

recover himself, he fell overboard. It was nearly a week before the body was recovered.

Mr. W. Simpson joined the Institution of Civil Engineers as an Associate on the 10th of February, 1829, and was transferred to the class of Members, on the 7th July, 1838. He served the office of Auditor of Accounts in 1838 and again in 1840. He was much attached to the Society, was a frequent attendant at the meetings, and always took a lively interest in the proceedings.

He was an amiable man, and his unfortunate decease, in his fifty-second year, caused great pain to his family and friends.

MR. WILLIAM BAGNALL was born at Darlaston, in the county of Stafford, on the 4th of April, 1797. He was the second son of Mr. John Bagnall, a coal and iron-master, in the parishes of West Bromwich and Tipton, who, by his own unaided perseverance and energy, had raised himself to an important position in the iron trade of South Staffordshire; and who, with the sense of right which pervaded his character, admitted five of his sons into copartnership with him on the 24th day of June, 1828; and died on the 23rd of November, in the following year. At the death of his elder brother John, on the 4th of February, 1840, Mr. William Bagnall became the senior member of the firm of John Bagnall and Sons, the owners of the extensive collieries and ironworks producing the quality of iron so well known as the I. B. Crown brand. This honourable position he continued to hold until his death, which occurred suddenly, after only a few hours' illness, at Hamstead Hall, Handsworth, on the 12th day of August, 1863, at the age of sixty-six. At an early age Mr. Bagnall entered the ironworks of his father, and having naturally a mechanical turn of mind, soon made himself practically acquainted with all the intricacies of the construction and management of blast furnaces, forges, and mills, and of the working of collieries; and when any difficulty arose with regard to the machinery employed, his opinion was very valuable. On the introduction of railways the firm early directed their attention to the manufacture of rails, and thus were brought into contact with the late Mr. George Stephenson. Even in his school-days William Bagnall was remarkable for his genial, kindly disposition, and in after-life, when he had the means as well as the inclination to do good, he naturally took great interest in those institutions which he knew to be for the moral and spiritual welfare of the workpeople and their families. Schools were built at Golds Hill and Caponfield, at a cost of more than six thousand pounds, for the education of the children, and being also licensed for divine worship for both parents and children, two chaplains were so

usefully employed in connexion with the works, that the benevolent projector of this too infrequent care for the spiritual welfare of the working class, could rejoice in the success which attended so noble an undertaking. Mr. William Bagnall will be long remembered for his uniform good temper, his generous and happy disposition, and his kindness of manner towards all with whom he was connected; and he will ever be considered as having been the friend as well as the benefactor of the poorest of his workmen. This was evinced in many ways; and so much was he beloved by the poor, and his loss lamented, that thousands manifested their affectionate respect, by attending his funeral, which took place at All Saints Church, West Bromwich. Mr. Bagnall was elected an Associate of the Institution of Civil Engineers, in the year 1841, but his residence in the country prevented his frequent attendance at the Meetings.

MR. FREDERICK LAWRENCE, the fourth son of the late Mr. Alderman William Lawrence, was born in London on the 4th of April, 1828. He was educated at the City of London School, which he entered on the day of its opening, February 2nd, 1837, and after passing through the junior school, and obtaining several prizes, he took a high position in the senior class, standing on one occasion second for a scholarship, and on another second for the senior mathematical medal and prize. He afterwards entered University College, London, where he obtained the first prize for geology, for civil engineering, and for architecture, besides certificates for chemistry and other branches of knowledge. In the year 1845 he was articled to Messrs. Walker and Burges, and was employed under them for two years in superintending extensive drainage works in the Middle Level, Cambridgeshire, and afterwards on the harbour and pier works at Dover, Plymouth, and Spurn Point, and he subsequently assisted in carrying out many other important works. Of one of these, the Blackfriars Landing Pier, he communicated an account to the Institution of Civil Engineers,¹ and for it he received a Council Premium of Books.²

Whilst at the Middle Level, his attention was directed to the defects in the working of the sluices, and having been allowed to fix, by way of experiment, a small sluice constructed on a novel principle, it was found to act so efficiently, that he patented the invention. The large sluices at the Commercial Docks were then constructed on this principle,³ and for the system as there demonstrated he

¹ *Vide* Minutes of Proceedings Inst. C.E., vol. ix., p. 144.

² *Ibid.*, vol. x., p. 66.

³ *Ibid.*, vol. xvii., p. 401.