after the liberation of Poland in 1919 he returned to Warsaw, where he was appointed to the chair of experimental physics at the University, a position he held until his death. When he took office the Physics Department was practically non-existent; but within a few years he built it up into one of the most up-to-date and best-equipped institutions for research and teaching on the Continent of Europe. He also created a very large and active school, from which have come many of the present leading physicists in Poland.

During the Second World War, the Physics Institute at Warsaw was almost completely annihilated; most of the equipment was taken away to Germany and the buildings seriously damaged. Undaunted, Prof. Pienkowski carried on with teaching and scientific activities in the underground University. Immediately the War ended, he began to rebuild the Institute, and despite difficult conditions he managed to bring it back to its former splendour.

His research work was mainly concerned with spectroscopy and photoluminescence; he was particularly interested in molecular structure, in which work he also employed X-ray spectroscopy. Later, he developed an interest in nuclear physics and installed in his Institute the first proton accelerator in Poland. Plans for the building of other accelerators had to be abandoned because of the War; but he encouraged work on nuclear physics and cosmic rays and has sent some of his most promising pupils to study in laboratories in Great Britain.

Apart from research and teaching, Prof. Pienkowski took a very active part in the organization of science in Poland. For several years he was rector (vice-chancellor) of the University of Warsaw, and he resumed this office immediately after the War with the formidable task of rebuilding the University from the ruins. He also took a leading part in the work of the Polish Academy of Science and in recent years was put in charge of its Physics Section, which included the development of atomic energy.

All these outside activities did not diminish his devotion to his own Institute, in which he took the greatest interest and where he was revered by every worker. His was the rare personality which combined a genius for organization and exceptional administrative skill with a remarkable talent for teaching and a youthful zeal and enthusiasm for scientific investigation.

J. ROTBLAT

Mr. T. H. Withers

THOMAS HENRY WITHERS, an authority on fossil crustaceans, died on October 2 at Bournemouth, where he had been living since his retirement in 1944 from the staff of the British Museum (Natural History). Born in London in 1883, he became in 1898 a boy attendant in the Geological Department of the Museum, where his natural ability and enthusiasm soon received encouragement from F. A. Bather, who eventually, in 1925, established him on the scientific staff.

In 1910 Withers published the first of a long series of papers on fossil cirripedes. Among these contributions were extensive accounts of the cirripedes of the Rügen Chalk (1923) and of New Zealand (1924); but at an early stage in his career he had planned a monographic account of the whole group, which had not been revised since Darwin's day.

Starting with the Palaeozoic, he was able to show that certain problematical organisms (including *Turrilepas*), then usually referred to the cirripedes, were in fact not arthropods at all, but belonged to an isolated group allied to the echinoderms which he named, in a volume published by the Trustees of the British Museum (1926), the *Machaeridia*. His "Catalogue of Fossil Cirripedia" appeared in three volumes: the first, on Triassic and Jurassic forms, in 1928; the second, on the Cretaceous, in 1935; and the third, on the Tertiary, in 1953, just over a century after the appearance of Charles Darwin's monograph. In 1851 Darwin knew only four Tertiary species; Withers dealt with ninety-three, no less than forty-three of which he had himself instituted. He was interested, however, not so much in the mere description of material as in the phylogeny of the various forms and in the evolutionary significance of structural changes. The same approach inspired his studies of Mesozoic crabs, in which he discussed the origin and evolution of the *Brachyura*.

Although hampered by ill-health after his retirement, Withers continued his scientific work to the end, and at the time of his death had almost completed an account of the cirripedes for a forthcoming treatise on invertebrate palaeontology.

W. N. EDWARDS

Dr. H. E. Ives

DR. HERBERT EUGENE IVES was the distinguished son of a distinguished father. Born in 1882 in Philadelphia, he had his early education in physics at the University of Pennsylvania, followed by two years at Johns Hopkins University as a Fellow. He worked in turn at the U.S. Bureau of Standards, the National Electric Lamp Association, the United Gas Improvement Co., the Western Electric Co., and finally at the Bell Telephone Laboratories. He had one break, as an officer in the United States Army in 1918, when he was in charge of research on aerial photography, and another during 1941-45 when he was head of a section of the National Defense Research Committee.

He was a member of many scientific societies, and served as president of the Optical Society of America and of the American Numismatic Society. He was a corresponding member of the British Illuminating Engineering Society, and a Fellow of the Physical Society, before which he delivered the Thomas Young Oration in 1933. In the same year he gave the Traill-Taylor Memorial Lecture before the Royal Photographic Society. Among other honours he received the Frederic Ives Medal (founded in memory of his father) from the Optical Society of America.

Ives's work was mainly in the field of applied optics, but in this field he roamed widely. His earliest work concerned colour photography, and this led him to examine the efficiency of illuminants, a subject to which he frequently returned. The width of his approach is shown by the inclusion of the firefly among illuminants. In studying illuminants, he improved the practice of photometry, showing among other matters the origin of some discrepancies found in flicker photometry. In considering illumination, it was natural to him to study spectrophotometry and various receivers of radiation such as photoelectric cells, thermopiles, and—as a special case—the eye.

The effect of his connexions with the telephone laboratory was to cause him to work on electric contacts, and to intensify his interest in photo-electric cells. Under his guidance, the transmission of pictures was developed and demonstrated in 1924. In 1927 his group gave a demonstration of television. Later, he worked on the projection in relief of moving pictures. In 1930 he demonstrated two-way television for the first time, and worked on the problem of television in colour. His interest in colour led him to devise a three-colour palette for the artist, and this was the subject of his Thomas Young Oration.

In later years Ives became interested in relativity problems, especially the effects of movement on rods and clocks, and most of his writings since the end of the Second World War were concerned with such problems. Experiments in conjunction with Stilwell on the Doppler effect in hydrogen canal rays gave evidence supporting the Larmor-Lorentz theory, and in his writings Ives continually emphasized his belief in the reality of the ether.

From photometry to relativity, from fireflies to atomic clocks, Ives showed a breadth of interest infrequently matched in an age of narrow specialization.

A. C. MENZIES

NEWS and VIEWS

Institution of Electrical Engineers: Honorary Membership and the Faraday Medal

Two honours have recently been conferred by the Institution of Electrical Engineers. Mr. Ernest Leete has been elected to honorary membership of the Institution for his outstanding services to the Institution, in particular for his services as honorary treasurer and as an ordinary member of council over a period of almost a quarter of a century, and also for his work on behalf of the Benevolent Fund of the Institution over a similar period of years. The thirty-second award of the Faraday Medal has been made to Mr. Isaac Shoenberg for his distinguished work in electrical engineering, in particular the outstanding contributions which he has made to the development of high-definition television in Great Britain.

Mr. Ernest Leete

MR. LEETE was born at Wallington, Surrey, in 1886 and was educated at Uppingham School. In 1904 he joined the London Electric Wire Co. and Smiths, Ltd., and was afterwards appointed secretary, secretary and director, managing director and consultant. He served as chairman of the Cable Makers' Association in 1928. He was first elected to membership of the Institution in 1917, and on three separate occasions he served the full period of three years as honorary treasurer: during 1929-32, 1940-43 and 1946-49. With two other members of council he evolved in 1939 a series of recommendations regarding the financial policy of the Institution which have formed the basis of the present financial security which the Institution now enjoys. Mr. Leete's interest in the activities of the Benevolent Fund have extended over some twenty years or more, during ten of which, except for short periods, he served as deputy chairman of the court of governors. He was one of the prime movers in the inauguration of the Homes Fund for the development of "The Chesters" residential estate. He was appointed chairman of the Homes Committee on its inception in 1945.

Mr. Isaac Shoenberg

MR. SHOENBERG was born in Russia in 1880, where he received his early technical education, and afterwards took postgraduate courses at the City and Guilds College and the Royal College of Science, London. After serving as chief engineer of the Russian Wireless Telegraph and Telephone Co., St. Petersburg, during 1905-14, he went to Britain to take up an appointment as consulting engineer to the Marconi Wireless Telegraph Co., later be-

coming head of the Patent Department and finally joint general manager of the Company. In 1928 he was appointed joint general manager of the Columbia Gramophone Co., and in 1931 he went to Electric and Musical Industries, Ltd., where he led a team of scientists which developed the television system with its ancillary equipment that was adopted by the B.B.C. in 1936. This work involved the development not only of circuits but also of new types of electronic devices such as the cathode-ray receiving tubes with modulated cathode stream and magnetic focusing and scanning. His development of the electronic picture tube known as the 'Emitron' contributed perhaps more than any other single item to the success of the new system. Early in 1937, Mr. Shoenberg was able to offer to the Post Office and to the B.B.C., transmission equipment, including special cables and repeaters, which enabled scenes of the coronation procession of King George VI to be televised. With the great success of the television programme of the Queen's Coronation last year still very much in public memory, the Institution decided that it would be most appropriate to award the Faraday Medal to one who has been a leading pioneer in developing television broadcasting.

Queen's University, Kingston, Canada:

Prof. J. K. N. Jones

DR. J. K. N. JONES, reader in organic chemistry in the University of Bristol, has been appointed Chown research professor in chemistry in Queen's University, Kingston, Canada, and took up his new duties on October 1. He is a graduate of the University of Birmingham, where he carried out post-graduate research on the synthesis of vitamin C and its analogues under the direction of Prof. E. L. Hirst and the late Sir Norman Haworth. In 1937 he accompanied Prof. Hirst to Bristol, and together they pursued carbohydrate investigations which in many cases involved new techniques for handling this complex group of substances. Prof. Jones has elaborated techniques of methylation, periodate oxidation, and, in particular, paper chromatography for structural investigations of plant gums and mucilages, algal polysaccharides, pectic substances, hemicelluloses, starches and glycogens. During the Second World War Prof. Jones investigated nitration processes and held a commission in the Signals Section of the University of Bristol Senior Training Corps. In 1945 he joined the staff of the University of Manchester, and in 1948 returned to Bristol as reader in organic chemistry. Within recent years he has