

OBITUARY.

JOHN FREDERIC LA TROBE BATEMAN passed peacefully away at his residence, Moor Park, Farnham, in the early morning of the 10th of June, 1889, aged seventy-nine years.

He was born at Lower Wyke, near Halifax, on the 30th of May, 1810, and was the eldest son of Mr. John Bateman, of Ockbrook, Derbyshire, by his wife Mary Agnes La Trobe, daughter of the Rev. Benjamin La Trobe, a former well-known Moravian minister at Fairfield, Aston-under-Lyne. At the age of seven, Mr. Bateman was sent to the Moravian school at Fairfield. After two years, he went to the Moravian school at Ockbrook where he remained four years, returning again to the Fairfield school. When fifteen years old he was apprenticed as a pupil to Mr. Dunn, of Oldham, a surveyor and mining engineer in considerable practice, and who also had the charge and execution of various other engineering works, such as new roads, water-works, &c. Here Mr. Bateman learnt the rudiments of his profession, and after a short time, by the application of natural talent and attention, became competent to carry on nearly every operation himself.

Mr. Bateman entered into business on his own account at Manchester in 1833; and, in the following year, he investigated the causes of floods, and their consequences, in the River Medlock, which led to his studying more closely hydraulic questions. In 1835, when only twenty-five years old, he was associated with Sir William Fairbairn (afterwards his father-in-law) in laying out reservoirs on the River Bann in Ireland. Dating from this engagement, his work in the construction of reservoirs and water-works was of a very extensive character.

Limits of space do not permit of any exhaustive description of the works with which Mr. Bateman was connected, either in designing and carrying out or advising, but amongst the principal may be mentioned the Loch Katrine Works for Glasgow, the Longdendale Works for Manchester, besides the important systems for Warrington, Accrington, Oldham, Ashton, Blackburn, Stockport, Halifax, Batley, Dewsbury, St. Helens, Kendal, Belfast, Dublin, Newcastle-on-Tyne, Chorley, Bolton, Darwen, Macclesfield, Chester, Birkenhead, Gloucester, Aberdare, Perth, Forfar, Wolverhampton, Colne Valley, Colne and Marsden, Cheltenham, &c., and latterly, the designing of the Thirlmere scheme for

Manchester. In all his undertakings he advocated soft water in preference to hard, and favoured gravitation schemes whenever practicable, so as to avoid pumping. His attention, therefore, was very naturally turned to the question of means for measuring rainfall, a subject to which he devoted a great amount of time for many years. He accumulated a number of valuable statistics on the subject, and wrote several Papers on the results of his observations. A year or two subsequent to the laying out of the Bann reservoirs, Mr. Bateman was engaged in designing a series of reservoirs in the neighbourhood of Glossop, in Derbyshire, and in the Parliamentary session of 1838, he was employed by some landowners to oppose a scheme for obtaining additional supplies of water for the town of Oldham.

On account of his hitherto successful undertakings, Mr. Bateman in 1844 was first called in to advise on the Manchester and Salford water-supply, an exhaustive history and description of which he published in the same year. In the preface to this book, he writes: "The works for the supply of the City of Manchester and its neighbourhood with water from Longdendale, are not only in many respects the largest which have ever been executed in this country, but they have been attended with so many difficulties in their construction, and present so many points of novelty and interest, that it is conceived a somewhat detailed account of them may not only be due to their relative importance among the great engineering works of the age, but may also contain matters . . . of considerable value to the Student in Hydraulic Engineering. . . . The first project for the supply of water to Manchester from the Pennine chain of hills was laid out in 1844. The works in Longdendale were commenced in 1848, but I was not able to report them completed till the spring of 1877. Up to the present time, therefore, they have occupied nearly forty years of my life."¹ The people of Manchester have always admired the engineer to whom, at the early age of thirty-four, they confided their wants, a confidence, moreover, that was never broken during the great number of years of Mr. Bateman's connection with that city.

The Town Council of Glasgow called in the services of Mr. Bateman in 1852 to advise them in their future proceedings with regard to the water-supply for that city, with the result that in the Parliamentary session of 1854-55 a Bill was obtained for the supply of water for Glasgow from Loch Katrine. The works were

¹ "History and Description of the Manchester Waterworks." By J. F. La Trobe Bateman. 4to. Manchester and London, 1884.

commenced in the spring of 1856, and on the 14th of October, 1859, Her Majesty the Queen was present at the opening ceremony, and herself turned the sluice which first admitted the water from the lake into the aqueduct. The water was introduced into the city on the 28th of December, and by March, 1860, the supply was general throughout the town. These works extend over 34 miles of country; the water is conducted in one place through a tunnel nearly 7,000 feet long, and the whole was completed within four years. Mr. James M. Gale, writes: "It is a work which will bear comparison with the most extensive aqueducts in the world, not excluding those of ancient Rome; and it is one of which any city may well be proud."¹

A pamphlet which Mr. Bateman wrote in 1865 "On the Supply of Water to London from the Sources of the River Severn,"² created some stir at the time. Nearly all his schemes had been conceived and designed on a large scale, but this was gigantic. It was designed and surveyed entirely at Mr. Bateman's own personal expense, and at a cost of some £4,000 to £5,000. It resulted in a Royal Commission being held, over which the Duke of Richmond presided, to consider, in conjunction with other minor schemes, the question of a better supply of water to London. The Commission reported in 1868 very much in favour of Mr. Bateman's project. It was a noticeable fact at the time that he gave nineteen hours' evidence before this Commission, hardly, if ever, referring to a note, and he placed at its disposal all the information he possessed, besides preparing many plans which illustrated the report and the evidence taken. It was a purely gravitation scheme, designed to convey to London 230,000,000 gallons of water per day, and the estimated total cost of the works was £11,400,023.

In 1868 Mr. Bateman was consulted by the Manchester Corporation on the best means of preventing the floods caused by the River Irwell, and his report thereon was published in October of that year. He was also connected with various harbour and dock works and river improvements throughout the kingdom, notably those of the Clyde Navigation Trust, for which he was for many years consulting engineer, and the Shannon Inundation Enquiry in 1863, on which he was employed by the Government.

On one or two occasions Mr. Bateman applied his talent and skill to other than water schemes. On analyzing the occasions

¹ "Transactions of the Institution of Engineers in Scotland," vol. vii. p. 27, session 1863-64.

² Inst. C.E. Tracts. 8vo. Vol. 151.

on which he did depart from his own line, it may be safely said that it was generally done in a generous spirit, with a view to helping some engineer who applied to him for assistance. The most noticeable occasion of this sort will be found in the scheme he brought out, in conjunction with Mr. Révy, in 1869, for a "cast-iron tube for carrying a railway across the Channel between the coasts of England and France," an account of which was published in the form of a pamphlet.¹ The object was to devise a scheme by which all difficulties of operating in water should be avoided. It was proposed "to lay a tube of cast-iron on the bottom of the sea, between coast and coast, to be commenced on one side of the channel, and to be built up within the inside of a horizontal cylinder, or bell, or chamber, which shall be constantly pushed forward as the building of the tube proceeds." A tunnel, however, was regarded as more practicable, but neither tube nor tunnel seems likely to be a thing of early accomplishment.

Almost the last English scheme devised by Mr. Bateman was the extension of the water-supply of Manchester, known as the Thirlmere Scheme. The original works at Longdendale for the supply of Manchester, laid out, in 1846, were designed for a population less than half of that in 1882, and it must be considered a matter of congratulation that notwithstanding the long-continued drought of 1887, and when other towns ran almost out of water, Manchester, with its old existing works, suffered no greater inconvenience than the temporary stoppage of supply for a few hours during the night. But some twelve or thirteen years ago it was felt on all sides that it was advisable to look for additional sources of supply. Mr. Bateman had long been of opinion that the vast quantity of water precipitated on the Cumberland and Westmoreland hills, and which was running uselessly to waste, could be impounded and utilized for the manufacturing districts of Lancashire and Yorkshire. The Corporation were advised by their engineer that, for any new works, they should go to a source of supply sufficient for many years to come, and as for this purpose they would have of necessity to go to great distances, he advised them to contemplate the possibility of acquiring for the district 40,000,000 or 50,000,000 gallons, or even more, per day. The only sources from which they could obtain the water (with due regard to position and cost) were, he said, those contained in the lakes of Cumberland

¹ Inst. C.E. Tracts. 4to. Vol. 61.

and Westmoreland, the foundation of his opinion being that in these districts the rainfall was excessive, and the uses to which the water could be locally applied small and insignificant. The necessity for a further supply of water being therefore established, no time was lost in examining the sources from which it could be obtained. Thirlmere, after mature consideration, was ultimately fixed upon, but not before Ullswater and Haweswater had been well considered. Ullswater was at one time recommended by Mr. Bateman as the best and cheapest source for a joint supply to Manchester and Liverpool; but the Liverpool Corporation, determining that the carrying out of a scheme in conjunction with Manchester might lead to complicated arrangements, resolved to seek for an independent supply. Thirlmere, therefore, being decided upon as the source from which Manchester should obtain its additional supply, a Bill went before Parliament in 1878, but was thrown out on reaching the House of Lords, on account of corporation clauses having been inserted which were not in conformity with the advertised notices. In the next session, however, a fresh Bill, including the new clauses, was introduced and passed with little or no opposition. Mr. Bateman was one of the principal witnesses for the Corporation, and his great experience and practical skill contributed mainly to the passing of the Bill, and the subsequent commencement of the works now in progress between Thirlmere and Manchester.

In addition to his many undertakings at home, Mr. Bateman had a large and extensive connection abroad. In November 1869 he went out as representative of the Royal Society, on the invitation of the Khedive of Egypt, to attend the opening of the Suez Canal; and in the winter of 1870-71 he first visited Buenos Ayres, at the request of the Argentine Government, for the purpose of laying out harbour works for that city. Mr. Bateman's scheme, however, was not adopted, but he was afterwards employed by the Government to design and carry out the extensive works of the drainage and water-supply of that city. These works are still in course of construction, and even to within a day or two of his last illness he was engaged in settling several matters of importance connected with them. During the year 1874 Naples and Constantinople were both visited by Mr. Bateman, who prepared a water scheme for each city, and at various times his advice has been solicited and given with respect to the better water-supply of many cities and towns abroad. He visited Malta to report to the Government on the docks at that place, and a large graving-dock at Halifax, Nova Scotia, of which he was engineer, is just on

the point of completion. He was also the engineer to some reclamation schemes in Spain and in the Island of Majorca. The latter is worthy of a passing notice, in that at the time of his death the land so reclaimed was his own property, and consists of about 5,600 acres, all more or less under successful cultivation, and has, perhaps, under one management, the largest system of irrigation in the world. The Crown Agents to the Colonies also employed Mr. Bateman to design and carry out works for the supply of water to the city of Colombo, in Ceylon.

Having thus briefly alluded to the principal works and undertakings of Mr. Bateman in his professional career, both at home and abroad, that part of his life more closely connected with this Institution may be referred to. He was one of the oldest Members, having been elected on the 23rd of June, 1840, thus very nearly concluding a fifty years' membership. He was President of the Institution during the sessions 1877-78, 1878-79, and during his term of presidency the *Conversazione* held on the 4th of June at the India Museum, South Kensington, will be memorable, not only because it was in honour of the fiftieth anniversary of the incorporation of the Society by Royal Charter, but also on account of its being the first occasion on which ladies were not invited to the *soirée*; or, more strictly speaking, it was a return to the old custom of the invitations being confined to gentlemen.

For forty-eight years of his professional career Mr. Bateman himself guided the threads of his business; but in 1881, in order that the completion of his north-country undertakings might be the more easily attended to, he took into partnership Mr. George Hill, who had for many years been his assistant, and who had been associated with Mr. Bateman in nearly all his northern schemes. This partnership was dissolved by effusion of time in 1885. At the commencement of 1888, owing to increasing foreign business and advancing years, and in order that all the active details of his profession might be properly attended to, he entered into partnership with his son-in-law, the Hon. Richard Clere Parsons, and his son, Mr. Lee La Trobe Bateman, and who are now carrying on the business.

Mr. Bateman was a Fellow of the Royal Societies of London and of Edinburgh, to the former of which he was elected in 1860. He was also a Fellow of the Royal Geographical Society, the Geological Society, the Society of Arts, the Royal Institution, and had many other distinctions conferred upon him. He was elected to the Athenæum Club in 1862 by the Council without ballot, and was a member of the Carlton Club.

In concluding this biography which has merely touched on the most notable achievements of this eminent engineer, perhaps no better words can be used than those expressed by Viscount Midleton in his speech at the Annual Dinner of The Institution of Civil Engineers on the 6th of April, 1878, when Mr. Bateman was President.

“It would ill become me to dwell upon the professional merits of your President, although I may venture to say, as an onlooker, that posterity will connect his name with more than one of the greatest undertakings of the latter half of the nineteenth century. There is one point, however, upon which I feel quite competent to speak. I can truly say that with all his multifarious professional avocations, and the constant demands upon his time, he does not neglect his duty either as a country gentleman, a magistrate, a neighbour, or a friend.”

FREDERICK LEWIS DIBBLEE was educated at the McGill College, Montreal, and began his apprenticeship to the profession of Civil Engineering in 1856 as a pupil under Mr. Alexander Luders Light, at that time Chief Engineer of the European and North American Railway in New Brunswick. Mr. Dibblee first assisted in completing the surveys, and afterwards, until 1861, had charge of a 10-mile section comprising heavy works. He was next engaged for two years, by the same engineer, on the explorations for the Intercolonial Railway. Mr. Dibblee's service of seven and a half years on railway work in an undeveloped country was of the greatest assistance to him, by fostering qualities of self-reliance and confidence in his own abilities, which afterwards became characteristic. The surveys of the Intercolonial line having been interrupted, Mr. Dibblee was employed by Mr. (now Sir) James Brunlees, Past President Inst. C.E., for nearly a year on the construction of the São Paulo Railway in Brazil, and he afterwards had experience under Mr. (now Sir) George Bruce, Past President Inst. C.E., of continental methods, as Engineer-in-Charge, for eight months, of a division of the East Prussian Railway under construction. Mr. Dibblee was next sent by Mr. Bruce to Madras, in a similar capacity, on the Great Southern of India Railway in November 1864. In India he found his proper sphere, and the remainder of his career was passed in that country, in active and continuous employment, mostly on railway work. After being District Engineer on the Great Southern of India for