

OBITUARY NOTICES.

ARTHUR GEORGE BLOXAM.

1866—1940.

ARTHUR GEORGE BLOXAM was killed as the result of enemy action on November 7th, 1940, in his 75th year. He was the son of Professor Charles Loudon Bloxam, of King's College, London, and nephew of Sir Frederick Abel. From 1882 he studied Chemistry under his father's successor, Professor J. Millar Thomson, at King's College, and continued there as demonstrator until, in 1887, he became chief assistant to Professor Edward Kinch at the Royal Agricultural College, Cirencester. In 1891, at the early age of 25, he was appointed head of the chemistry department of the Goldsmiths' Institute, New Cross, and, assisted by his cousin, Hugh Charles Loudon Bloxam, who died in July, 1940, made the new establishment an almost immediate success as an evening school for Honours students. His teaching was very thorough, somewhat ambitious for those days, and did credit to the well-endowed laboratories. He prepared the way for the brilliant researches in stereochemistry of his successor, the late Sir William Jackson Pope.

In 1897 Bloxam relinquished academic chemistry in favour of applying his ability to patent law, in which he became an outstanding authority, especially as related to the synthetic dye and chemical industries. He was President of the Chartered Institute of Patent Agents in 1926—1927, having previously served several periods as a Member of the Council of that Institute, and of its Board of Examiners. He was elected an Associate of the Institute of Chemistry in 1887, and a Fellow in 1891, and served as a Member of its Council, 1914—1915. He became a Fellow of the Chemical Society in 1888.

In 1902 Bloxam married Winifred, a daughter of Mr. A. B. Shapland of Barnstaple. They had a son and five daughters, one of whom, Mrs. McCormick, was killed at the same time as her father. Much of his leisure was spent with his family, which was undoubtedly his chief interest in life. He was reserved, but to those who knew him he was a man of strong personality, chivalrous, kind, courageous, and ready to help those who sought his advice or sympathy. His friendship was precious to those who were fortunate enough to enjoy it, to none more, perhaps, than to the writer. He was a keen Churchman on the Evangelical side of the Church of England, and took an active part in the lay administration of the churches with which he was connected. He was a voracious reader, especially of Dickens and the Victorian novelists. He took little interest in any hobby or sport except walking, which helped to foster his delight in the beauties of nature. He had a lively sense of humour.

His experience of the general principles and progress of chemistry was kept fresh by his editing five editions of "Bloxam's Chemistry," first in association with Professor Thomson, and later with Dr. S. Judd Lewis. Many paragraphs in "Bloxam" were contributed by him as an outcome of his experience of modern developments. He edited also "Laboratory Teaching," which reached a sixth edition, and was joint author with the late Mr. Bertram Blount of "Chemistry for Engineers and Manufacturers." Most of his contributions to current literature had reference to patent law and its association with chemical inventions (see *J. Soc. Chem. Ind.*, 1907, 573; 1916, 808; 1919, 324R) and to patents for dyes, etc., detailed in *British Chemical Abstracts*.

S. JUDD LEWIS.

EDWARD HAWORTH.

FRIENDS and colleagues will regret to know that Edward Haworth passed away on June 14th, 1940.

Haworth was born in the Blackburn neighbourhood, and educated at Burnley Grammar School. Thence he went to Owens College, where he graduated and continued as research assistant to Prof. W. H. Perkin, F.R.S.; later he was associated with Professors Dixon and Boyd Dawkins.

In January, 1898, having taken his M.Sc. degree, Haworth joined the staff of the Castner Kellner Alkali Co., Ltd., at Weston Point, Runcorn, under the late Harry Baker, who was formerly a distinguished assistant at Owens to Sir Henry Roscoe. He joined at a most interesting time, as the large-scale electrolysis of brine was then in an experimental stage.

Under Baker's direction Haworth undertook many interesting investigations, amongst which were a salt purification process for which he was later awarded his D.Sc. degree, and subsequently he shared in the development of Castner's sodium process and other processes which the Company investigated. Perhaps his most important work lay in the operation and development of the Mond gas process for the production of electrical energy from generators driven by large gas engines, on the scientific management of which depended the economic success of this process.

Sodium perborate was another of the subsidiary processes developed under Haworth's direction; also he was associated with the development of the only liquid chlorine plant existing in any of the allied countries at the time when the Germans first used poison gas.

Haworth will long be remembered and honoured for the prominent part he took in promoting the welfare of the firm's employees. He subsequently became the first chairman of the firm's highly successful recreation club, which provides amenities of a comprehensive character for both indoor and outdoor games.

Haworth's life was so much occupied with the affairs of the Company that he had no time to devote to other public duties, but his wife, who survives him, was secretary of the District Nursing Association and was the first woman magistrate in the town: his only son is on the staff of Imperial Chemical Industries, Lime Group, and his daughter (Mrs. Lea) also is associated with I.C.I., as her husband is a chemist with I.C.I.'s General Chemical Group.

J. W. MOORE.
E. O. GLOVER.

JOHN WILLIAM TOWERS

1855—1941.

A WELL-KNOWN and popular personality in the chemical industry of Lancashire has passed away by the death of J. W. Towers, who was a Fellow of this Society for nearly fifty years.

Towers was born at Bury on April 6th, 1855. He served an apprenticeship with a pharmaceutical chemist at Southport and later became a student under Professor Roscoe at Owens College, Manchester, after which he entered the laboratory of Messrs. John Hutchinson and Co. at Widnes. Here he was associated with Dr. Ludwig Mond and Mr. (afterwards Sir) John Brunner; in fact he worked at a bench next to that of Dr. Mond and was instructed by him in the tests used in the Mond sulphur recovery process. He was afterwards employed by the Atlas Chemical Co.

In 1882 Towers founded the firm at Widnes which bears his name and which under his guidance was gradually expanded in various directions so that when war broke out in 1914 he was able to supply many of the requirements of chemical industry previously imported from abroad. Meanwhile, he had many inventions to his credit, probably the best known being the Towers Respirator, which was designed for the protection of persons working in atmospheres containing noxious gases and was the forerunner of the gas-mask of today. He was keenly interested in photography and helped to found the Widnes Photographic Society, of which he was the first secretary; he was also a member of the Liverpool Amateur Photographic Association for half a century. In this connection it is interesting to note that he provided Hurter and Driffield with the special apparatus which they used in their researches in photography.

In spite of devoting exceptionally long hours to his business, Towers found time for public duties; he was one of the first members of the Widnes Chamber of Commerce and in 1929 was its chairman; he was also for a time a member of the Lancashire County Council. He was an Original Member of the Society of Chemical Industry and for many years regularly attended the meetings of the Liverpool Section, serving at various times on

the Committee. Members of the Society always welcomed him because of his unfailing cheerfulness; in fact the outstanding characteristics which remain in one's memory are his helpfulness in any matters on which he was competent to advise and his abundant good spirits; the large gathering at the service held in his memory at Allerton, near his Liverpool home, was a tribute to his popularity.

Towers leaves a widow, two daughters and a son, Mr. John Swainson Towers, who is now managing director of the company which his father founded. E. GABRIEL JONES.

FRANK WATSON YOUNG.

1852—1941.

FRANK WATSON YOUNG, whose death in his ninetieth year took place at Farnham on January 10th, was born at Dundee and was educated at the West End Academy, Dundee. He began his career as a "Druggist's Boy" and, showing an early interest in science, attended evening classes when these were instituted in Dundee. He later continued his studies at the Royal College of Chemistry and at the Royal School of Mines.

Young's first appointment was as lecturer in chemistry and physics at Dundee Young Men's Christian Association, where overflowing classes were a tribute to his gifts as teacher and organiser. In 1877 he was appointed first science master at Dundee High School; in this position, which he held for 23 years, he did much to advance interest in science in that city, and when the Technical Institute was founded he became its first Director of Studies. With the late Professor Carnelley, Young founded the Dundee and District Association for the Promotion of Technical Education and was thus brought into close relation with educational authorities in Scotland. In 1900 he was appointed one of H.M. Inspectors of Schools and continued in this capacity until, in 1917, he was entrusted with the organisation and administration of the scheme for the training of ex-servicemen in universities, technical colleges, and training colleges.

Young retired in 1924, and in the following year received the C.B.E. in recognition of the services he had rendered to Education. He was elected a Fellow of the Chemical Society in March, 1877.

FRANK G. YOUNG.