

Ilkley, the Ashby and Nuneaton, the Cheshire lines, and the Furness Extensions railways. Of all these, the greatest engineering work was the Settle and Carlisle railway, 72½ miles in length. This had to be made through a difficult country, at great disadvantages, owing to the bad climate, the scanty population, and the absence of labour in the district. This most important branch of the Midland railway was, however, opened for passenger traffic on the 1st of May, 1876, when the directors of the company testified their satisfaction at the way in which the work had been carried out by presenting Mr. Crossley with a handsome gift, and by appointing him joint consulting engineer to the Company, on resigning the office of chief engineer in April 1875. About the same time he was also elected consulting engineer to the Leeds and Liverpool Canal Company.

During the later years of his life Mr. Crossley was only engaged on occasional work for railway and canal companies. Noted for indefatigable power of will, for the utmost exactitude in all details, and for his perfect honesty of intentions and fairness in action, his services were simply invaluable. His success was entirely due to his own exertions, and to a power of attaching subordinates to him, so that with their loyal assistance he was enabled to overcome all difficulties in carrying out the many works of which he had charge. In the committee rooms Mr. Crossley was well known as a witness; and an eminent counsel, now on the Bench, expressed his regret, to a mutual friend, that his promotion prevented him from having any further encounters with Mr. Crossley before a committee. He died at his residence at Barrow-upon-Soar on the 10th of June, 1879.

Mr. Crossley was elected a Member of the Institution in 1859; he was also a Fellow of the Geological Society, and a Member of the Society of Arts.

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MR. JOHN CURPHEY FORSYTH was born on the 14th of July, 1815, at Picton Castle, Pembrokeshire, one of the seats of the first Lord Milford. His father, Mr. John Forsyth, was in that nobleman's service, but subsequently was employed on the works of the Liverpool and Manchester railway, under Mr. George Stephenson, and after the completion of the line remained with the company until killed, in December 1844. The son was brought up under the auspices of Mr. John Dixon, and in 1834 the duties were assigned to him of sub-resident engineer on the portion of the line between Newton and Manchester. About

the year 1837 he was placed at the head of the office of Mr. T. L. Gooch, M. Inst. C.E., in Manchester, when the contract drawings were being made for the unusually heavy and extensive works of the Manchester and Leeds railway, for the execution of which Mr. George Stephenson and Mr. Gooch were the joint principal engineers; and he had charge of the preparation of these drawings until the works of the whole line were let and under contract. Afterwards he was appointed resident engineer for the construction of a section of 7 or 8 miles of the main line including several large bridges, in the neighbourhood of Huddersfield, where he remained until the line was opened to the public, early in 1841. Here he exhibited considerable engineering talent, and displayed the most untiring industry, combined with accuracy and decision. From 1841 to 1843 Mr. Forsyth was in Manchester, and again held the post of resident engineer under Mr. Gooch, in the construction of an important extension of the Manchester and Leeds railway into the heart of Manchester, to meet a similar extension of the Liverpool and Manchester railway through Salford. He had likewise placed under his charge, at the point of junction of these two extensions, the erection of the whole of the joint central station there, now known as the Victoria Station. These extensions supplied the only link wanting to complete a continuous railway communication from Liverpool to Hull, and their importance at the time could hardly be overrated. They were opened to the public on the 1st of January, 1844. Mr. Forsyth was then engaged in preparing the plans for various branches of the Manchester and Leeds railway, and in giving evidence on the same before parliamentary committees. In January 1845 he became an assistant to Mr. Gooch in London, and was similarly occupied in relation to several proposed railways for which Mr. Gooch was acting as principal engineer, viz., the Trent Valley (Act obtained); the Leeds and Bradford extension to Skipton and Colne (Act obtained); the Blackburn, Burnley, and Colne, afterwards called the East Lancashire (Act obtained), and the Southport and Euxton (Bill thrown out). Mr. Forsyth had by this time earned the character of being an excellent sample of a resident engineer to take charge of work, having a good practical notion of the way it should be carried on, with determination and energy to see that it was done promptly and thoroughly. In the autumn of 1845, at the request of the late Mr. G. P. Bidder, Past-President Inst. C.E., he was engaged to assist in the preparation of the plans for the proposed North Staffordshire railway, for which the late Mr. Robert Stephenson, Mr. Bidder, and Mr. Gooch were the joint principal engineers, Mr. Bidder taking the active part

in that line, as Mr. Gooch did, under a similar engineering arrangement, in the case of the Trent Valley. The Act for the North Staffordshire was passed in 1846, when Mr. Forsyth was appointed resident engineer to a large section of the line, and had charge of the construction of that section, which was wholly or partially opened in 1848, and he remained as the resident engineer for the railway company, taking charge of the entire line on its completion, including the canal belonging to the company, until 1853. In that year the then manager, the late Mr. S. P. Bidder, resigned that appointment to go to Canada, when, after great pressure and with much reluctance, Mr. Forsyth was prevailed upon to accept, at a small increase of salary, in addition to his position of engineer, that of manager, and he held the two appointments until 1864, when he resigned both offices. On this occasion he was presented with a testimonial by the members of his staff, and with another by his friends the traders of the district, and he was appointed consulting engineer and engineer for the construction of new lines, so that the company did not lose entirely his valuable services, and both of these appointments he held until his death. During this period the following lines and branches were made, viz., the Leek, Macclesfield Bollington and Marple joint line of the North Staffordshire, and Manchester Sheffield and Lincolnshire Railway Companies; the Silverdale, Madeley, and Market Drayton; the Audley, Newcastle, and Silverdale widening; and the Potteries loop line. When these lines were under construction his health failed, and he was obliged to be absent from business for several months together, but with the assistance of his brother, Mr. Joseph Forsyth, whom he took as pupil in 1857, the works he had in hand were completed.

Mr. Forsyth was elected a Member of the Institution of Civil Engineers in 1853. He was also a Member of the Institution of Mechanical Engineers, and a Fellow of the Royal Microscopical Society. He was a man who had thoroughly at heart the interests of those whom he served. He died on the 15th of February, 1879, at his residence, Marsh House, Newcastle-under-Lyme, deeply regretted by all, especially by those who had served under him for so many years on the North Staffordshire railway and canal.

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MR. THOMAS SOPWITH, M.A., F.R.S., was born at Newcastle-on-Tyne, on the 3rd of January, 1803. He was the only son of Mr. Jacob Sopwith, an extensive cabinet-maker in that town. He was educated at private schools in Gateshead and Newcastle, and