

Grammar School, Birmingham, in Germany, and lastly at the École Centrale in Paris. He was articled to the late Mr. J. R. McClean, Past-President Inst. C.E., and was employed on the South Staffordshire and the Birmingham, Wolverhampton and Dudley Railways. In 1855 he went to the Crimea as one of the engineers of the Army Works Corps, under the late Mr. W. T. Doyne, M. Inst. C.E. Subsequently he took great interest in the railway schemes of the River Plate; he then became a merchant, bought an estate in Entre Rios, and remained for several years in the Argentine Republic. In 1866 he returned to England, carried on a business in Birmingham, and became director of the Central Argentine Railway, the East Argentine Railway, the City of Buenos Ayres Tramways, the Buenos Ayres and Rosario Railway, the La Guaira and Caracas Railway, the Puerto Cabello and Valencia Railway and the Heberlein Brake Co. Mr. Shaw took great interest in the question of narrow gauge railways for sparsely populated countries and for military purposes.

He was a great traveller, and had visited, outside the continent of Europe, Turkey, Egypt, Asia Minor, and Persia. In June, 1886, he returned ill from a journey round the world through India, China, Japan and the United States, and after much suffering died at Sydenham on the 2nd of July, 1887, and was buried at Lingfield, Surrey.

Mr. Russell Shaw was elected an Associate of the Institution on the 1st of May, 1866.

HENRY BAYLEY, senior Managing Director of the Peninsular and Oriental Steam Navigation Company, was born at Ipswich in November 1826. He came of an old shipbuilding family settled on the banks of the Orwell, his grandfather, Jabez Bayley, having been well known as the builder of the noted "Orwell," and other renowned Indian trading-ships for the Honourable East India Company, as also of some wooden line-of-battle ships for the Royal Navy.

In 1843 Henry Bayley commenced his early training for a business career in a mercantile house at Liverpool. Two years later he entered the service of the Peninsular and Oriental Company, then in its infancy, and rose in 1857 to the position of Assistant Manager, and in 1867 to that of Managing Director. The engineering work connected with the Company's operations at all times engaged a large portion of Mr. Bayley's attention. During a tour of inspection in 1863, to the Company's establish-

ments at Calcutta, Madras, and Bombay, and more especially their important repairing-yard and shops for their fleet at the latter place, Mr. Bayley took a specially active interest in the work of deepening the rock channel of the Company's dry dock at Bombay, a work of considerable difficulty, but which was successfully carried out under the advice of Mr. James Abernethy, Past-President Inst. C.E. During the forty-two years of Mr. Bayley's connection with the Peninsular and Oriental Company, he watched and aided the development of steam navigation in all the changes and vicissitudes inseparable under the conditions of transition from the paddle-wheel to the screw-propeller, and which resulted in the acceleration of the British mails and communication with the "Far East" upon the scale of its present conspicuous magnitude.

Mr. Bayley was also Chairman of the Marine and General Mutual Life Assurance Society, succeeding to that position upon the retirement of the Right Hon. Hugh Childers, M.P. (late Chancellor of the Exchequer). He was likewise a member of the Honourable Company of Shipwrights of the City of London, and was Chairman of West's Patent Press Company, which possesses numerous cotton-presses at various stations in British India.

It would be impossible to separate the career of Henry Bayley from the consideration of that commanding Company with which his life's work was identified. The terrible accident which terminated in his death on the 7th of July, 1887, occurred before the public rejoicings for fifty years of surpassing national progress had well nigh terminated, but his active life had spanned more than four-fifths of that Jubilee period. The development of the Mail Services with India, with the Colonies, with China and Japan, in those forty-two years, had arisen, taken concrete form, and been perfected under the administration of which Henry Bayley was a conspicuous and typical member. Begun by Waghorn, and further extended through the Suez Canal, the overland route has become a beaten track. Passengers, specie and cargo (and Troops, in the eventful moment of the Indian Mutiny), passed over the lines of the Peninsular and Oriental Company between England and her Indian empire, and her farthest settlements in Australia and New Zealand, and the Managing Directors controlled the action of a large and powerful fleet navigating uncertain seas in two hemispheres. In the conduct of these large operations Henry Bayley was brought much in contact with leading mercantile men, and not infrequently with government officials, with the result that his uniform and consistent courtesy, and lofty sense of integrity, obtained for him the esteem and the respect of all. Within the sphere of the administration

of the large commercial undertaking, the prosperity of which he had laboured to achieve, no limit can be assigned to the affectionate regard in which he was held by his colleagues, and by the numerous servants and officers of the Company ; indeed, his one Epitaph from them all may be summed up in their own words, "Nobody like him!"

Mr. Bayley was twice married, but left no children to bewail his untimely loss, through a carriage accident, which resulted in two deaths out of the three persons involved in it. Mr. Bayley was elected an Associate of the Institution in December 1885.

ALEXANDER ANGUS CROLL — for many years well-known in city circles as Colonel Angus Croll—belonged to a Scotch family whose records go back to 1659. His grandfather, Robert Croll, was admitted a Burgess of Montrose on the 19th of September, 1739. His father, George Croll, established himself in Perth, under the auspices of the British Linen Company, as a weaver's-reed maker. In that city Alexander Angus Croll was born on the 16th of May, 1811, the youngest son of a second marriage, the father being at the time seventy years of age, and dying two years later. He attended a school kept by Dr. Dick (the author of several well-known works), and was apprenticed at the age of twelve to his eldest half-brother, George Croll, to learn their father's business. It was a hard and cruel apprenticeship, during which his earnings were given to his mother, and his evenings were spent in making bird-cages and other articles, in that way obtaining money to pay the fees for attendance at evening classes, where he managed to gain a knowledge of mathematics, elocution, and other subjects. During his apprenticeship the works were carried out for supplying his native town with gas, and he watched with intense interest the process of laying the mains and services, the construction of the gasholder, &c. Boy-like, and regardless of the nuisance caused by his experiments, he proceeded to construct a model gasworks on his own account, with such rude appliances as were at his command, and occupied all his spare time (and probably some that he ought not to have spared) in the consideration of his hobby. One day his master surprised him at the work, and with hard words and harder blows, confiscated the little apparatus. On the expiry of his indentures, Angus Croll settled in Dundee as a reed-maker, and with such measure of success as emboldened him to carry into effect a