

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

cherished object of going to London, there to embark in the, to him, fascinating pursuit of the distillation of coal. He arrived in the early part of 1836, and established himself, tentatively, as a chemist at Millwall. Two years later he took out his first patent, No. 7,748, dated July 26, 1838, for "Improvements in the manufacture of gas for the purpose of affording light." This was followed by No. 8,253 of November 2, 1839, "Improvements in the manufacture of gas, and in converting the salts used in purifying gas, and improvements in the manufacture of ammoniacal salts." But reverses came, and he lost all his capital. Thereupon he sought and obtained the post of second engineer at the Brick Lane Station of the Chartered Gas Company. Here he found his true work, and remained for six years amid congenial surroundings, fulfilling his duties to the great satisfaction of the Directors, who showed their appreciation of his services in a practical form by periodically increasing his salary. He took great interest in the condition of the men under his charge, and laboured long to induce temperate habits among them. He enlisted the aid of Father Matthew, who on one occasion delivered an address to the men, and induced many of them to sign the pledge. Thirst-quenching beverages were provided at the works, and as a result of his endeavours Mr. Croll had the happiness of seeing comfortable homes and well clothed families where formerly poverty, misery, and rags were the rule. When he left the Chartered Company the men gave him a massive silver snuff-box as a token of their appreciation of his efforts on their behalf. While occupying this position he presented to the Institution a Paper on the "Purification of coal-gas, and the application of the products thereby obtained to agricultural and other purposes."¹ This communication was highly thought of, and obtained for its Author one of the two Telford medals awarded that Session.

Mr. Croll next became lessee of the gasworks at Coventry, Tottenham, and later at Winchester. He also made many visits to the continent in connection with the introduction of gas, and was much engaged in Holland. On one of his tours, being at Copenhagen, he had the honour of an interview with the King of Denmark, and was also entertained by the great sculptor, Thorwaldsen, then at work on the celebrated group "Night and Morning." Visiting the prison of this capital, there was pointed out to him a prisoner who was allowed to work at his own trade—that of a watchmaker—for the support of his wife and children. This circumstance made a great

¹ Minutes of Proceedings Inst. C.E. vol. iii. p. 290.

impression on Mr. Croll, and he afterwards paid much attention to prison life and discipline, and wrote a pamphlet on the subject, which was published in 1870.

During the years between 1849 and 1852 considerable agitation was afoot concerning cheap gas for the people. The price of gas had recently been reduced from 7s. to 6s. per 1,000 cubic feet, and great efforts were being made to induce the companies to consent to a further reduction. Into this movement Mr. Croll threw himself with characteristic energy. As a principal result the Great Central Gas Company was started. He was for several years the mainstay of this undertaking, which was floated by his money, and maintained only by his indefatigable exertions. After he had made himself personally responsible for the success of the concern, the contractors, operated upon by subtle unseen influences, withdrew from their contract, and faint-hearted Directors made his position almost untenable. Nevertheless he persevered; in three months 60 miles of mains and 40 miles of services were laid, the work being carried on day and night; and to the hour of his promise he gave the citizens the gas contracted for at the price of 4s. per thousand. The mains laid were so large that a workman was enabled to pass through the entire line from Bow to the City, at the same time laying an electric wire in the pipe, which, it is believed, formed the first application of telegraphy to private purposes. This enterprise he finally conducted to a most successful termination, and he had the satisfaction of seeing the new association take up a strong position, and hold its own against the competition of the older companies, until it was eventually incorporated with the Chartered Gas Company. To Mr. Croll is mainly due the institution of the Metropolitan Gas Referees, and the modern system of gas-testing on behalf of the public, and while Chief Engineer of the Surrey Gas Consumers Association he had much to do with the so-called "districting."

Mr. Croll was elected an Associate of the Institution on the 4th of April, 1843, his connection with the society thus extending over forty-four years. He was Sheriff of London and Middlesex in 1852-53, and was also appointed a Magistrate for Middlesex and Westminster, and in 1857 became a Deputy-Lieutenant of the City of London. He was likewise a Magistrate for Surrey, and was in many ways interested in philanthropic and Christian work. He also took great interest in the Volunteer movement, and was for many years Honorary Colonel of the 2nd Tower Hamlets Engineer Volunteers.

Although mainly directed to the improvement and extension of

gas-supply, Mr. Croll's energies were not exclusively devoted to that branch of engineering. He was for a long time connected with the United Kingdom Electric Telegraph Company, and finally became its Chairman. He rendered most important service to the late Mr. Frank Ives Scudamore in the course of the negotiations between the Government and the Telegraph Companies prior to their transfer; and while arranging for every officer of the United Kingdom Company to receive compensation, he asked for nothing, and received nothing himself. In recognition of his services in this business, a splendid piece of plate was presented to Mr. Croll, which is now to be seen in the Guildhall Library. The handsome pile of buildings in Coleman Street and Basinghall Street, City, known as the Wool Exchange, was erected by Mr. Croll, he having leased the land from the Merchant Taylors' Company, and planned and carried out the whole block, with its fine sale-room, the mart of the Colonial wool-trade. His last active work, as almost his first, was in connection with a patent for the production of sulphate of ammonia. He had matured every detail of his new process by daily experiment, and made his last test on the 14th of May, 1887. Three weeks later, on the 7th of June, his well-filled life came to an end. He died at Dunblane, N.B., not far from his birthplace.

MAJOR-GENERAL IRWIN MONTGOMERY GREIG, of the Royal (late Bombay) Engineers, died on the 4th of July, 1887, at Hyde Park Mansions, London, and was buried at the Kensal Green Cemetery, many of his brother officers attending the funeral. The deceased officer joined the service of the Honourable East India Company on the 9th of December, 1852, having been a cadet at Addiscombe. After serving at the Royal Engineer establishment at Chatham for two years, he proceeded to India, arriving in Bombay on the 1st of January, 1855. He was appointed an Assistant Engineer in the Public Works Department, Bombay, and was employed at Aden and Perim from October, 1855, to July, 1859, in the construction of masonry forts, tanks, barracks, tunnels, &c. He joined the expedition into Arabia in 1858, being present at the storming of the Arab village and fort of Sheik Othman. Between 1859 and 1862, he served as executive engineer in Poona, Khándesh, and the Northern Konkan districts, where works of irrigation and road construction were in progress. From February, 1862, to September, 1863, he was