

OBITUARY NOTICES.

HARRY THORNTON CALVERT.

1878—1947.

HARRY THORNTON CALVERT was born on May 3rd, 1878, in Leeds, Yorkshire, where he received his early education before proceeding to the Yorkshire College, now the University of Leeds, to study in the Honours School of Chemistry. Though only twenty years of age at the time of graduation in 1898, he had shown such promise as a student that he was at once awarded an 1851 Exhibition, and spent the next three years at the University of Leipzig, where he took the Ph.D. degree. His research at Leipzig was concerned with the dielectric properties of hydrogen peroxide.

After returning from Leipzig, Calvert was for a short time a demonstrator in chemistry under Professor Arthur Smithells at the University of Leeds. He then moved to Hull to serve as Chemist to Messrs. Reckitt & Sons, where he obtained valuable experience in chemistry applied to industry and an insight into industrial problems from many angles.

In 1903 he was appointed Chemist to the West Riding of Yorkshire Rivers Board, a joint committee of the Local Authorities of the area, which had been formed to administer the Rivers Pollution Prevention Acts. This change marked the beginning of his interest in the problems of water supply, sanitation, and prevention of river pollution. Calvert and Maclean Wilson, who was then Chief Inspector of the Rivers Board, proved to be ideal partners in guiding this important work. They were not inspectors in the narrow sense relying on legal authority: they studied in detail the problems with which the managers of local sewage works and industrial concerns were confronted in the disposal of waste liquids, and assisted in finding practicable methods of overcoming the difficulties, while at the same time having in mind the need to decrease the pollution of the local rivers, some of which were in a deplorable condition. It was after some years together on this work that Wilson and Calvert collaborated in writing the book "Trade Waste Waters—Their Nature and Disposal", which has long been accepted as the authoritative work on the subject. Calvert's outstanding investigations in this field were recognized in 1915 by the award of the degree of D.Sc. of the University of Leeds.

During the First World War, he was released on loan to the Department of Explosives Supply of the Ministry of Munitions. In his work in this Department, the wide knowledge he had acquired of a variety of chemical and other industries was of great value, and his success led to the award of the M.B.E.

In 1920 Calvert took up a new appointment as Chemical Inspector of the Ministry of Health, a post which gave him great scope for using his wide scientific and technical knowledge and his sound judgment. When the Water Pollution Research organization was established in 1927 under the Department of Scientific and Industrial Research he was the obvious choice as Director of Research, and he carried this responsibility while continuing his work for the Ministry of Health. With characteristic thoroughness, he steadily built up the work of the Water Pollution Research organization on a sure foundation. Every investigation, whether in the field of fundamental research in University Departments or in the nature of development work with large-scale installations in industrial establishments, was carefully planned before it was undertaken. Calvert was not interested in grandiose and costly schemes sketchily planned; and in consequence few research organizations can claim so much achievement in relation to the expenditure incurred as the Water Pollution Research organization. In all this work he had the full support of every member of the Research Board, for he had the power of inspiring interest and enthusiasm in all concerned, and in unobtrusively getting Boards, Committees, and staff working together amicably and efficiently.

On the outbreak of the Second World War in 1939 he was seconded to the Ministry of Supply as Deputy Controller of Sulphuric Acid, which post he retained until his retirement early in 1947 for reasons of health.

He will be remembered in his profession as an authority in the field of water supply and sanitation, not only in Great Britain, but throughout the world. Kind of heart and always ready to help, he made many close friends here, on the Continent, and in America.

In addition to his many scientific and technical papers and addresses in Great Britain, including chapters in the *Applied Chemistry Reports* and a Chadwick Public Lecture in 1926, Calvert was invited to give the Sedgwick Lecture in 1940 at the Massachusetts Institute of Technology, but owing to the war was unable to deliver the lecture. In 1944, he received the

Kenneth Allen award of the American Federation of Sewage Works Associations. He took a great interest in the Institute of Sewage Purification, of which he was President in 1927, 1928, and 1939. He was also a prominent Fellow of the Royal Sanitary Institute and of the Institution of Sanitary Engineers, a Professional Associate of the Institution of Water Engineers, and a member of the Society of Chemical Industry. He obtained the Associateship of the Institute of Chemistry in 1899 and the Fellowship in 1904, and had been a Fellow of the Chemical Society since April 22nd, 1903.

A. PARKER.

RICHARD CAYLEY GIFFARD MOGGRIDGE.

1915—1946.

RICHARD MOGGRIDGE was born on February 24th, 1915, and educated at Winchester and Balliol College, Oxford. After a short period of research in Oxford he worked until the outbreak of war with Professor Harington at University College Hospital Medical School. During the war he worked first at a Ministry of Supply Research Establishment, and later in other fields of scientific war research. At the end of the war he was appointed to the staff of Messrs. Courtauld's Research Institute at Maidenhead, but his work there was cut short by his sudden death on March 26th, 1946, at the age of 31.

This bare statement conceals a career of considerable achievement and great promise. Richard Moggridge came to Balliol in 1933, holding both the Frazer Scholarship from Winchester and an open Domus Scholarship. He did not take much part in the social life of the College, but his work in chemistry showed from the very beginning a high standard of all-round achievement, and his essays (written in a minute but beautifully legible hand) were models of accuracy and exposition. His first piece of research was carried out with Dr. A. G. Ogston before he took his degree examination, and dealt with the electrometric titration of vitamin B₁ (*Biochem. J.*, 1935, 29, 866). However, his chief interest was in pure organic chemistry, and his fourth year was spent with Dr. S. G. P. Plant in investigating some structural problems in the indole series (*J.*, 1937, 1125).

He was placed near the top of the first class in his final examination, and left Oxford in 1937 to take up a research post in Professor C. R. Harington's laboratory in the University College Hospital Medical School. His interest in biochemical topics had been kindled by his first piece of research in Oxford, and his chief work in London was also concerned with vitamin B₁, as it dealt with the synthesis of an aminothiazolepropionic acid related to this vitamin. This rather difficult piece of synthetic work was successfully completed (*J.*, 1939, 443), and a later paper on the action of yeast on the synthetic amino-acid (*Biochem. J.*, 1940, 34, 685) is of considerable biochemical interest. As a side issue to this synthetic work Moggridge carried out some experiments in the glutamic acid series (*J.*, 1940, 706), and he also collaborated with Dr. Neuberger in a physico-chemical study of the hydrolysis of methylglucosaminides, which provided contributory evidence as to their structures (*J.*, 1938, 745).

During this period Richard Moggridge showed an increasing grasp of his subject, both in practical skill and in versatility of outlook, and everything pointed to a distinguished scientific career in the future. He was very popular with his colleagues, and happy both in his work and in his marriage to Daphne Simpson, which took place in 1938. When the war came he did not feel justified in continuing with his academic research work, and, after a short period as a full-time air raid warden, in April 1940 he took up a position in the Chemical Defence Research Establishment of the Ministry of Supply at Sutton Oak. His work there involved materials which were mostly unpleasant and often dangerous, but he devoted himself to it with unsparing energy, without regard for comfort or even health. Matters were aggravated by war-time accommodation difficulties, and it seems likely that the strain of this period contributed to his sudden death some years later. His work at Sutton Oak gave rise to a series of post-war publications on derivatives of 2 : 2'-dichlorodiethyl sulphide and related substances (*J.*, 1946, 813, 815, 816, 1105; 1947, 530).

In 1942 he was transferred to a different type of war job, which proved more congenial though no less strenuous. He was engaged on research and development work in connection with the supply of special equipment and arms to underground movements in enemy-occupied Europe. It was often necessary to improvise mines, weapons, explosive charges, special fuzes, and initiating mechanisms at very short notice, and Moggridge was given the responsibility of devising and carrying out such "user" trials as were practicable under these conditions. Risks

had to be taken, but by great thoroughness and attention to detail he succeeded in carrying out an arduous task with conspicuous success. During 1943—45 a constant stream of supplies was provided for various countries, and in France in particular the partisan movement was able to assist materially in the first few critical days after D-day.

In August 1945 Richard Moggridge became Senior Organic Chemist in the newly founded research station of Messrs. Courtaulds, Ltd., at Maidenhead. Here his previous interest in proteins and amino-acids fitted in with fundamental problems of textile research, and he had planned a programme of work for himself and his collaborators. However, he had barely had time to get this work under way when he died, suddenly and unexpectedly, in March 1946 just before his son Robin's third birthday.

Richard Moggridge was liked and respected by all his associates for his integrity of mind and character and his consideration for others. His scientific ability was matched by an interest in many things outside science which grew as he got older. His chief loves were music and climbing, in both of which he was joined by his wife. His knowledge of music was wide, but it was particularly choral music in which he took an active part, first at Winchester and in the Oxford Bach Choir, and later in London and Richmond. His climbing (in the Alps and the British hills) was also much more than a technical accomplishment, being based on a real love of mountain scenery and country people.

The last year of his life contained a new element, which he would certainly wish to be mentioned here. In June 1945 he and his wife joined a group of choral singers at St. Martin-in-the-Fields, and from that time the Christian faith became an increasingly important part of his life. It seems likely that, had he lived, he would have become even more intimately associated with the Church. On April 9th, 1946, his friends at St. Martin's held a choral service there in memory of him, and the beauty and sincerity of that occasion showed how deep an impression he had made among his fellow Christians. One phrase from that service forms a fitting conclusion to this notice: to know Richard was to realise "how possible it is to have at one's side goodness unaware of its good, greatness that honestly believes it is small"

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R. P. BELL.