

methods of analytical control; this led ultimately to numerous scientific publications by various members of his scientific staff.

It was a natural corollary to his achievement in setting up the manufacture of laboratory chemicals that Hill worked assiduously in the advocacy of the Safeguarding of Industries Bill, and later for having laboratory chemicals included in the list of goods scheduled under the Act.

Hill's family had long been connected with the Salters' Company; it was during his grandfather's mastership that the Salters' Company set an early example in founding research scholarships. Hill, who became master of the Salters' Company at an early age, was largely instrumental in the formation of the Salters' Institute of Industrial Chemistry, which has as one of its main objects the provision of funds for the training of men entering industrial chemistry.

Hill filled many public offices in connexion with pharmacy and pure and applied chemistry. His published addresses bear witness to his clear thinking and the high standards at which he always aimed. He became chairman of the Association of British Chemical Manufacturers and of the Wholesale Drug

Trade Association, president of the British Pharmaceutical Conference, vice-president of the Institute of Chemistry and of the Society of Public Analysts.

The fine-chemical industry of Great Britain, which has undergone great growth during his life, has benefited by his notable contribution to its development.

FRANCIS H. CARR

WE regret to announce the following deaths:

Dr. L. Doljanski, head of the Department of Experimental Pathology, The Hebrew University, Jerusalem, on April 13.

Mr. R. Murdin Drake, O.B.E., joint manager of the Association of British Chemical Manufacturers, on November 21, aged forty-five.

Sir John Fryer, K.B.E., F.R.S., secretary of the Agricultural Research Council, on November 22, aged sixty-two.

Mr. J. E. Kingsbury, a founder of Standard Telephones and Cables, Ltd., and an active member of the Society of Telegraph Engineers and later of the Institution of Electrical Engineers, on November 4, aged ninety-three.

NEWS and VIEWS

Nobel Prize for Physics:

Prof. P. M. S. Blackett, F.R.S.

THE Nobel Prize for Physics, for the year 1948, has been awarded to Prof. P. M. S. Blackett, of the University of Manchester. The most important of Blackett's contributions to experimental physics have been made with the Wilson expansion chamber. After the discovery of the artificial transmutation of some of the light elements by Rutherford in 1919, it became important to make a detailed study of individual disintegrations, and this could only be done with the Wilson chamber. In order to observe the transmutation of a nitrogen nucleus, it was necessary, however, to consider making many thousands of photographs. For this purpose, Blackett developed the automatic expansion chamber. The successful design and operation of this elaborate instrument, in which the many operations involved in taking a single photograph were made mechanically, in an ordered sequence many times repeated, represented a technical achievement of the highest order. With this instrument, Blackett secured the classical photographs, now familiar to many generations of physics students, showing the disintegration of nitrogen by fast α -particles; and many other examples of nuclear processes.

The experience in design and operation gained with the automatic expansion chamber formed the basis for the next technical advance, the development of the counter-controlled Wilson chamber. If an ordinary chamber is expanded at random, the chance of observing the tracks of particles of the cosmic radiation is very small—in the case of apparatus of conventional design operated at sea-level. In collaboration with G. P. S. Occhialini, Blackett therefore arranged that the expansion should take place only when one or more particles had passed through the chamber. This was secured by a 'trigger' device which operated only if a particle passed through both of two Geiger counters, placed one above and one below the chamber. In this way the beautiful photographs of showers of positive and negative electrons—

the 'soft' component of the cosmic rays—were obtained. The principle thus introduced, of combining the particular features of the Wilson chamber with those of the Geiger counter in a single apparatus, continues to be one of the most fruitful methods in the physics of the cosmic radiation. Blackett was also a pioneer in the development of apparatus for studying the deflexion of cosmic ray particles in Wilson chambers operated in strong magnetic fields—a method of great importance for the development of our knowledge of the momenta of cosmic ray particles. This present recognition of his distinctive and original contributions to physics will be welcomed everywhere.

Centenary of H. A. Rowland

NOVEMBER 27 marks the centenary of the birth of Henry Augustus Rowland, one of the most distinguished men of science that the United States has produced. Born at Honesdale, Pennsylvania, on November 27, 1848, Rowland was the son of a clergyman, and at the age of sixteen, after being allowed to abandon his classical studies, he devoted himself to science. He studied to be a civil engineer at the Rensselaer Polytechnic Institute at Troy and graduated in 1870. During the next few years he successively served as a railway engineer, taught in the Wooster College and lectured as assistant professor at the Rensselaer Institute. On April 3, 1876, he became the first professor of physics at the newly created Johns Hopkins University at Baltimore, having the previous year visited Europe and worked for a time under the great Helmholtz. Rowland retained the professorship until his death, adding lustre to the University by his own brilliant researches and by the band of devoted workers he gathered around him.

Rowland's greatest researches were those on the determination of the mechanical equivalent of heat, the determination of the ohm and the study of the solar spectrum. In 1882 he described to the Physical Society his celebrated diffraction grating which placed in the hands of the spectroscopist a new and