

pelled to quit the country. He then returned to Mr. Lloyd, by whom he was soon appointed foreman, in which position he remained till October, 1839, with the exception of a short period, during which he acted as manager for Messrs. Mather, Dixon, and Co., of Liverpool. He finally left the then firm of Messrs. Lloyd and Easter, to become chief foreman of the steam factory then recently established in Woolwich Dockyard, under the direction of Mr. Peter Ewart, the Chief Engineer, who placed great confidence in the knowledge and judgment of Mr. Hughes. He made such good use of the opportunity thus afforded of adding to his professional experience, that on the formation, in April, 1847, of the steam branch, at the Admiralty, he was removed from Woolwich, and appointed Assistant to the Engineer-in-Chief of the Navy, which situation he held until the time of his decease. During this period he aided in carrying out those great improvements which became necessary, in consequence of the application of the screw propeller to the vessels of the Royal Navy, involving, as it did, a complete change in the engines for ships of war.

Mr. Hughes was remarkable for the extreme caution he displayed, before coming to a decision; but when once formed, it was generally so sound, that it very seldom required any modification. He joined the Institution as an Associate in the year 1848, and occasionally attended the Meetings, especially when the subject of steam navigation was under discussion.

He died on the 9th of October, 1860, in the sixty-first year of his age, and was buried in Norwood Cemetery, in the same grave with his wife, who only survived him two days.

MR. JAMES WARDROP JAMESON, a Son of Mr. William Jameson, Writer to the Signet, was born at Edinburgh, in 1824. He was educated at the High School of that city, and during the years 1841 and 1842, he attended the University classes of natural philosophy, mathematics, and practical chemistry. He appears to have attained proficiency, in each of those subjects, especially in mathematics, for which he gained the chief prize, and he was complimented at the public examination, by Professor Donaldson, as "the clearest-headed scholar who had passed through his hands." From an early period, he showed a decided predilection for mechanical pursuits, and in 1838, he was apprenticed to Mr. James Stirling, (M. Inst. C. E.,) the Engineer of the East Foundry Company, Dundee. At the expiration of his apprenticeship, being desirous of professional improvement and of gaining a practical knowledge of the construction of locomotive engines, he came to England; and in 1844, he was employed in the workshops of the Great Western Railway at Swindon, under Mr. Sturrock; and

subsequently, for nearly a year, in the drawing office of the South Western Railway, at Nine Elms, under Mr. John V. Gooch, (M. Inst. C.E.). In the acquisition of engineering knowledge, as in his university studies, he was distinguished for patiently conquering difficulties, instead of endeavouring to evade them; and hence, he soon rendered himself competent to accept offices of a responsible nature. In the latter part of 1845, he became Chief Superintendent of the Locomotive Engine Department of the works of Messrs. Rothwell and Co., Union Foundry, Bolton, with whom he remained for three years, during which time he successfully constructed a number of engines, chiefly for the London and South Western Railway Company. Ambitious of more varied employment, Mr. Jameson joined, in 1848, the engineering establishment of Mr. Philip Taylor, at Genoa. During his stay in Italy, his duties caused him to reside for some time at Milan and at Turin, where his scientific knowledge gained him the esteem of many of the Italian Engineers, and also that of the late Count Cavour. In consequence of Mr. Taylor disposing of his establishment at Genoa, Mr. Jameson left Italy, in 1851, and he was engaged as Assistant Engineer under M. Bourdon, to the *Compagnie des Forges et Chantiers de la Méditerranée*, at Marseilles, where he remained about three years, occupied chiefly upon the construction of marine engines, and of high-pressure engines for the gunboats of the French Navy. His professional reputation at Marseilles was such, that his services were eagerly sought after, particularly by the managers of the *Compagnie de Navigation Mixte*, with whom, in 1854, he engaged for four years, as Engineer-in-Chief. He succeeded in overcoming many of the difficulties in which the Company were placed at that time,—in effecting economy,—and in improving the efficiency of their steam fleet, which was of considerable magnitude. In 1858, he voluntarily resigned the appointment, in consequence of the operations of the Company having been affected, by the conclusion of the Russian war and other circumstances, in a manner unsatisfactory to himself; and in spite of tempting proposals to remain, he returned to England.

It was during his residence at Marseilles, that the name of Mr. Jameson became associated with the application of the combined steam and ether engine, for marine purposes. Although this system had previously been experimented upon, in workshops, by the inventor, M. Du Trembley, it was only on its application by Mr. Jameson to several ships of the *Compagnie de Navigation Mixte*, that it was, for the first time, practically worked out, and proved to be capable of effecting considerable economy of space and fuel. By his skill and experience he was able to overcome successfully the difficulties inherent in the construction of marine

engines, combining the use of steam and ether; and although this system has not hitherto obtained extensive application, the results of the careful and numerous trials he made in the steamers of the African and Brazilian Line, cannot fail to be a useful addition to marine engineering knowledge. Mr. Jameson received the Watt Medal of the Institution of Civil Engineers, for his Paper on the performance of the Combined-Vapour Engine,¹ read in 1859, before the Institution.

After leaving Marseilles, he received the appointment of Engineer and Agent of the Oriental Inland Steam Navigation Company of India, whither he proceeded in May, 1859. His attention was first given to the operations of the Company on the Indus, but his stay at Kurrachee being limited to a few months, his labours were confined to the collection of facts relative to the working of the 'steam train' system of navigation, peculiar to the operations of that Company. He then went to Calcutta, in order to establish a 'steam train' on the Ganges. He promptly commenced this undertaking, and the experience he had acquired on the Indus, aided by his thorough knowledge of marine engineering, would, doubtless, have produced important commercial and scientific results, had his health not proved unequal to the heavy professional labours he underwent, in a climate unsuited to his constitution. He died at Calcutta, on the 1st of June, 1860, after a brief illness, adding another to the long list of Englishmen who have fallen in India in the cause of science.

Mr. Jameson's abilities as an Engineer, promised to raise him to an important rank in the profession. He was highly esteemed by all his employers, and he always earned and retained their respect. He was conspicuous for his unimpeachable integrity, and he was always careful, that his conduct should respond to the exalted idea he entertained of his profession, of which he possessed such considerable knowledge, that his opinion might, at all times, be safely relied on. He was devoted to the investigation of principles, but he by no means under-rated the importance of practical knowledge and the study of details. He joined the Institution as an Associate in May, 1859, and if his life had been spared, he would probably have become a very valuable Member of the Society, among whom he had many friends.

MR. WILLIAM SAYCE was brought up as a Land Agent and Surveyor, in which capacity he held a high position at Abergavenny. He was, during several years, in partnership with his Brother, the late Mr. Morris Sayce, at Kington, in Herefordshire,

¹ *Vide* Minutes of Proceedings Inst. C.E., vol. xviii., p. 233.