

scattering of very slow neutrons in crystals. In favourable instances the nuclear Zeeman effect should be observable.

One may imagine, too, searches for effects of electric or magnetic fields upon any small electric or magnetic moments that may be possessed by free photons, and one can see interesting problems concerning the limitations to the possible narrowness of Mössbauer lines from transitions still longer-lived than the 10^{-7} sec. iron-57. Are these limits due to fluctuations in crystal fields, to the finite size of the crystal (or of whatever part of it may act as a unit in declining to accept the proffered recoil energy) or to other causes? If the relative motion of the source and the absorber is at a frequency high compared with the inverse lifetime of the excited state, will the process recognize or ignore this motion?

The recoilless absorption process should be accompanied by sharply resonant scattering, weakened by the strong internal conversion of low-energy gamma transitions. In experiments at Birmingham, with gold-197, it appears just observable. This scattering should be coherent with the Rayleigh component and, in favourable circumstances, should show the lattice interference patterns familiar in X-ray work from which not only the positions of the resonantly scattering nuclei but also the phase of scattering should be measurable.

Thus, after a long period of little progress, γ -ray optics now offers a range of phenomena comparable

with those known in the fields of light and of X-rays, and, though admittedly in rather special circumstances, a far superior resolving power.

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OBITUARIES

Prof. P. Lebeau

PAUL LEBEAU, professor of pharmaceutical chemistry, Paris, and member of the Paris Academy of Sciences, died on November 18, having nearly reached the age of ninety-one.

Lebeau began his career in chemistry as a student at the École de Physique et de Chimie, Paris, and his outstanding qualities were immediately appreciated by Prof. Étard. His early publications attracted the attention of H. Moissan, and when the latter was appointed to the chair of chemistry in the Faculté des Sciences at Paris, Lebeau was made director of his laboratory. His researches in inorganic chemistry, particularly with regard to fluorspar and fluorine, led to the degree of D.Sc. in 1898. During this period, he was also studying to become a pharmacist, and he achieved this object in 1899.

Lebeau was appointed to the chair of toxicology in 1908, which position he held until 1918. He deliberately orientated this subject towards industrial hygiene and became intensely interested in its medico-legal aspects. As a result, his services during the First World War were of outstanding merit, and in 1918 he succeeded Prof. Charles Moureu in the Berthelot chair in the Collège de France. His great energy and outstanding ability were then directed towards the subject of pharmaceutical chemistry, and his efforts met with similar international recognition as they had already done in the realm of toxicology. His treatise on pharmaceutical chemistry has passed through many editions and is accepted as a standard work on this subject.

As president of the Commission des Hautes Températures of the Centre National de la Recherche

Scientifique he was largely responsible for the outstanding success of this body, which resulted in the publication in 1924 of an important book entitled "Fours Électriques et Chimie". This work has attained international recognition.

Not unnaturally, the services of a scientist of such outstanding merit were in great demand, particularly in connexion with government and international committees. These services were given without restraint, and Lebeau made outstanding contributions during his connexion with the Commission des Études Chimique de Guerre, the Conseil d'Administration du Centre National de la Recherche Scientifique, the Commission Internationale des Poids Atomique, and the Société Chimique de France.

Prof. Lebeau's long life covered the period when the science of chemistry was expanding rapidly, a period which was characterized by the introduction of many new chemical concepts. He played his part in this new thinking and can be regarded as one of the architects of modern pharmaceutical chemistry. His career and devotion to the science should be a stimulant to all future students of chemistry.

W. H. LINNELL

Mr. P. R. Coursey

MR. PHILIP RAY COURSEY, of the Dubilier Condenser Co., Ltd., died on January 3. Mr. Coursey, who was born in 1892, was educated at University College, London, and became assistant to Sir Ambrose Fleming at the College. During the First World War he was Admiralty inspector of wireless telegraphy in H.M. Auxiliary Patrol, and in 1919 became technical research assistant at H.M. Signals School. During