

MEMOIRS OF DECEASED MEMBERS.

MR. JOSEPH ARMSTRONG was born at Bewcastle, Cumberland, on the 21st of September, 1816, his father being a yeoman who emigrated to Canada in the year 1817, taking with him two of his three sons, of whom Joseph was the third. The family returned about four years later, the father having been unsuccessful. Once more on his native soil, Joseph Armstrong's first employment was as a boy at the pumping engine under Mr. Robert Hawthorn, engineer, Wallbottle Colliery, in Northumberland, the same in which George Stephenson and Timothy Hackworth had laboured. Here he evidently imbibed his taste for mechanical science. In the year 1836, at the early age of twenty, he became an engine-driver on the Liverpool and Manchester railway, acting under Mr. Edward Woods, M. Inst. C.E. This position he retained until 1840, when he entered the service of the Hull and Selby company, first as locomotive engineman under Mr. John Gray, and subsequently as foreman of the running-engine shed and repairing shop at Hull under Mr. Thomas Cabry, where he remained until 1845, when he was appointed a foreman on the London and Brighton railway, again under Mr. Gray. His connection with the Brighton Company does not appear to have afforded sufficient scope for his abilities, for towards the close of 1847 he moved to Chester to take charge of a district of the then Shrewsbury and Chester line, acting as second to Mr. Edward Jeffreys, M. Inst. C.E., to whose position he succeeded in 1853 when that gentleman retired. A few months later the Shrewsbury and Birmingham railway was amalgamated with the Shrewsbury and Chester, and Mr. Armstrong was at once appointed to a responsible office, for which his long previous training and technical experience had admirably fitted him—viz., that of superintendent of the locomotive, carriage, and wagon departments of the Shrewsbury and Birmingham, but still retaining the charge of the locomotive department of the Shrewsbury and Chester railway. On the amalgamation of the Shrewsbury and Birmingham and the Shrewsbury and Chester lines with the Great Western system in the year 1854, Mr. Armstrong was appointed superintendent of the

northern division of the locomotive department, under Mr. (now Sir D.) Gooch, his charge including a section of the broad gauge. Subsequently, when, in 1863, the West Midland became absorbed into the Great Western system, the locomotive department was divided into two sections, the narrow-gauge districts being placed under the charge of Mr. Edward Wilson, M. Inst. C.E., Mr. Armstrong retaining the charge of the northern division under that gentleman, at the same time continuing his service under Mr. Gooch as superintendent of the Birmingham district of the broad gauge. In 1864, Mr. Gooch and Mr. Edward Wilson retired, and Mr. Armstrong was, in the month of June of that year, appointed chief superintendent of the locomotive, carriage, and wagon department of the whole line, a position which he retained until his death. The responsibility of this office may be inferred from the fact that he had to provide all the new engines, carriages, and wagons, in addition to a variety of other work, required for the Great Western company's system of more than 2,000 miles of railway, the total number of men employed in his department being twelve thousand nine hundred. Here he demonstrated a capacity for combination, order, and rule, united with a mastery of the profession seldom equalled and more rarely excelled. An instance of his self-reliance and vigorous mind was afforded in 1871. When the Great Western board were considering the question of altering the gauge of the South Wales line, Mr. Armstrong undertook to construct, with the appliances then at his command, the whole of the stock required for this purpose within a period of eighteen months;—the broad-gauge stock to be replaced being equal to about one-sixth of the entire stock of the company, the whole expenditure on account of this work to be charged against revenue. This undertaking, on the part of a competent and deservedly trusted officer, doubtless was of material assistance to the Directors in making their decision. It may be mentioned that this notable engineering feat was successfully carried out in its entirety, the conversion of the gauge over the whole line and branches from Swindon to Milford Haven being completed by Mr. Armstrong's colleagues of the permanent way department within the single month of May 1872.

From his position as head of the great mechanical establishment which forms the principal feature of the town, Mr. Armstrong was naturally a prominent man in Swindon, and was greatly loved and respected there. Impressed with the many advantages of clubs and institutes for the working classes, he took an active interest in the Swindon Mechanics' Institute, and was ever ready to help it

with his advice and with his purse. He was one of the Directors of the Swindon Water Company, and also for many years Chairman of the Local Board of New Swindon, which thriving locality owes much of its present prosperity to his indefatigable efforts on its behalf. He was the promoter of the Accident Hospital, and in fact identified himself with every institution in the district of a character calculated to illustrate the Benthamic principle of the greatest happiness for the greatest number.

The leading characteristics of Mr. Armstrong's mind were energy and boldness, allied to an almost chivalric devotion to duty. Clear of vision, he saw the object he sought to attain, and straightway he set about the most direct manner of getting it. As an officer of the Great Western railway he was most upright and conscientious; and it said of him, that he would dispute a sixpence if he thought the company was being wronged, whilst in his private expenditure he was most munificent and liberal. As illustrative of this, it is related that it once became his duty, for some fault, which as locomotive superintendent he could not overlook, to discharge a man with a large family. Some pressure was brought to bear upon him to reinstate the man, to whom the loss of his situation was fraught with most serious consequences. He was, however, inflexible; but knowing privately the circumstances of the family, he for some considerable time afterwards supported them out of his own purse. His duty to the company he served in his opinion necessitated the example, whilst his kindly benevolence prevented the inevitable misery which he knew would follow. Being one of those to whom work is the salt of life, Mr. Armstrong could with difficulty be persuaded to take the necessary relaxation from his arduous avocations, and for some time previous to his death it had become evident that his constitution was gradually weakening; but at the earnest solicitation of numerous friends and of the directors of the company he had consented to take a three months' leave of absence. Acting under medical advice he went to Matlock Bath, but had scarcely arrived there when alarming symptoms indicated softening of the brain. To this he succumbed on the 5th of June, 1877, in the sixty-first year of his age.

Even in the annals of the engineering profession, so fruitful of men who have risen from humble spheres to positions of great public importance, there are few records of a more successful and honourable career than that of Joseph Armstrong, and very few men have died more universally or deservedly respected.

Mr. Armstrong had been a Member of the Institution of Mechanical Engineers for many years, and he was one of the Members
[1876-77. N.S.]

of Council of that body; but his connection with this Institution was of recent date, he having only been elected a Member on the 10th of April preceding his death.

Mr. JAMES FAIRRIE BLAIR, the third son of Mr. Patrick Blair, solicitor and banker, of Irvine, Ayrshire, was born on the 28th of November, 1831. He was educated at the Irvine Academy, his freshness and brightness making him a general favourite with both masters and boys. As sometimes happens with those who in after life become enthusiastic with regard to their special vocation, young Blair does not appear to have manifested any early predilection for Engineering, his adoption of the profession being the result of accident. At the age of fourteen he left Irvine to reside in Edinburgh, for the purpose of attending the lectures at the University, where he speedily distinguished himself in mathematics. While there Mr. John Miller, M. Inst. C.E., who was a friend of Mr. Blair's family, offered to take him as a pupil, and as this offer was made at a time when engineering was eagerly courted, it was gladly accepted; and Mr. Miller soon after employed him upon the Glasgow and South-Western railway, and various other important works. His own natural intelligence, strengthened by Mr. Miller's kindly encouragement and excellent training, quickly led him to delight in the profession he had adopted. On the completion of his articles he entered the employment of the late Mr. James Walker, Past-President Inst. C.E., under whom he was principally occupied on the Holyhead Harbour works. On the retirement of Mr. Walker, Mr. Blair entered the office of Mr. John Fowler, Past-President Inst. C.E., and under that gentleman was engaged on various extensive works, and became Resident Engineer of the Mid-Kent railway. On its completion he was, in 1859, appointed to a similar position on the Great Northern and Western of Ireland railway, and the greater portion of that line was satisfactorily finished under his direction.

In the year 1863 Mr. Blair commenced practice on his own account, and in conjunction with Mr. Fowler laid out the City of Glasgow Union railway, a line passing through the city, connecting the various railways terminating in it, and providing a large central station. The Act was obtained in 1864, and Mr. Blair was appointed, with Mr. Fowler, to carry out the works, which were of an important and extensive character, involving an outlay of more than two millions sterling. The Central Station in