chemistry at the University of Strasbourg, and after one year there he was appointed as an extra professor at Karlsruhe Technical High School (1908–12). After holding an ordinary professorship at the Federal Technical School, Zurich (1912–26), he was appointed to a professorship at Freiburg im Breisgau in 1926—a post which he held until he retired on reaching the age of seventy.

In his early years, Staudinger worked in the field of classical organic chemistry and with its well-defined substances which could be fully characterized by standard methods. The outcome of this work was the well-known monograph on *The Chemistry of the Ketenes*. It was not until the early 1920's that he selected as his field—at that time scarcely thought to be worth the consideration of an organic chemist of his reputation—the study of natural organic substances of high molecular weight. In this area he performed, with numerous collaborators, an enormous amount of experimental work on materials varying from natural materials, such as starch and cellulose, to synthetic substances, such as polystyrene and polyaldehydes, applying purely organic methods. He demonstrated that large linear molecules could be formed from small molecules by ordinary chemical reactions and, what is more, maintain their individuality even when they were subjected to chemical modification. Through this work he built up information for the foundation of the new branch of macromolecular chemistry. In one of his first publications he deplored the prevailing tendency to formulate polymeric substances as association compounds held together by "partial valencies" and he proposed the chain formulations of polystyrene and polyformaldehyde which are the ones accepted at the present time. He also advocated the long-chain structure of rubber and attributed the colloidal properties of these substances entirely to the size of their primary valence molecules. His chemical studies left no doubt as to the linear chain-like structures of these substances which he called 'macromolecules'.

In a paper published in 1926, Staudinger remarked that "many of the properties of synthetic high polymers are so similar to those of natural origin that they may be used as substitutes for them. It is not improbable that sooner or later a way will be discovered to prepare artificial fibres from synthetic high molecular-weight products because the strength and elasticity of natural fibres depend exclusively on their macromolecular structure". How brilliantly this prediction was fulfilled in his lifetime is commonplace knowledge. Staudinger's views were not widely accepted at once. Many of his colleagues in high academic positions remained for a long time unconvinced. They did not approve either of his methods and results or the manner in which he elevated his own working field to a "new branch of organic chemistry". Many will recall the numerous occasions in the 1920's and early 1930's when the history of polymer science was made in the eloquent clashes between Staudinger—who relentlessly championed the macromolecular hypothesis—and those who believed that polymers were aggregates of small molecules. One of his best-known contributions was the establishment of a relationship between the viscosity of a solution of a high polymer and its molecular weight. As with other aspects of his work, much doubt and controversy centred on the so-called viscosity law which Staudinger proposed in 1930. The difficulties, however, were soon resolved, and the utility of the later modified relationship between viscosity and molecular weight played an important part in the determination of molecular weights and in the development of the physical chemistry of high polymers.

Staudinger's importance in the development of polymer chemistry is now universally accepted. His prodigious output of research and publications and his never-failing enthusiasm in a field in which he had to fight at every step to establish new concepts or justify new methods places him first when it comes to the question of who contributed the greatest number of facts and figures to the new macromolecular chemistry.

In addition to his outstanding scientific achievements, Staudinger was also a great teacher, who succeeded in transmitting his new ideas and creative thinking to the very large number of students always working in his laboratory. These students carried with them into academic life and industry the convictions of their master, and a generation of leaders in polymer science emerged.

Staudinger's many honours included the Nobel Prize for Chemistry in 1953; honorary degrees of Karlsruhe (1950), Mainz (1951), Salamanca (1954), Zurich (1955) and Strasbourg (1959); and honorary membership of numerous academies of science and scientific societies. He was awarded the Leblanc Medal of the French Chemical Society (1931), Cannizzaro Prize, Rome (1933), and Goldene Ehren-Medaille des Vereens der Textilchemiker (1962). He was made an honorary citizen of Freiburg in 1955.

C. E. H. Bawn

NEWS and VIEWS

Royal Society of Edinburgh : Elections

At the annual statutory meeting of the Royal Society of Edinburgh, held on October 25, the following were elected to the Council of the Society for the 183rd session: *President*, Prof. J. N. Davidson; *Vice-Presidents*, Prof. C. F. Davidson, Dr. M. Ritchie, Prof. J. Allen, Dr. G. H. Mitchell, Prof. A. E. Ritchie, Prof. C. H. Waddington; *General Secretary*, Prof. N. Feather; *Secretaries to Ordinary Meetings*, Dr. A. F. Brown, Prof. W. L. Weipers; *Treasurer*, Dr. J. R. Peddie; *Curator of Library and Museum*, Dr. R. Schlapp; *Councillors*, The Right Hon. Lord Balerno of Currie, Dr. J. M. Jackson, Prof. I. N. Sneddon, Prof. P. E. Weatherley, Dr. Neil Campbell, Prof. P. L. Pauson, Prof. J. R. Raeburn, Prof. J. D. Robertson, Prof. P. W. Brian, Dr. H. E. Butler, Sir David Lowe, Dr. D. G. Sopwith.

Metallurgy in the University of Oxford : Prof. W. Hume-Rothery, O.B.E., F.R.S.

Prof. W. Hume-Rothery will retire from the Isaac Wolfson chair of metallurgy in the University of Oxford on September 30, 1966. His long and distinguished scientific career has been spent almost entirely in Oxford, and the date will be a sad occasion for his friends and colleagues. Prof. Hume-Rothery intended to make his career in the Army (and would surely have become a general !), but a serious illness as a young man left him totally deaf, and he turned to science instead. After taking an Oxford first in chemistry, he worked for his Ph.D. at the Royal School of Mines, and then returned to work in Oxford in 1926. Using his chemical background to great advantage, he began there the work on the theory of alloy formation for which he is so renowned, and the Oxford school of alloy chemistry eventually grew into the present Department of Metallurgy. In 1957 he became the first professor of metallurgy in Oxford, and the choice was so unquestionable that the University dispensed with the formality of an election. Throughout his career, "H. R." has played a leading part in associating metallurgy with solid-state physics and chemistry. He pioneered the scientific approach to metallurgy, not only by his own research, but also by his brilliant expositions of basic theory in books which