

published work was "Applied Mechanics for Engineers." He delivered the Trevithick Memorial Lecture before the Institution in 1933, and the fiftieth James Forrest Lecture on "Mechanical Vibrations, their Cause and Prevention" ³ in 1944.

His interests were not, however, confined to the Institution of Civil Engineers alone, for not only was he Past-President of the British Waterworks Association but also a member of the councils of the Institution of Naval Architects, the Institution of Structural Engineers, and the Institution of Mechanical Engineers before which he delivered the Thomas Hawksley Lecture on "Gyroscopic Principles and Applications," in 1943.

Lady Inglis, whom he married in 1901, died on the 1st April, 1952; there are two surviving daughters.

JOHN ARTHUR SANER, who died on the 20th February at the age of 87, was born on the 11th August, 1864. He was educated privately and then for three years was an articled pupil of the late R. A. Marillier of the Hull Dock Company.

At the age of 21, he was appointed Assistant to the late L. B. Wells, Engineer to the River Weaver Trustees and, when the latter retired two years later in 1887, he became Resident Engineer and, in 1888, Engineer. In 1919 he was appointed General Manager in addition, and when he retired in 1934 his services as a consulting engineer were retained until the River Weaver Navigation Trust came under the control of the British Transport Commission.

During his forty-five years as Engineer, he was responsible for extensive schemes of construction and alteration involving bridges, locks, sluices, embankments, and docks. He installed electrical plant for swing-bridge operation, converted the Anderton Boat Lift from hydraulic to electrical power, and rebuilt the Hale Head Lighthouse. He also reported on schemes for improving the waterways from Birmingham and Stoke-on-Trent to the Mersey estuary, and inspected numerous reservoirs as required by the (Safety Provisions) Act of 1930.

His association with the Institution was long and active. Elected an Associate Member in 1890, he was transferred to full membership six years later. He was awarded a Telford Medal for a Paper entitled "On Waterways in Great Britain" in 1906, and subsequently wrote two other Papers and was awarded a Telford Premium. He delivered Vernon-Harcourt Lectures in 1913 and 1934, and was President of the Manchester Local Association of the Institution from 1905 to 1906.

In addition to the professional and engineering activities just outlined, he served on a variety of civil administrative boards and committees, ranging from the Upper Mersey Navigation Commission to the Boy

¹ Min. Proc. Instn Civ. Engrs, Vol. CCXVIII (1923-24, Part II), p. 225.

² *Ibid.*, Vol. 234 (1931-32, Part II), p. 358.

³ J. Instn Civ. Engrs, Vol. 22, p. 312 (Oct. 1944).

Scouts Association. From 1883 to 1921 he served continuously in the Volunteers and the Territorials, being gazetted Honorary Colonel in 1905. When placed on the retired list in 1921 he retained his seat on the Territorial Association. In 1937 he was appointed Deputy Lieutenant for the County Palatine of Chester. His services were recognized by the award of the Order of the Bath in the 1939 Birthday Honours.

He was married in 1892 to Miss E. M. Jameson, and is survived by his son and two daughters.

HENRY ALBERT CUTLER, who died at the age of 91 at Groomsport, County Down, on the 6th March, was born in South Hackney on the 22nd January, 1861. He was educated privately and at King's College, London, and was articled to the late A. T. Walmisley from 1879 to 1882.

For the next four years he worked as assistant to the Municipal Engineer of Barrow-in-Furness, in the drawing office and on a high-level bridge approach, the Newbarnes Valley sewer, and Roose Road. In 1886 he returned to Mr Walmisley's service as Chief Assistant in the latter's work on bridges and harbours, but three years later obtained a post as Resident Engineer in charge of the flood works and a part of the sewerage of Leicester. In 1891 he moved again, to be Borough Engineer of Rawtenstall, where he supervised the construction of tramways, and designed and built several public buildings. In 1897 he crossed to Ireland and for six years was City and Water Engineer of Cork, where he was responsible for the underpinning and restoration of the municipal buildings, the construction of tramways, and the execution of flood prevention and water filtering and pumping schemes.

In 1903 he left Cork to be City Surveyor of Belfast, where he remained until his retirement in 1926. Projects for which he was responsible at Belfast, apart from his routine work, included a drainage scheme for two districts, purification works for the sewerage for the whole city, and the installation of tramways and their power supply.

Mr Cutler was elected an Associate Member of the Institution in 1886, and transferred to full membership in 1905. He was a Member of Council from 1924 to 1927. In 1886 he was awarded a Miller Prize for a Paper read before Students of the Institution, and about that time was co-author with Edge of a book "Curve Tables."

CORRIGENDUM

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p. 298, line 3 from bottom, *for* "stream" *read* "stress"