

tising on his own account—until December 1872. In 1868 his competitive design was selected by the Camberwell Vestry for the construction of a bridge, with the approach roads, across the Surrey Canal at Peckham, known as “Taylor’s Bridge,” and which he carried into execution in the following year. Subsequently, in 1872, the Vestry intrusted him with the design and execution of the Globe Bridge and approach roads across the Rosemary branch of the same canal.

In 1871 he was engaged in the construction of bridges on the Bardonnechia and Susa section of the Mont Cenis railway. One, the “Comba Abscure,” is a lattice girder bridge, 184 feet long, spanning a chasm nearly 400 feet deep between the spurs of the Alps. The Direction of this line complimented him in a letter with reference to this bridge, remarking: “Though the difficulties which surrounded the erection of such important works on the flanks of the highest mountains in Europe were great and manifold, we have much pleasure in being able to state that from the commencement to the finish there was neither accident nor mishap of any kind, nor the slightest injury done to any workman engaged.” In January 1873 Mr. Dredge was appointed an assistant engineer on the Great Southern of India railway; and for several years was in charge of important sections of the line. In November 1875, whilst on the Madura section, Colonel Shaw Stewart, R.E., Assoc. Inst. C.E., inspected the unopened part of the Southern extension on behalf of the Government, which led the Governor in Council to express satisfaction with the laudable exertions of the officers of the company. In December 1875 Mr. Dredge went, in perfect health, on a short shooting excursion on the Pulney Hills. The extreme cold as contrasted with the heat of the plains brought on a severe attack of inflammation of the liver, from which he recovered sufficiently to return to England. The severity of the spring of that year, however, caused on his arrival a relapse, from which he never rallied, but gradually sank, and died on the 11th of May, 1876. He was elected an Associate of the Institution on the 4th of May, 1875.

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MR. FRANCIS STACKER DUTTON was born at Cuxhaven, on the Elbe, in 1818, his father being British Consul there. He received his preliminary education at Cuxhaven, and subsequently at the well-known seminary of Hofwyl, near Berne, in Switzerland, at that time under the care of Dr. von Fellenberg. Mr. Dutton at an early age turned his attention to business pursuits and

entered a commercial firm in Brazil, where he remained some time and laid the foundations of an experience which in later life proved of great service to him. Naturally of an energetic and enterprising mind the settlement of the Australian colonies offered attractions which could not be resisted; and he was, accordingly, among the first to land at the now flourishing city of Melbourne, then nothing but a barren space of land. After remaining there for some little time, Mr. Dutton proceeded to South Australia, with which colony he identified himself for the remainder of his life. He first became known by his book called "South Australia and its Mines,"<sup>1</sup> written shortly after his discovery of the Kapunda copper mine, near Adelaide, which was the first discovery of copper in Australia. Having succeeded in disposing of his interest in the mine, Mr. Dutton turned his attention to business; but this not succeeding, he associated himself with politics, becoming successively member of the Legislative Council of South Australia from 1851 to 1857 and a member of the House of Assembly from 1857 to 1865. Meanwhile Mr. Dutton was several times in office. He entered the ministry as Commissioner of Crown Lands, from September 1857 to June 1859, and again in July 1863, and was subsequently Commissioner of Public Works from March to September 1865. He formed two administrations, one in 1863, the other in 1865, the first having only eleven days' existence, and the second a career of six months; but at those times colonial cabinets were even more short-lived than at present. In 1862 he was appointed Special Commissioner to the International Exhibition in London, and in 1865 Agent-General in London for the colony of South Australia, holding the office continuously from that time down to his death. It was in this capacity that Mr. Dutton displayed the abilities which brought his name prominently forward amongst the different Australian representatives in London. As a legislator his name was identified with many beneficial measures, notably an Insolvency Act, which has proved of great value, and also a Ballot Act. The benefit of the latter Act, in a colony where the Radical element at elections was generally of a rather forcible nature, can be easily appreciated. The Ballot Act in this country was, to a certain extent, framed from the measure associated with Mr. Dutton's name. But in his capacity of Agent-General Mr. Dutton probably did his colony most service. He had the sole management

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<sup>1</sup> *Vide* "South Australia and its Mines; with an Historical Sketch of the Colony under its several administrations, to the period of Captain Grey's departure." 8vo. London, 1846.

of the financial operations of the colony; and during his term of office he brought out no less than twelve public loans, amounting together to about £3,000,000, every loan, with one exception, being a great financial success; and the present solid position of the South Australian securities in the London market is due in great measure to the efforts of Mr. Dutton. In his official relations with the home authorities Mr. Dutton was no less fortunate, his opinions commanding considerable respect; while in the commercial duties attached to the office the interests of the colony were carefully cared for and protected. The long and protracted negotiations with the British Australian Telegraph Company—which resulted in the construction of the line and cable which now connects Australia with the mother country—were conducted by him with consummate skill; and upon the opening of the line, in 1872, Mr. Dutton's services were recognised by his appointment to be a Companion of the Order of St. Michael and St. George. Mr. Dutton visited Vienna in 1873, as the colonial representative to the International Exhibition of that year, and was appointed by the Emperor of Austria to the second class or Knight Commandership of the Imperial Order of Franz Joseph. Besides these honours Mr. Dutton was also decorated by the King of Würtemberg. His death, which happened on the 25th of January, 1877, was undoubtedly accelerated by his devotion to the service of his colony; and in his loss the colony will mourn not only a zealous and honest servant, but also one who has done as much as any one to advance her interests and help her to that proud state of prosperity which she now enjoys. Mr. Dutton was elected an Associate of the Institution on the 6th of February, 1866, and constantly attended the meetings.

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Mr. DAVID FORBES,<sup>1</sup> F.R.S., late Secretary of the Geological Society, Foreign Secretary of the Iron and Steel Institute, &c., was born in Douglas, Isle of Man, on the 6th of September, 1828. He was the fifth son of the late Mr. Edward Forbes, banker, and the younger brother of the late Professor E. Forbes. His earlier education was conducted at the Athole Academy, Isle of Man.

When only nine years of age he was very studious, and took more

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<sup>1</sup> A very full memoir of Mr. David Forbes was included in the anniversary address of Professor P. Martin Duncan, as President of the Geological Society—*vide* Quar. Jour. Geol. Soc., xxxiii., 41. An obituary notice was also given in the Jour. of Chem. Soc., xxxi., 496; and similar notices have appeared in the "Geological Magazine," iv., 45, and in the "Chemical News" in December 1876.