Governing Body of the Imperial College of Science and Technology in London, of the Delegacy of the City and Guilds of London Institute, of the Ministry of Education Committee on the Training of Teachers and Youth Leaders, and of the War Cabinet Engineering Advisory Committee; chairman of the Electrical Engineering Committee of the Central Register of the Ministry of Labour, of the Athlone Fellowship Committee of the Board of Trade, and of the Federation of British Industries Overseas Scholarships Committee; and president of both Sections G (Engineering) and L (Education) of the British Association, and of the British Association for Commercial and Industrial Education. He also played an important part in the establishment of the Department of Scientific and Industrial Research and of the Electrical Research Association.

Within all these interests, the Institution of Electrical Engineers occupied a place of special importance; he became a member of its Council in 1932, was elected a vice-president in 1935 and president in 1938; and for his outstanding services to the profession was awarded the Faraday Medal in 1941 and elected to honorary membership of the Institution in 1952.

The Universities of Manchester and Liverpool conferred honorary doctorates upon him; he was made C.B.E. in 1920 for his contribution to submarine detection; and knighted in 1945 for his services to education.

Those who knew him well will remember him with admiration for his exceptional foresight, his unlimited enthusiasm and vitality, his unrestrained willingness to make his knowledge and experience widely available, and his devotion to the needs of the younger generation. Many more who did not know him have cause to be grateful for the benefits that have come from his life of public service. WILLIS JACKSON

NEWS and VIEWS

Chemical Technology at the Imperial College of Science and Technology, London: J. S. Rowlinson

THE chair of chemical technology in the Imperial College of Science and Technology was held for many years by the late Sir Alfred Egerton, but it was not filled after his retirement in 1952. It has recently been announced that Dr. J. S. Rowlinson, senior lecturer in the Department of Chemistry, University of Manchester, has now been appointed to the chair. Dr. Rowlinson had a distinguished career at Oxford, where he was Millard Scholar at Trinity College. He obtained first class Honours in chemistry in 1948 and the degree of D.Phil. in 1950. Leaving Oxford, he went as a Research Associate to the University of Wisconsin for a year, before going to the University of Manchester, where he was first an I.C.I. Fellow and afterwards lecturer, and more recently senior lecturer. Dr. Rowlinson received a Meldola Medal of the Royal Institute of Chemistry in 1954 and the Marlow Medal of the Faraday Society in 1957. Among his outside contacts it may be mentioned that he was formerly a member of the Thermodynamics Committee, National Engineering Laboratory, and he is at present a member of the Joint Sub-Committee of the National Physical Laboratory and the National Chemical Laboratory on Fundamental Properties of Pure Materials. He has carried out research on experimental and theoretical aspects of compressed gases, liquids and solutions, and he is the author of a book entitled "Liquids and Liquid Mixtures" published last year. Dr. Rowlinson goes to the Imperial College at a time when it is expanding rapidly.

Physiology at the Royal Free Hospital School of Medicine, London: Prof. C. B. B. Downman

DR. C. B. B. DOWNMAN has been recently appointed to the Sophia Jex-Blake chair of physiology at the Royal Free Hospital School of Medicine, London, in succession to the late Prof. Esther Killick. Dr. Downman was educated at the City of London School and St. Thomas's Hospital Medical School.