

report on the civil and military engineering questions which had arisen on account of the recent inroads of the sea in the Island of Heligoland, and this report has been the basis of the subsequent works on the island. In 1859 he was appointed Commanding Royal Engineer in Ireland, and in 1863, on the resignation by Sir John Burgoyne of the post of Her Majesty's Inspector-General of Fortifications, Colonel Frome was named to succeed him; but on the Treasury raising some difficulties as to Sir John Burgoyne's retiring pension, Sir John was re-appointed to the post for a further five years, and Major-General Frome went out as Commanding Royal Engineer to Gibraltar, where as senior officer of the garrison he replaced the Governor, Sir Richard Airy, as Governor in his absence on leave at various times, and on the definite retirement of Sir John Burgoyne in 1868 he succeeded that officer as Her Majesty's Inspector-General of Fortifications and Head of the Corps of Royal Engineers. He continued as Inspector-General till the office was abolished by Mr. Cardwell, when he was offered and accepted the Governorship of Guernsey. Since his retirement from active service he has retained the keenest interest in his old profession.

General Frome was elected an Associate of the Institution on the 15th of May, 1838, and was unanimously nominated by the Council as an Honorary Member, to which position he was elected on the 4th of February, 1890. He lived to express, through his daughter, his gratification at the honour done him, but a few days later his long and distinguished career was peacefully ended.

WILSON BELL was born at Glasgow on the 29th of May, 1839. His father, Thomas Bell, was a merchant of that city, and the son was educated first at the Grammar School at Renfrew, and subsequently at the Grammar School at Paisley. He was articled to Mr. Martin, a civil engineer practising in Glasgow, and had the advantage of attending the engineering classes under Professor Rankine at Glasgow University.

After the expiration of his pupilage he obtained an appointment on the Recife and São Francisco Railway, in the Province of Pernambuco, Brazil, of which the late Mr. W. M. Peniston was the Chief Engineer. The coast section of the line had then been completed and opened for traffic, and Mr. Bell was posted to one of the upper sections as Assistant Engineer, remaining there till the undertaking was completed. On coming home in 1863, he accepted employment in Russia, but being offered an appointment on the

staff of the Great Indian Peninsula Railway he returned to England, leaving for India in March, 1864. He was first employed as Assistant Engineer on survey work between Sholapur and Hyderabad, and later on the construction of the line between Sholapur and Gulbarga under Mr. Sherwood, Messrs. Adamson and Clowser being the contractors. In May 1867 he was transferred to the section between Gulbarga and Raichur, under Messrs. R. M. Brereton and J. Preston. In March 1868 he was promoted, and in February 1869 was appointed District Engineer of the portion of the railway between the Bhore Ghât and the junction with the Madras Railway at Raichur. His reputation as an able and energetic officer was now well established, and in order to secure the earliest possible opening for the line, he was placed by the late Mr. H. P. Le Mesurier, C.S.I., in independent charge of the unfinished construction works between Sholapur and Gulbarga, in addition to the ordinary duties of his office. The confidence placed in him was fully justified by the result, the works were pushed on with vigour, and the value of his labours was fully recognized by the Board of Directors, the agent, and the Government of Bombay. In a resolution of Government, dated the 17th of January, 1870, it was stated :—

“It has given Government pleasure to note the remarkable progress of the works between Sholapur and Gulbarga during the last three months. The arrangements made by the agent, and the energy and vigour with which the works were carried out by the resident and assistant engineers, have been most creditable. If a proposal is made by the agent and London Board of the company to recognise by a pecuniary reward the exertions of the officers engaged on the contract, Government will be prepared to accede to a special grant of Rs. 10,000 being made for distribution between the Resident Engineer, Mr. Wilson Bell, and the different assistant engineers on the contract in a proportion to be determined by the agent.”

When in April, 1874, the post of Chief Resident Engineer of the company in India became vacant, on the retirement of Mr. J. R. Manning, Mr. Bell was selected to fill it, and he continued to hold it till his death, having twice in the interval held the appointment of Acting Agent of the Company during the absence on furlough of Mr. G. A. Barnett, C.I.E. In 1881 the first signs of failing health made themselves apparent, and Mr. Bell was compelled to take leave on sick certificate for seventeen months. He returned to India with improved health, but in 1886 he was again obliged to leave the country, his many friends then feeling that he would never again be able to resume his duties. He did, however, return to India in November 1887, but in completely broken health, medical opinion being that the stimulus of work would probably

lengthen his life. His indomitable spirit sustained him, and of no man can it be more truly said that he died in harness. His mental powers remained unclouded to the end, and he faced the inevitable with singular courage and resolution.

As an engineer Mr. Bell's reputation must rest on the results of his labours as a maintenance officer. It chanced that there are no great works the conception of which he can claim. The best years of his professional life were spent as Chief Engineer of the parent Indian railway, and from end to end it bears the impress of his well-matured judgment and earnest devotion to duty. In the system of continuous renewals, in the vastly improved class of work he insisted on, in the order and system introduced in the records of maintenance expenditure, and in the leading position held by the railway among Indian lines, are the proofs of his grasp of professional questions, and the breadth and soundness of his views. A man of an extremely self-reliant type, and himself an unsparing critic, he seldom sought the advice of others, and was careless of adverse opinion. He read little, was a deep thinker, and having formed his judgment on the question before him he carried out his views unflinchingly. A genial host, a staunch friend, prompt to recognise in others the gifts that were his own, he was followed to his grave by the regrets of a wide circle of friends. The Company he served so well lost in him a loyal and faithful servant, and an able adviser.

Mr. Bell was a Fellow of the University of Bombay, and was nominated by Government in 1883 as a member of the Municipal Corporation. He was much pressed by Government to accept the Chairmanship of the Town Council, but being always unwilling to step outside the immediate sphere of his duties, he declined the position. He was a member of the Commission appointed by the Government of Bombay in 1877 to determine the best scheme for the drainage of the city.

Mr. Bell died at Lanoli on the 27th of November, 1888, and was by his own desire interred in the churchyard at Igutpuri, the picturesque station at the summit of the Thul Ghât incline. He was elected a member of this Institution on the 3rd of February, 1874.

ALAN BREBNER, son of Alexander Brebner, builder, was born at Edinburgh, in August, 1826. He was educated at the High School of Edinburgh, and before beginning his studies as a civil engineer, served a regular apprenticeship as a mason, thereby