

undertaking at Pernambuco, Brazil. In 1875 he established a consulting practice at Manchester, which he carried on until his death. He was recognized as one of the leading authorities on gas engineering, and was the author of a standard text-book and other technical memoirs, as well as of various literary works in prose and verse. He was a founder and past-president of the Institution of Gas Engineers.

Mr. Newbigging was elected an Associate of The Institution on the 5th April, 1870, and was transferred to the class of Members on the 30th April, 1878.

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BERNARD BROTHERTON HARKER, born on the 19th October, 1862, at Poole, Dorset, died at Hong Kong on the 4th December, 1913. On completing an apprenticeship with Messrs. Waring Brothers, of Westminster, he was engaged on railway and waterworks contracts in Argentina and Brazil. In 1894 he went to Hong Kong, where, at first under Mr. Danby, and later independently, he carried out extensive architectural and engineering works, remaining in practice until his death.

Mr. Harker was elected an Associate Member of The Institution on the 7th April, 1903.

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COSMO REYNOLD JONES, born at Llanfyllin, N. Wales, on the 9th August, 1877, died on the 16th March, 1914, at Aliwal North, Cape Colony. After serving a pupilage to the late Mr. George Owen, he was engaged for several years on the Cambrian Railways. In 1903 he entered the service of the Capetown Corporation and was employed on the new waterworks scheme, but relinquished this work in 1909 to join the staff of the Central South African Railways, assisting in the survey and construction of various branches of that system until his death.

Mr. Jones was elected an Associate Member of The Institution on the 8th January, 1907.

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WILLIAM GEORGE KIRKALDY, who died at Aberdare Gardens, Hampstead, on the 10th April, 1914, was the son of the late Mr. David Kirkaldy,<sup>1</sup> the pioneer of systematic testing of engineering materials. Born on the 6th July, 1862, he was

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<sup>1</sup> See Memoir, Minutes of Proceedings Inst. C.E., vol. cxxviii, p. 351.

educated at University College School, and was trained under his father at the works in Southwark Street. On attaining his majority he was taken into partnership, and thereafter he was constantly occupied with a great variety of testing and experimental work and valuable research until his death. In 1899, in conjunction with the late Sir W. C. Roberts-Austen, he read a Paper before The Institution on "The Effects of Wear on Steel Rails,"<sup>1</sup> for which he was awarded a Telford premium, and he also took part in various discussions. He was a member of a number of technical societies and served on various committees. His services were undoubtedly of considerable benefit to engineering, and his death removes a kindly and widely respected personality from the ranks of the profession.

Mr. Kirkaldy was elected an Associate Member of The Institution on the 6th December, 1898.

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HUGH GORDON McEWEN, B.C.E. (*Melbourne*), born on the 1st April, 1877, died at Casterton, Victoria, on the 7th March, 1914. After graduating at Melbourne University, he went to Johannesburg, and was occupied on the town sewerage scheme and other work until 1908, when he returned to Victoria. On completing some irrigation work under Mr. Elwood Mead, he was appointed in 1909 Shire Engineer of Glenelg, a post which he held at his death.

Mr. McEwen was elected an Associate Member of The Institution on the 4th February, 1913.

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PHILIP MORRIS PRITCHARD, born in London on the 29th April, 1872, died at Widnes on the 8th July, 1914. Trained under Messrs. R. and W. Hawthorn and Company, Newcastle-on-Tyne, he was later employed as Assistant Works Manager at the Tennant works of the United Alkali Company. In 1896 he was appointed Assistant to the Chief Engineer of the Company at Widnes, and eventually in 1903 became Chief Engineer, a position which he held up to the time of his death. During this period he designed and erected new plant in the English and American factories, and did valuable work in the Spanish mines.

Mr. Pritchard was elected an Associate Member of The Institution on the 6th December, 1898.

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<sup>1</sup> See Memoir, Minutes of Proceedings Inst. C.E., vol. cxxxvi, p. 141.