

brought in contact, and he ably sustained the reputation of the firm founded by his father.

He was elected an Associate on the 10th of March, 1835, was transferred to the class of Member on the 18th of February, 1840, and at the time of his death was the father of the Institution.

PERCY RICKARD, son of Mr. W. Rickard of Derby, was born in that town on the 12th of March, 1859, and was educated at the Grammar School there. He gave early indication of a practical turn of mind and at his own desire was placed, when not quite fifteen years of age, as a pupil in the Locomotive Works of the Midland Railway in his native town, under Mr. S. W. Johnson. Not only did he go through the shops and drawing office with great credit, but he carefully prepared himself for the future by attending in his spare time the local classes held under the auspices of the Science and Art Department. On the expiration of his pupilage he was articled in November, 1877, to Mr. Edward Parry of Nottingham, who was then acting as one of the Resident Engineers on the construction of the Nottingham and Melton branch of the Midland Railway.

After spending two years and a half with Mr. Parry, Percy Rickard entered, in April, 1880, the service of the Lancashire and Yorkshire Railway Company, under Mr. William Hunt. He was first placed in the drawing office at Manchester and was entrusted with making surveys and contract drawings, the most important being those for an iron bridge carrying one of the main thoroughfares in that city over the widening of the Victoria Station. He subsequently made for Mr. Hunt a survey of Fleetwood Channel, marking the contour lines of the bottom of the channel for every fathom in depth and indicating the direction of the currents. This was extremely well done. In January, 1883, Mr. Rickard was appointed Divisional Engineer in charge of about 150 miles in the Yorkshire district. He was responsible for the maintenance of the permanent way, station buildings and signals on that section, and also had charge of small contracts and extensions. In July, 1885, however, on the abolition of districts and the appointment of a Permanent-Way Engineer in charge of the whole line, he left the service of the Lancashire and Yorkshire Railway Company.

Mr. Rickard was not likely, however, to remain long idle. In the following year he was appointed—by his old master, Mr. Edward Parry—Resident Engineer on the construction of the

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