

Nottingham Suburban Railway, a line of 4 miles on which are no less than four tunnels and several heavy iron bridges. On the completion of that work, he became in 1888 Resident Engineer for Messrs. Parry and Story on No. 1 contract of the Dore and Chinley line of the Midland Railway, which, although only 21 miles in length, reduces the distance between Sheffield on the one hand and Manchester and Liverpool on the other by no less than 32 miles in comparison with the old route round by Ambergate. The section of which he had charge was $10\frac{1}{2}$ miles in length and included the Totley Tunnel, connecting the valleys of the Sheaf and Derwent. This tunnel is over $3\frac{1}{2}$ miles long, being, therefore, second only in length in this country to the Severn Tunnel. Mr. Rickard has described it fully in a Paper entitled "The Tunnels of the Dore and Chinley Railway," which was read and discussed at the Institution on the evenings of the 23rd and 30th of January, 1894.

The circumstances of Mr. Rickard's untimely death are extremely sad. It seems that the brook into which the navvies' huts at the tunnel had been drained had during the past warm summer run nearly dry, leaving it practically an open sewer. This brook flowed through his garden and under a corner of his residence, and his doctors were of opinion that its foul state was probably the cause of the attack of typhoid which, on the 31st of October, 1893, unfortunately cut short a career of much promise.

Mr. Rickard was elected an Associate of the Institution on the 13th of January, 1885, and was transferred to the class of Member on the 27th of January, 1891.

ARCHIBALD SUTTER was born in Edinburgh on the 26th of January, 1829. At the age of sixteen he was apprenticed to Mr. Thomas Carfrae of that city for five years, during which period he superintended the erection of embankments of the Rivers Almond and Gogar. In 1854, some four years after the expiration of his pupilage, he started business on his own account in Edinburgh.

Amongst the works carried out from Mr. Sutter's designs and under his superintendence, the following may be mentioned:—the diversion of the Rivers Devon and Medwyn; the erection of bridges over them in 1856, 1864, and 1870, and the embankment of the former river at Dollar; drainage and waterworks for the town of Clackmannon in 1865–66; branch mineral railways at

Tillycoultry and Midcalders in 1867; drainage works at Alloa between Carsebridge and the River Forth in 1868; the Hopetoun waterworks, and the embankment of the Forth between Alloa and Kennet in 1869-70; the Kirkliston reservoir in 1873; water-supplies for the villages of Penstone and Airth, and a jetty at Alloa in the following year; sea-walls at Pitmilny in 1877; and since 1878 waterworks at Castle Douglas and at Winton, the repair of the pier-head at Dunbar Harbour, Newliston Bridge, Prestonpans drainage works, Dunbar waterworks extension, and surveys and soundings for the Forth Bridge.

In 1863 Mr. Sutter was appointed an Inspector to H.M. Enclosure Commissioners, an office he held for many years. He also acted as Parliamentary engineer for the new dock at Alloa and was engaged upon the surveys for the Edinburgh and District Waterworks. He had considerable experience too of railway work, notably in connection with the Edinburgh and Glasgow, the Edinburgh Suburban, and the Callander and Oban lines. Some few years before his death he opened an office in Westminster.

Mr. Sutter died in Edinburgh on the 30th of August, 1893, from heart disease complicated by other troubles. As an engineer he was conscientious and distinguished by the readiness with which he grasped the details of any scheme and by his quick perception of its salient points. He was ingenious also in devising expedients for overcoming difficulties which presented themselves from time to time. He took a prominent part in local and municipal affairs, was for some years a Town Councillor, and interested himself specially in social and sanitary movements. A staunch adherent of the Church of Scotland, he was for many years an office-bearer in the parish church of St. Andrew, Edinburgh. He was genial and courteous in manner, and not the least noticeable trait of his character was the kindly interest he exhibited in the studies and welfare of his assistants. He had occasion to visit the United States in 1881 and again in 1885, and the Australasian Colonies in 1883-84, and published his impressions in the form of books, entitled respectively "American Notes" and "Per Mare, per Terras."¹

Mr. Sutter was elected an Associate of the Institution on the 5th of May, 1874, was placed in the class of Associate Member on its creation in 1878, and was transferred to that of Member on the 24th of April, 1883.

¹ Library Inst. C.E.