

and Associate Fellow of the Royal Aeronautical Society, and a Vice-President of the Engineering and Allied Employers National Federation and of the British Electrical and Allied Manufacturers Association.

Sir Richard was one time Deputy Lieutenant for the County of Bedford, a Justice of the Peace, High Sheriff of Bedfordshire, a member of the Bedfordshire County Council, and a member of other important National Societies, Associations, and Committees.

He was the Author of a Paper* for which he was awarded a Telford Premium in 1906, and presented many Papers to other scientific societies.

Elected an Associate Member in 1892, he was transferred to the Class of Members in 1908, and made a Life Member in 1953.

He is survived by two daughters.

FRANCIS HERBERT BRAMWELL, B.Sc.(Eng.), who was born on 9 May, 1890, died on 7 May, 1958.

After education at St Dunstan's College, London and the Central Technical College, London, where he graduated in 1909, Mr Bramwell was trained in the workshops of St Helens Colliery, Cumberland, and in the drawing office of Newton Chambers Ltd, London. From 1910-1914 he was a student assistant in the Aeronautics Division of the Engineering Department of the National Physical Laboratory. During this period he was the Author of a number of Papers on aeronautics.

Commissioned in 1914 as a Lieutenant in the R.N.V.R., attached to the R.N.A.S., Mr Bramwell became in 1916, Engineer and Designer in the Aviation Department of the Sunbeam Motor Co. Ltd, but in 1917 he was recalled to the Air Board and later to the Technical Department of the Ministry of Munitions as Section Director.

In 1920 he joined Brunner Mond and Co. Ltd, first as Superintendent on Research, the major task being the development of ammonia synthesis, and then as Deputy Chief Engineer on the design and construction of a new factory at Billingham. Transferred to the company's head office at Northwich in 1925, he was Research Manager for 2 years before a second transfer took him to the London head office of I.C.I. Ltd. In 1931, Mr Bramwell became head of the I.C.I. London Engineering Dept, and until 1938, was concerned with the design and building of ammonia manufacturing plants in South Africa and Czechoslovakia.

Moving, in 1938, to the General Chemicals Division of I.C.I. Ltd in Liverpool, Mr Bramwell became Chief Engineer and Delegate Director, which position he held until his retirement in May 1952. During the 1939-45 War, he was responsible for building chemical plants worth £20 million for the Ministries of Supply, Aircraft Production, and Food. From 1944 onwards he was engaged in planning large-scale extensions and reorganizations of various I.C.I. factories.

Mr Bramwell was for some time Chairman of the Council of the Electrical Research Association, and a member of the Board of the Power Gas Corporation Ltd.

He was a Member of the Institution of Mechanical Engineers, the Institution

* R. W. Allen, "Surface-condensing plants and the value of the vacuum produced". Min. Proc. Instn civ. Engrs, vol. 161 (1904-05), p. 169.

of Electrical Engineers, the Institution of Chemical Engineers, and also a Fellow of the Royal Aeronautical Society.

Elected an Associate Member in 1944, Mr Bramwell was transferred to the Class of Members in 1945.

HENRY JOHN GREEN, O.B.E., M.C., who was born on 10 October, 1883, died on 18 July, 1958.

He was educated at Tisbury School and Winchester Training College, and after working in Harrow as an Assistant Master from 1905 to 1908, he began his career in civil engineering when he was engaged in 1908 on a survey of the route for the Grand Trunk Pacific Railway through the Rocky Mountain Division, where he was also responsible for instrumental field work.

From 1910–14 Mr Green was Engineer-in-Charge of mountain survey and reconnaissance for the Grand Trunk Pacific Railway, where he was also responsible for the construction of 60 miles of the railway, costing £800,000, in the Mountain Division.

For a time preceding the outbreak of World War I, he was Survey and Construction Engineer when the war began, and enlisted in the Royal Fusiliers. In 1916, however, he was commissioned in the Royal Engineers, when he commanded the 10th Railway Company and 259 Railway Company, both engaged in railway construction in the forward areas of France and Belgium. His service took him through the Ypres, Arras, and Somme battles and he was awarded the M.C. in 1917.

In 1919, Mr Green became Chief Construction Engineer in France and Belgium for F. N. Pickett et Fils, where up to 1922 he was concerned with railways and other works worth £250,000, and in 1923 he was Resident Engineer for the Train Ferry Berth, Harwich.

It was in 1924 that Mr Green entered the services of the Metropolitan Railway Company as Assistant to the Chief Engineer. He was then responsible for the execution of various engineering works in progress at that time, and in 1926 was appointed Maintenance Assistant to the Chief Engineer, becoming Assistant Chief Engineer in 1931.

Two years later he became Acting Chief Civil Engineer, Metropolitan Railway, and in 1940 was appointed Chief Engineer (Civil) to the London Passenger Transport Board. When intensive air raids began he organized and supervised the whole of the work of repairing damage to underground railways and tram tracks. He relinquished this post for health reasons towards the end of 1943.

Mr. Green was elected a member in 1934.

BERTRAM DARELL RICHARDS, B.Sc.(Eng.), who was born on 7 April, 1882, died at Parracombe, North Devon, on 9 October, 1958.

He was educated at St Dunstan's College and later at London University, where he was awarded the degree of B.Sc.(Eng.).

From 1905–11 he was Senior Assistant to the Chief Engineer of the Bombay Port Trust, after a period of service on the Avonmouth Dock Works. He then became a Resident Engineer at the Tata Hydro-Electric Works, India, until 1920, when he became a consulting civil engineer, first in private practice and later with Sir William Halcrow and Partners. His work included investigations and reports on water-power schemes in India, Estonia, Brazil, Spain, New