

OBITUARY.

Henry George Denham (1880-1943).

With the passing on 15th February, 1943, of Henry George Denham, M.A., Ph.D., D.Sc., F.I.C., F.R.S.N.Z., F.N.Z.I.C., Professor of Chemistry and Rector of Canterbury University College, chairman of the Council of Scientific and Industrial Research, and chairman or member of many other scientific and educational bodies, New Zealand has lost one of her foremost chemists and an administrator and organiser of scientific research of such outstanding ability that his influence will long be felt in the Dominion.

Born in Christchurch, New Zealand, on 14th July, 1880, he received his early education at the Sydenham School, where he soon distinguished himself by winning three scholarships, one to the Boys' High School, one to Christ's College, and one offered by the Education Board. Choosing the first, he proceeded to the High School, and on leaving school adopted teaching as a profession. He became a student at Canterbury College in 1901 whilst still teaching, and decided to study chemistry as his main subject when Dr. W. P. Evans was appointed to the chair of that subject in 1903. He won the Chemistry Exhibition and graduated B.A. in 1904 and M.A. with First Class Honours in Chemistry in 1905. He took the M.Sc. degree in 1906 on research work, and won the 1851 Exhibition Science Research Scholarship in the same year, and was thus enabled to proceed to Liverpool University to study under Professor F. G. Donnan, one of England's leading young physical chemists. After two years there he went to Heidelberg, in Germany, for a time to study under Professor Bredig, and then back again to Liverpool. His work during these years gained for him the D.Sc. of Liverpool and the Ph.D of Heidelberg.

He returned to New Zealand late in 1910, and spent the next year in the Chemistry Department of Canterbury College as a research student and honorary lecturer. After that, when looking for a more permanent appointment in his own country, he was tempted for a time to seek non-chemical posts, but fortunately for Chemistry and the future scientific development of New Zealand, he succeeded in 1912 in obtaining a post as lecturer in Chemistry in the University of Queensland under Professor B. D. Steele. Soon after the outbreak of war in 1914, Professor Steele went to England to take charge of a war industry, and Dr Denham became head of the Chemistry Department with the status of acting professor. At the end of the war he was rewarded with the rank of assistant professor, one of the first, if not the first, appointment of its kind in Australia.

In 1921 he was appointed, on the strong recommendation of Professor Donnan, to the Chair of Inorganic Chemistry in the University of Capetown. In the same year he published his well-known text book of Inorganic Chemistry. He had been at Capetown only two years, however, when he was offered and accepted an invitation to

return to his old University College at Christchurch to succeed his former teacher and professor, Dr. Evans, in the Chair of Chemistry, a post he still occupied at the time of his death. He rapidly gained a reputation as a teacher and lecturer, especially to the large first-year class, which, combined with his skill in lecture demonstrations, attracted a steadily increasing number of students, and made necessary considerable expansion of his department during the twenty years he occupied the chair. In 1941 he became Rector of Canterbury College, the most honoured position to which any professor of the College can aspire.

On his return to New Zealand in 1923 Dr. Denham became a member of the Philosophical Institute of Canterbury, and so also a member of the New Zealand Institute, now the Royal Society of New Zealand. He was a member of the Council of the Philosophical Institute of Canterbury for a number of years and its President in 1925. He was elected a Fellow of the Royal Society of New Zealand in 1933 in recognition not only of his own research work, but also of his already considerable contributions towards the organisation and administration of scientific research in this country.

Dr. Denham's personal contributions to the advancement of chemistry are recorded in over two dozen papers published for the most part in the *Journal of the Chemical Society*, with a few in other British and German journals, and are in the field of physical and inorganic chemistry. His earliest published work was on the temperature of combustion of methane on palladiumised asbestos. At Liverpool under Professor F. G. Donnan he applied the hydrogen electrode to the study of salt hydrolysis, and abnormal results in this field led him to study the formation of sub salts of divalent metals, investigations which he carried out mainly in Queensland. Some work on complex ions in copper solutions was also carried out in Liverpool, and his work under Bredig at Heidelberg was on the catalysis of the reaction between titanous and hydrogen ions. After his return to New Zealand in 1923 his rapidly increasing administrative duties soon interfered with his personal research work, but he continued to direct the researches of senior students along similar lines for many years.

His reputation as a chemist was acknowledged by his election to the original Fellowship of the Australian Chemical Institute in 1920, and of the New Zealand Institute of Chemistry in 1934; to the Fellowship of the Institute of Chemistry of Great Britain and Ireland in 1930; to the Presidency of the New Zealand Institute of Chemistry in 1934 and 1935; to the Fellowship of the Australian and New Zealand Association for the Advancement of Science, and to the Presidency of Section B (Chemistry) of this latter body for its Hobart meeting in 1928, and to the Liversidge lectureship for its meeting in Canberra in 1939.

Dr. Denham possessed to an unusual degree for a University man and a man of science an aptitude for administration which can fairly be described as a great gift, and which made him in Canterbury College and in the University of New Zealand a leader looked up to for advice on matters far beyond the realm of his own special

subject, and outside in the community one whose services were sought on governing bodies and committees of educational, scientific, and many other institutions.

From its inception in 1927 he was a member of the Academic Board, and from 1935 of the Senate of the University of New Zealand, and on both bodies he was looked to for guidance in all matters relating to science in the University. He was also convener of the Science Committee of the Academic Board for a number of years until his death. His interest in educational matters extended beyond the University to the schools, and he was made a Fellow of Christ's College, Christchurch, and hence a member of its governing body in 1932.

He was a member of the New Zealand Council of Scientific and Industrial Research from its establishment in 1926, and its chairman after the retirement of Sir George Shirlcliffe in 1934. During this period he took a very active part in the development of scientific control and research in connection with primary and secondary industries in the Dominion. He was active in the founding of the Wheat Research Institute in 1927, and chairman of its committee from its inception.

He was a member of the Board of 'Governors of Canterbury Agricultural College from 1928 to 1941, and its chairman from 1932 to 1935; a member of the Council of the New Zealand School of Agriculture from its foundation in 1937 to 1941; a member of the committees of the Dairy Research Institute and of the Wool Manufacturers' Research Association, and a member and former President of the Christchurch Rotary Club.

In 1936 he took a year's leave from his work in New Zealand and with Mrs Denham visited England and the United States of America. He devoted his time in these countries to making contact with old and new friends, and in investigating the many and varied research organisations in which he was so closely interested.

From the outbreak of the present war Dr. Denham took a direct part in the administration and policy of the defence section of the Department of Scientific and Industrial Research, and never spared himself in matters relating to the scientific aspect of the prosecution of the war.

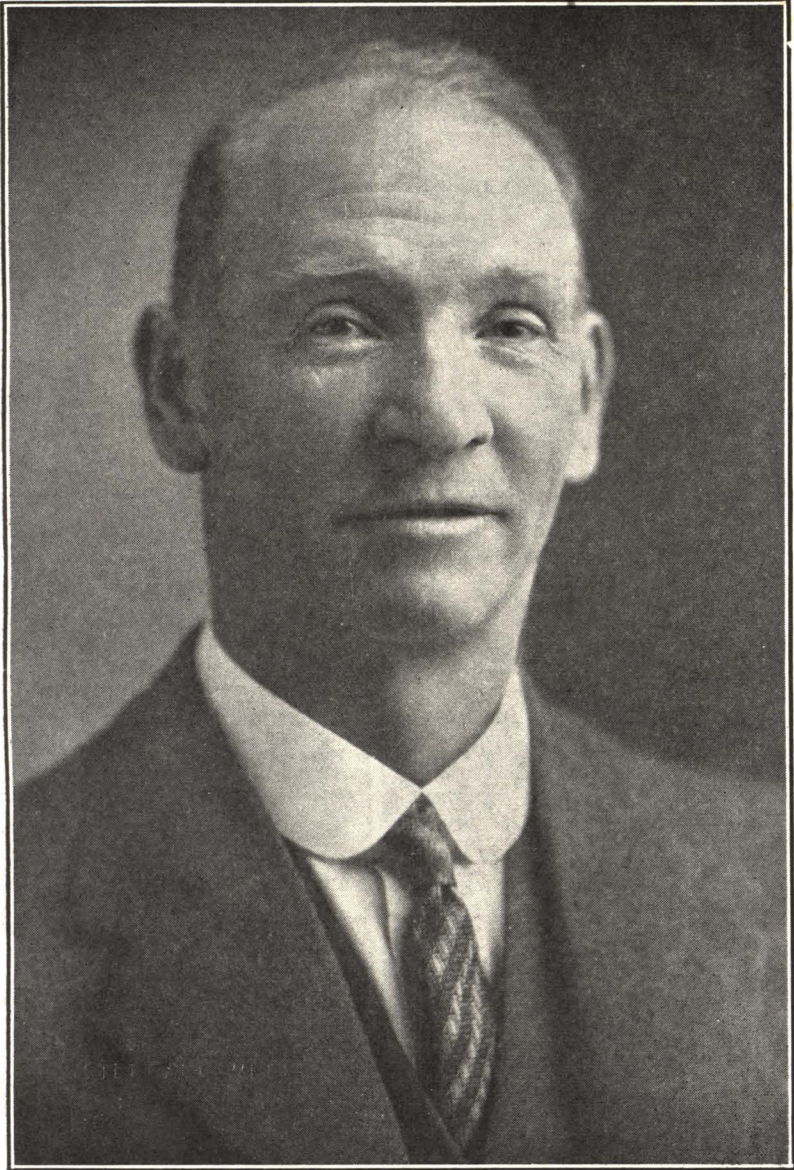
In spite of so many and such varied activities, he never overlooked the spiritual values of life, and was a much respected lay member of the Chapter of the Anglican Cathedral in Christchurch. He was a keen gardener, in spite of the small amount of time he could find for such activities, and also a keen golfer who found in the game a much needed and greatly enjoyed relaxation. It was in fact characteristic of him that in spite of his many and heavy responsibilities he was yet able to enjoy to the full the ordinary pleasures and humours of life.

Still a comparatively young man, apparently at the height of his powers and usefulness, Dr. Denham had only just begun to receive the honours which he so richly deserved. He had been the recipient of the Coronation and Centennial Medals for distinguished service, the one to the Empire and the other to the Dominion, and of the

Medal of the University of Liverpool Chemical Society, awarded for distinguished work by its graduates overseas. In January of this year he had conferred upon him the honorary membership of the Society of Chemical Industry, an honour granted only to very distinguished chemists and granted without restriction as to nationality, creed, sex, or colour. At no time have there been more than twenty honorary members of this Society throughout the world, and Dr. Denham was the first New Zealander to receive this honour, an honour of which he was justifiably proud, and one which placed him where he truly belonged, among the great chemists of his day. In the words of the President of the Society, Dr. Cullen: "His career illustrates to a remarkable degree the influence which a man of high scientific attainment can exert on the general life of a community when he is sufficiently public-spirited to sacrifice all thought of leisure."

With the passing of Henry George Denham this Dominion has suffered a loss which it is impossible to assess, but its people can take consolation in the knowledge that they will benefit from the fruits of his labours for years to come.

J. P.



The Late Dr. H. G. Denham.