

Obituaries

Professor W. R. A. D. Moore

PROFESSOR W. R. A. D. MOORE, MBE, BSc, PhD, FRIC, died in Bradford on September 7 at the age of 58. He had been in failing health for some months, but had presided over the Board of Studies in Physical Sciences at its July meeting, and also attended the Senate that followed. It was clear to his colleagues at this time that he should take things a little easier; it is possible that his enthusiasm for his subject of polymer chemistry led him to ignore his physical difficulties, but it at least left him working to the end.

Moore originally qualified as a pharmacist and was employed by the firm of Savory and Moore. Later he obtained a first class honours degree in chemistry in the University of London and joined Electronics Laboratories, London, as a research chemist in 1939. During the war he was an experimental officer with the Armaments Research Department of the Ministry of Supply.

It was probably from his work on explosives that Moore developed an interest in plastics generally, and while working on this topic he moved to the Bradford Technical College as lecturer in physical chemistry working with Professor P. M. Barrer, who was then head of the Department of Chemistry. From this point Moore worked with great enthusiasm on polymer chemistry, and built much of his own equipment for viscosity and allied studies of polymer solutions. Particularly at this time he was interested in cellulose and its derivatives, nitrates and acetates. Publications poured out of his laboratory on these subjects and as his field of interest in polymers grew so did his range of publications.

He brought his enthusiasm to bear on the research programmes when the college became an institute of technology and later a university. He was appointed reader in polymer chemistry in the university and later to a chair in that subject. During his institute and university period, Moore collaborated with many of the polymer manufacturers and users and built a strong Postgraduate School of Polymer Science and was made chairman of the Board of Physical Sciences and a member of the Senate, and had both a national and international reputation as a research worker and teacher. His enthusiasm was transmitted to his colleagues and students and it was this enthusiasm which enabled him to work with unflinching consistency.

He had wide contacts in his subject. He was chairman of the Plastics and Polymer Group of the Society of Chemical Industry and consultant to Esso Limited, and was also active in the Royal Institute of Chemistry, the Society of Dyers and Colourists, the British Association and the Bradford Chemical Society. These scientific interests dominated his life; he will be remembered for his dedication to polymer science.

Professor W. Hume-Rothery

THE death of Professor William Hume-Rothery on September 27 came as a sad blow to all who had ever been in contact with him, but it was particularly sad for those who had worked with him or had benefited from his personal kindness or professional assistance. He was 69 and had suffered a short illness.

By his research and writing Hume-Rothery was the founding father of scientific metallurgy and this was a very personal achievement, produced with the help of just a few research students and a very small amount of money. He was originally intended for the Army and entered the Royal Military Academy, Woolwich, but his military studies were cut short by an illness which left him completely deaf. However, he immediately moved to the study of chemistry at Magdalen College, Oxford,

where he was awarded a first in natural science. He then moved to Sir Harold Carpenter's department at the Royal School of Mines where he studied metallurgy and obtained his PhD. The first published paper from the Royal School of Mines revealed an Oxford chemist taking a critical look at the not too scientific bases of the metallurgy of the day, and the next few years, back in Oxford, saw a wonderful continuation of this process, in the course of which metallurgy emerged with the status of a science in its own right.

Hume-Rothery's research will always be associated with the rules and factors which appear to govern the alloying behaviour of metals in binary and ternary systems, and, indeed, this was his primary contribution. His research interests, however, ranged widely through such topics as X-ray diffraction studies, the development of techniques for high and low temperature investigation, the study of stresses in electrodeposits and the structural changes which could arise from cycles of heat treatment. During the Second World War his laboratory was particularly concerned with investigating the structures of aluminium-based alloys for the Ministry of Supply and in the post-war years his attention turned to the refractory alloys.

Hume-Rothery's influence on the development of metallurgical studies was exerted chiefly through his monographs and textbooks which were acknowledged both by metallurgists and by chemists as masterly expositions of alloy theory. Those who followed him extended his approach to the more physical and mechanical aspects of metallurgy and one of the lasting results of his life-work can now be seen in the extension, by various authors, of scientifically based metallurgical texts to all aspects of the subject, following his example.

It was not until the Isaac Wolfson chair was instituted in 1958 that Hume-Rothery received the highest academic position, but he had previously been honoured by the Fellowship of the Royal Society and by a host of medals from learned and professional societies. He retired from his chair in 1966, but in no sense did he withdraw from active participation in his subject. He undertook a range of editorial work and continued to engage in a voluminous scientific correspondence. His last monograph was catalogued in the library of the University of Manchester on the day of his death—in harness.

Outside science, Hume-Rothery was a keen fisherman and as a water-colour painter he had a particular feeling for the structure of mountain masses, but his basic characteristic was that he enjoyed life and this enjoyment spread to those about him.

Correspondence

Why do Students Fail ?

SIR,—With reference to your article in *Nature* on the University Grants Committee Enquiry into Student Progress 1968 (219, 548; 1968), I would have been very interested to have been given more information on the part of the course which was most often failed by students. I very much suspect that in the majority of cases it was the examinations of the additional or subsidiary subjects which were failed, hence most of the students leaving early on in their courses, as that is when these examinations take place.

I feel very strongly that, although too much specialization is, of course, a bad thing, it is nonsensical to lose a specialist because he has no interest in the other subjects offered to him. Scientists in particular often come to university knowing exactly where in their subject they are hoping to specialize, and they spend at least the first two years forcing themselves to master other subjects, and