

sulphides present in its depths, encouraged his views as to the organic origin of petroleum, views which he supported with experimental work on the thermal decomposition of sapropelite, a substance of algal origin deposited in vast quantities on the shores of Lake Balkhash.

Zelinskii's first paper appeared in the *Journal of the Russian Chemical Society* when he was a student in 1884, and in the sixty-seven years that followed he published more than five hundred others, including many with some hundred and forty of his students. On three occasions he was awarded the highest honour of the U.S.S.R.—the Order of Lenin. He also received numerous other honours from the government of the U.S.S.R., including the title of Hero of Socialist Labour.

S. F. BIRCH

WE regret to announce the following deaths :

Dr. W. R. Cunningham, librarian of the University of Glasgow and keeper of the Hunterian books and manuscripts, on October 25, aged sixty-three.

Prof. Colin G. Fink, recently head of the Division of Electrochemistry, Columbia University, and president in 1917 of the Electrochemical Society in the United States, aged seventy-two.

Mr. H. J. Hornby, chairman of A. Gallenkamp and Co., Ltd., and chairman during 1941–43 of the British Laboratory Ware Association, Ltd., on November 2, aged sixty-eight.

Prof. E. Piwowarsky, professor of general metallurgy and director of the Institute for General Metallurgy and Foundry-work in the Technical High School, Aachen, aged sixty-one.

## NEWS and VIEWS

### Nobel Prize for Physics for 1953 :

Prof. F. Zernike

THE work of Prof. F. Zernike, who has been awarded the Nobel Prize for Physics for 1953, includes many distinguished contributions in fields other than optics, but his successes in this branch of physics alone have been sufficient to earn him an international reputation. His serious interest in optics seems to have started some twenty years ago. In 1934 he published a diffraction theory of the Foucault knife-edge test for the figure of astronomical telescope mirrors. This work was notable on two counts: for the discovery of the so-called circle polynomials (now widely, and rightly, known as Zernike polynomials), and for the introduction of the method of phase contrast. Almost immediately Zernike realized that the same method could be used in the other extreme of optical instruments, namely, the microscope. The fruitful results of this invention, especially in biological work, are both sufficiently widely known and appreciated to require no comment. This being so, it is easy to forget Prof. Zernike's other contributions to optics. His work, and that of his pupils, on the diffraction theory of aberrations, the experimental study of these effects, the use of the method of the 'coherent background' in diffraction, and the theory of partial coherence, equally constitute an outstanding contribution to our present knowledge of optics. Prof. Zernike is well known in Britain. He has delivered the Thomas Young Oration of the Physical Society, and in 1952 he was awarded the Rumford Medal of the Royal Society.

### Royal Society : Award of Royal Medals

H.M. THE QUEEN has been graciously pleased to approve recommendations made by the Council of the Royal Society for the award of the two Royal Medals for 1953 as follows: to Sir Paul Fildes, O.B.E., F.R.S., for his classical researches on growth factors for bacteria and for laying the foundation of work leading to a rational approach to chemotherapy; to Prof. N. F. Mott, F.R.S., for his eminent work in the field of quantum theory and particularly in the theory of metals.

### Metrology at the National Physical Laboratory, Teddington : Mr. F. H. Rolt, O.B.E.

MR. F. H. ROLT, who has retired from his post as the superintendent of the Metrology Division of the

National Physical Laboratory, Teddington, has been associated since 1912 with the laboratory's work in the field of engineering metrology and standardization. During the First World War the widespread application by the Ministry of Munitions of the principles of interchangeable manufacture placed enormous demands upon the Laboratory for verifications of reference standards and gauges, and for the development of methods and apparatus for the precise measurement of dimension and shape. Appreciation of the economic advantages of quantity production gave rise later on to studies in the Metrology Division of the basic principles underlying suitable design of interchangeable components and the efficient control of such products by accurate gauging or measurement during manufacture. Mr. Rolt was responsible for the prosecution of many of these studies, and for several developments of methods and apparatus now widely adopted in the practice of engineering inspection. His "Gauges and Fine Measurements", published in two volumes in 1929, achieved world-wide renown and appreciation. In 1941 he was seconded to the Ministry of Supply (Machine Tool Control), in which he served until the end of the Second World War, first as director of gauges and measuring instruments and later as director of jigs, tools and gauges. For these services he was made O.B.E. He succeeded Mr. J. E. Sears as superintendent of the Metrology Division in 1946. Mr. Rolt has contributed much to the work of numerous committees of the British Standards Institution and of other organizations, both national and international, concerned with the establishment of engineering standards. He took a leading part in the post-war American-British-Canadian conferences, one of which led to the adoption of the unified screw thread. He is also keenly interested in the education of engineering students and apprentices, and was instrumental in introducing engineering metrology as a subject for the Higher National Certificates in mechanical and production engineering.

Dr. H. Barrell

MR. ROLT is being succeeded by Dr. H. Barrell. Dr. Barrell was educated at the Royal Grammar School, High Wycombe, and the Royal College of Science, London, where he studied physics and later specialized in spectroscopy. He joined the staff of the National Physical Laboratory in 1923, and was associated