

NEWS and VIEWS

Royal Society : Royal Medals

H.M. THE KING has approved of the following awards of the Royal Society :

Royal Medal to Prof. D. Brunt, professor of meteorology at the Imperial College of Science and Technology, London, in recognition of his fundamental contributions to meteorology.

Royal Medal to Dr. C. R. Harington, director of the National Institute for Medical Research, in recognition of his work in the analysis and synthesis of thyroxine, and in immunological chemistry.

Nobel Prizes for Physics for 1943 and 1944

THE Nobel Prizes for Physics for 1943 and 1944 have been awarded to Prof. Otto Stern, research professor in the Department of Physics at the Carnegie Institute of Technology, Pittsburgh, and Prof. I. I. Rabi, professor of physics in Columbia University, New York, respectively.

Prof. Otto Stern

Stern has developed the method of molecular rays into a powerful tool for the investigation of the properties of ultimate particles. His first application was the experimental verification of Maxwell's law of velocity distribution in gases. Then followed his famous work, in collaboration with Gerlach, on the deflexion of atoms by the action of an inhomogeneous magnetic field on the atom's magnetic moment; this provided direct evidence for one of the strangest statements of quantum mechanics, the so-called quantization of direction. By an almost incredible refinement of this method, Stern succeeded in detecting and measuring the (about 2,000 times smaller) magnetic moments of some nuclei, the proton and the deuteron. It is this work for which he has now been awarded a Nobel Prize. But he used his method also for other purposes. He gave the most striking proof for the wave nature of ordinary matter, as formulated by de Broglie, in producing interferences by rays of ordinary matter, hydrogen and helium, reflected by crystal surfaces. Stern has also published important theoretical papers on thermodynamics and quantum theory. He was professor of physical chemistry at Hamburg, and when he was compelled to leave Germany in 1933 he became a member of the staff of the Carnegie Institute of Technology, Pittsburgh, Pennsylvania.

Prof. I. I. Rabi

Rabi is an American who worked for some time with Stern in Hamburg and is now professor at Columbia University, New York. He developed the same ray method to a considerable precision for the measurement of the magnetic properties of atomic nuclei. His apparatus is based on the fact that one can produce ordinary electromagnetic oscillations of the same frequency as that of the Larmor precession of atomic systems in a magnetic field. By an ingenious application of the resonance principle he succeeded in detecting and measuring single states of rotation of atoms and molecules, and in determining the mechanical and magnetic moments of the nuclei. A Nobel Prize has been awarded to him for his great contribution to our knowledge of nuclear magnetism.

Nobel Prize for Chemistry for 1943:

Prof. G. C. von Hevesy, For.Mem.R.S.

PROF. G. VON HEVESY, of the University Institute for Theoretical Physics, Copenhagen, has been awarded the Nobel Prize for Chemistry for 1943. Prof. von Hevesy's earlier work was mainly in the field of radioactivity and radioactive isotopes. He determined the valency and electromotive series of the radio-elements, and established the identity of radium D with lead. Investigations on the 'self-diffusion' in liquids and solids introduced the use of radio-elements as indicators in following the movements of common elements with which they are isotopic, and this technique he has developed in chemistry, physics and biology, where the use of 'tracer elements', which now include artificial radio-elements, has become very important in the elucidation of reaction mechanisms, and in following the processes of metabolism. Prof. von Hevesy's most recent work is in this field. His work with Brönsted on the separation of isotopes of mercury and chlorine by diffusion has become classical.

In 1923 Coster and von Hevesy announced the discovery of a new element, which they named hafnium (after Copenhagen), in zirconium minerals (*Nature*, 111, 79; 1923). The discovery was made by the X-ray spectrum method, and in later publications the use of this method in quantitative chemical analysis was developed. The search for hafnium in various minerals led to a broader interest in the distribution of the elements in the inorganic and organic worlds, and in problems of geochemistry.

Radioactivity was enriched in some later work on the activity of potassium and samarium, and the detailed study of the radioactivity of the rare earths. Apart from the discovery of hafnium, Prof. von Hevesy is perhaps best known for his work in the field of general radioactivity (in which chemical methods and interests have predominated), and on radioactive indicators, but his researches have spread into many fields, all of which have been enriched by his discoveries.

The Nobel Prize for Chemistry for 1944 has been reserved.

Vladimir Komarov, President of the U.S.S.R. Academy of Sciences

VLADIMIR KOMAROV, president of the Academy of Sciences of the U.S.S.R., celebrated his seventy-fifth birthday on October 14. It also marked the fiftieth anniversary of his scientific work. Komarov holds many posts; thus in addition to being president of the Academy of Sciences of the U.S.S.R., he is chairman of the Council for Studying the Production Potentialities of the U.S.S.R., chairman of the All-Union Botanical Society and the All-Russian Society for the Conservation of National Resources, head of the Department of Geography in the Botanical Institute of the Academy of Sciences, and head of the Botanical Department of the University of Leningrad. In addition, he is editor of leading Soviet periodicals on biology and author of more than two hundred published works, including a number of monographs, text-books and papers of botanical interest. Komarov has taken part in, organized and directed nine large research expeditions in Central Asia, the Far East and Kamchatka, and has become the leading authority on the flora of Asia and particularly of the Far East. More than sixty plant species have been named after him.