

the water from the excavations in the rocks, whilst in progress, in spite of the furious onslaught of the waves of the North Sea, to which the works were fully exposed. His coolness in difficulty, his ingenuity in devising means for executing the work, together with his perseverance and determination, impressed all, with whom he was brought into contact, with very favourable opinions of his qualifications.

With the object of giving him experience in other branches of the profession, he was then placed under the late Mr. John Gibb (M. Inst. C.E.), of Aberdeen, and was by him employed at the erection of the Victoria Viaduct, over the Weare, at Beddick, Durham. Thence he removed, in 1839-40, to Granton, Edinburgh, where, at the new pier, he enjoyed the advantage of the experience and instructions of Mr. Howkins (Assoc. Inst. C.E.), by whom he was engaged as Assistant, and at the end of 1840, Messrs. Walker and Burges, the Engineers-in-chief for those works, kindly admitted him into their office in London, where he remained until his father required his aid, in 1842, in the construction of the harbour at Pittulie, in Aberdeenshire.

In 1844 he was intrusted by Mr. Simpson (V.P. Inst. C.E.), with the direction of the new Harbour and Dock-works at West Hartlepool, Durham, where he remained, until a vacancy occurred, under the Trustees of the River Clyde and Harbour of Glasgow, when he was elected, in a flattering manner, to the position of Resident Engineer, and, aided by his brother Alexander, performed the duties with great credit, until his premature decease, on the 14th March 1852, in the thirty-third year of his age, generally regretted as a promising engineer, who, if he had been spared, would have attained a good position in the profession.

He joined the Institution, as an Associate, in 1842, and became a Member, by transfer, in 1851. During his residence in London he attended the meetings very regularly, and the part he took in the discussions indicated the practical nature of his professional education.

---

MR. ROBERT BRUNTON was born at Lochwinnoch, North Britain, on the 10th of February 1796, and at fourteen years of age was received as a clerk in the cotton mills, at that place ;

but when, in 1812, those works were destroyed by fire, he went to Belfast, and on the introduction of his brother, Mr. John Brunton, C.E., was engaged at the foundry of Messrs. Chain and Young, whence he transferred his services to Messrs. Claude Girdwood and Co., Glasgow, where he compiled his "Compendium of Mechanics,"<sup>1</sup> a valuable text-book for Engineers, and one of the first of a most useful class of publications for practical men; in the latter years of his life he devoted some time to the preparation of a new edition of this work, which it is hoped may soon be published.

About the year 1823 he arrived in London, and acted for some time as chief assistant and draughtsman to his brother, the late Mr. William Brunton, C.E., but on the removal of that gentleman to South Wales, he was engaged by Messrs. Banks and Co., of Bilston, Staffordshire, in whose works he obtained the first insight into the manufacture of iron, in all its branches. He then became the principal assistant of Mr. Isaac Dodds, (M. Inst. C.E.) at the Horsley Iron Works, Staffordshire, and aided in perfecting several of his ingenious mechanical inventions and improvements.

In 1835 he entered the service of the Indian Iron Company, and as their chief Engineer, constructed and managed the works at Porto Novo, on the coast of Coromandel, East Indies. His reports on the manufacture of iron and steel in India, and the observations recorded during his journeys in France, Spain, Germany, Norway and Denmark, are full of information, and demonstrate the talent for observation which was one of the distinguishing features of his character. The failure of his health obliged him to return to England, but his connexion with the Indian Iron Company, continued at intervals, until the period of his decease, which occurred at the Maestaeg Iron Works, Glamorganshire, of which he was the acting Engineer.

Mr. Brunton joined the Institution, as a Member, in the year 1842, and during his residence in London was a very constant attendant at the meetings, taking an active part in the discussions. He was a man of great quickness of perception,

---

<sup>1</sup> "A Compendium of Mechanics," containing practical rules and tables, connected with the Steam-engine, Water-wheel, Force-pump, and Mechanics in general; also examples for each rule, calculated in common decimal arithmetic." By Robert Brunton. 8vo, plates. Glasgow, 1824.

possessed a considerable fund of theoretical and practical information, and had profited by the opportunities he had enjoyed of gaining experience. He was a kind-hearted, amiable person, with an amenity of manner which won the confidence of all with whom he was brought into contact, and his decease on the 6th of July 1852, in his fifty-sixth year, caused a void in a social circle, where his remembrance will long be cherished.

---

SIGNOR TOMMASO CINI was born in 1812, at San Marcello, in the Tuscan Apennines, where his family have long held a high position, amongst the large landed proprietors of the district. He early exhibited a predilection for mechanical pursuits, and was educated at the University of Pisa, with a view to his adopting the profession of an Engineer. About the year 1832 he was engaged in building and establishing, on the family property, a large paper mill, in which, amongst his numerous avocations, he continued to be deeply interested until the period of his decease. Between 1842 and 1845, he was engaged as Architect and Engineer, in the construction of an extensive woollen factory, and of two large establishments for smelting copper, besides supplying many architectural, mechanical, and civil engineering designs, and was consulted in most of the new industrial undertakings of Tuscany. In 1845 he completed the surveys for a railroad across his native mountains, from Pistoja, into the Bolognese territory; an undertaking presenting many difficulties, in preparing for which, and in mastering all obstacles, he exhibited great skill and talent; the most striking qualities of his mind being a wonderful facility in resources, united to untiring energy and application. The necessary concession, for the Apennine railroad, being obtained from the Government, by him and his brothers, the Company was formed and the capital subscribed, when the political crisis of 1848 put an end to the undertaking, and the Company was dissolved.

In 1847, Signor Cini passed three months in England, visiting the most important engineering works connected with the railroads, and on his return to Italy, he was induced by a private Company, to make a survey for a line between Rome and the Neapolitan frontier; whilst occupied on this project,