

Mr. GEORGE WATSON BUCK was born at Stoke Holy Cross, Norfolk, on the 9th of, April 1789. His parents being members of the Society of Friends, he was sent with his two Brothers to the school belonging to that persuasion, at Ackworth, in Yorkshire, where he however did not exhibit any early promise, until he was specially encouraged to application by one of the masters, when he soon became one of the head monitors, and gained a good position in the school. On leaving Ackworth he was, at his own request, placed at a school kept by a clergyman, where he applied steadily to the study of the Latin and French languages, but was not allowed to remain longer than a year, as his father, intending him for trade, placed him in a wholesale house on Tower-hill. The employment was distasteful to him, and although he endeavoured to distract his thoughts, by devoting all his leisure hours assiduously to study, his sensitive mind became seriously affected, and he was ultimately removed to a more congenial sphere, and received employment at the Old Ford station, of the East London Water Works, then in course of construction under the late Mr. Rennie. He was subsequently engaged in various capacities, on some considerable works, until the year 1818, when he settled at Welsh Pool, and became the Engineer of the Montgomeryshire Canal, which position he held for nearly fourteen years, introducing considerable improvements in the works of the canal and its general management. By that time practical engagements had perfected his theoretical acquirements, and his judgment was generally received with the same confidence, as his uprightness was implicitly admitted. About the year 1834, his friend Mr. R. Stephenson, engaged his co-operation on the London and Birmingham Railway, and intrusted to him the construction of the Metropolitan end of the line,—from Camden Town to Tring. It was in the prosecution of the duties of this post that he built his first oblique bridge, and he there executed many other works demanding considerable skill, in all which he was very successful. In the year 1838 he received the appointment of Engineer in chief of the Manchester and Birmingham Railway, in conjunction with Mr. R. Stephenson, and settled at the former place. On that line he had an opportunity of displaying his skill in the construction of the bridges over Fairfield-street, the Dale and Stockport Viaducts, and other important structures, which were all considered very successful undertakings.

In the year 1838 he contributed to the ‘Public Works of Great Britain,’¹ then being edited by Mr. F. W. Simms, (M. Inst. C.E.,) accounts of some railway bridges, &c., at the time when Mr. R. Stephenson also gave some valuable assistance to the same

¹ *Vide* “Public Works of Great Britain,” folio, 1838, Weale, London.

work, and in 1839 he published 'A Practical and Theoretical Essay on Oblique Bridges,'¹ written, as he stated, in compliance with the wishes of several friends, who were aware, that during the execution of that part of the London and Birmingham Railway, extending from London to Tring, which was under his immediate care as Resident Engineer, he had availed himself of the opportunity of investigating this important subject. Nicholson in his work on Stone Cutting, in 1828, had described a method of laying out and constructing oblique arches with spiral courses, but it was only briefly explained, and the details were not sufficiently given. Mr. Buck's book alluding first to the works of Nicolo 'Il Tribolo,' who, in 1530, erected a bridge of this description, over the river Mugnone, near Porto Sangallo, at Florence,² gives a slight historical sketch of the best-known constructions of the kind, including that over the Dora Riparia, near Turin, by the Chevalier Mosca, described by Mr. Albano³ (M. Inst. C.E.), and then gives valuable theoretical reasonings and formulæ, and practical rules for laying out and building such bridges.

He went to Germany in 1840 for the construction of the Railway from Altona to Kiel, but after staying there for some time, he was obliged by severe illness, to retire from the undertaking, before its completion. On his return to England, he, after a short sojourn at Leamington for the recovery of his health, resumed his duties on the Manchester and Birmingham Railway, which he completed; and in 1842, on his retirement from the service of that Company, he had the gratification of receiving from the Directors, a resolution expressive of the unanimous conviction of the Board, that the design and construction of the line reflected the highest credit upon his talents and his devotion to their interests; and that considerable savings had resulted from the judicious alterations introduced by him, and they assured him, that in retiring from the service of the Company, as Engineer-in-Chief, he carried with him the sincere and best wishes of the entire Board.

In the busy period which followed, particularly during the year 1845—6, his services were sought on all sides, and the exertions he made, in common with almost all other Engineers, at length were too great for a naturally delicate constitution, and after a sudden attack of vertigo, he was afflicted with total and permanent loss of hearing. This distressing malady obliged him to retire from the active exercise of the profession, and he retired to Ramsey, in the Isle of Man, where he employed his leisure hours in correcting his former published works, and in writing some new

¹ Vide 'A Practical and Theoretical Essay on Oblique Bridges,' by G. W. Buck, 4to., 1839, Weale, London.

² Vide Vasari, vol. xi. p. 308, edizione de Milano, 1811.

³ Vide Trans. Inst. C. E., vol. i. p. 183.

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essays; and taking a lively interest in the improvements of the spot where he had 'pitched his tent,' he was always ready to afford his advice, and to aid in the designs for such works as the Tower to commemorate the visit of Her Majesty and the Prince Albert to the Island, in 1847, and the restoration of the old and interesting chapel at Ballure, in which latter he took great interest, and energetically co-operated with Mr. Greggan and the Reverend W. Kermodé, the Incumbent of Ramsey.

Naturally of a contemplative turn of mind, when by his infirmity he was, to a great extent, precluded from entering into the affairs of the world, his thoughts became more exclusively devoted to religious topics, and a considerable portion of his time was devoted to the study of the Scriptures, which all his life had been to him a source of comfort and direction, whence he drew those noble principles which characterized him in his intercourse with mankind, and fitted him for that better state, to which he looked forward with well-grounded hope. At length he was attacked by scarlatina, against which his constitution had not strength to struggle, and he sunk after a very brief illness, and died on the 9th of March, 1854, in his sixty-fifth year. He was interred in a spot selected by himself in Maughold churchyard, and within a fortnight, there were placed beside him, in the same grave, the remains of his amiable and devoted wife and of a beloved daughter, who fell victims to the same complaint.

It were almost unnecessary to say, that a man with such acquirements commanded the respect of his brother Engineers, and those with whom he was engaged, but he did more, he rendered himself beloved by all who knew him as a friend; and when the time arrived for demonstrating that friendship substantially, Mr. Robert Stephenson's name was, as usual, first and largest on the list, and his kindness and munificence are continued to the family to the present time. Our late Member's name will as often be mentioned with affection for his sterling qualities, as it will be with respect for his practical knowledge.

He had long been connected with the Institution, having joined it as a Member, in 1821; he communicated papers to the Minutes,¹ attended the meetings whenever he was in London, and was always a willing correspondent, and happy to afford information when required.

MR. JOHN DONKIN was born at Dartford, Kent, on the 20th of May, 1802; he was the eldest son of the late Mr. Bryan Donkin, one of the earliest Members of the Institution, whose name

¹ *Vide Minutes of Proceedings, Inst. C. E., vol. i., 1838, p. 51; 1839, p. 42; and vol. iii., 1844, p. 153.*