

tunity of using this power; and while always placing work before pleasure, his love of nature gave him that change of labour which to such minds is recreation. Comprehensive in his tastes; able with all the aids at his command, especially pen and pencil, he was ever ready to amuse or instruct even a child; and duty being always paramount, his genial character served him in making the way of life pleasant as well as consistent.

He was elected an Associate on the 7th of April, 1871, and was transferred to the class of Member on the 13th of December, 1887.

CHARLES MARKHAM¹ was the son of Mr. Charles Markham, Solicitor and Clerk of the Peace for the County of Northampton, and was born on the 1st of March, 1823. He was educated at Oundle School, and subsequently at Edinburgh University. It had been intended that he should follow an agricultural career, but his bent being towards mechanics, he went to France, and became Manager of the Marquise Rolling Mills, between Calais and Boulogne. The Revolution of 1848 destroyed this industry, and Mr. Markham returned to England and studied chemistry for twelve months under Professor Scoffern. He then served a pupilage under Mr. John Hunter, on the Eastern Counties Railway, and in 1852 entered the service of the Midland Railway Company, as an Assistant in the Locomotive Department at Derby. Here he rapidly rose, becoming Assistant Locomotive Superintendent under Mr. Matthew Kirtley. While occupying this position, Mr. Markham conducted a series of experiments on the use of coal in locomotive-engines, that led to the total disuse of coke in the engines of the Midland Company, whereby that undertaking was saved nearly £50,000 a-year. Other workers in the same field shared with him the honour of this great advance; but Mr. Markham's part in it was acknowledged to be a leading one, and his Paper, read before the Institution of Mechanical Engineers,² marked a new era in locomotive practice.

In 1863 the Staveley Coal and Iron Works, which had been extensively developed by Mr. Richard Barrow, were transferred to a Limited Company. Mr. Markham accepted the post of Managing Director, and left Belper, where he had lived for some years, to take up his residence at Brimington Hall. No better choice for such a post could have been made. Mr. Markham was gifted

¹ The substance of this notice is taken from the Derbyshire local press of August and September, 1888.

² Institution of Mechanical Engineers. Proceedings, 1860, p. 147.

with a thorough business capacity; he had had a wide and far-reaching experience, and he worked with an energy and zeal which could hardly have been surpassed had the concern been his own. At the same time, under his superintendence, and the direction of competent officials who had the immediate oversight of the various departments, nothing but work of the best quality—both as to material and execution—was turned out. The result was that a connection was built up which sustained the Company through the trying and prolonged period of commercial depression, which proved disastrous to so many undertakings of a similar character, and enabled it to pay its shareholders, in the worst of times, a fair interest for the money they had invested. Shortly after the formation of the Company, an opportunity was afforded to those of the shareholders who desired to avail themselves of it, of inspecting their newly-acquired property. An interesting gathering assembled, and after the visitors had been conducted over the works, and had examined the surface managements at several of the principal collieries, they were entertained to dinner in the Workmen's Hall at Barrow Hill. Mr. Barrow himself presided, and Mr. Markham was one of the speakers. Mr. Barrow referred in terms of pardonable pride to the growth of the works under his management, pointing out that the output had increased from 50,000 tons of coal and 15,000 tons of castings in 1844, to 700,000 tons of coal and 20,000 tons of castings in 1864. During Mr. Markham's management the development continued, though the ratio of increase, in consequence of the exigencies of keen and constantly-extending competition, had hardly been the same, the output at the time of his death being over 850,000 tons of coal, and 40,000 tons of castings. Mr. Markham's devotion to business prevented him taking a very active part in public affairs in the district, but when once he undertook a duty, he always performed it with assiduity and thoroughness. He was made a County Magistrate in 1869, and while health permitted he attended the Quarter Sessions for the county, and the local petty sessions, with exemplary regularity, and always manifested the utmost anxiety to administer even-handed justice.

Mr. Markham took a deep interest in the welfare of the Chesterfield and North Derbyshire Hospital, of which he was one of the Vice Presidents. It was chiefly through his instrumentality that the area covered by the operations of this institution was divided into districts, each returning a working man to act upon the Board of Management. He was one of the leading members of the Iron and Steel Institute; he however disapproved of the forma-

tion of local institutes, believing that the necessities of the case were met by institutes of a national character, and hence he took no part in connection with the Chesterfield and Derbyshire Institute of Mining Engineers. The erection of the Stephenson Memorial Hall was also in opposition to his views, and he declined to assist it by a contribution; but on the day when the building was opened, he forwarded a cheque for £100, for the purpose of providing a supply of books for the Free Library of the borough, which was located in a portion of the building.

The poor always found a warm friend in Mr. Markham, and for several years he forwarded donations to provide Christmas treats for the inmates of the Chesterfield Union Workhouse, and the children in the Industrial Schools. In 1880 he gave a donation of £1,000 to his native town of Northampton, to found a "Markham Memorial" in memory of his parents. By Mr. Markham's wish, the money was devoted to providing prizes for Board and other Schools in Northampton, and to adding to the Free Library. Mr. Markham became some years ago the purchaser of Tapton House—where the last days of George Stephenson were spent—and he then removed from Brimington Hall to Tapton House, where he afterwards resided.

Towards the end of 1887, Mr. Markham's health began to fail; and the death, shortly afterwards, of a son to whom he was much attached was a blow from which he did not seem to rally. He died on the 30th of August, 1888, in his sixty-sixth year.

Mr. Markham was elected a Member of the Institution on the 6th of April, 1864.

JULIUS PAZZANI was born on the 16th of June, 1841, at Brunn, Austria, where his father, who was a Greek by birth, had settled on becoming a naturalized Austrian subject. The younger Pazzani was educated at the Imperial Polytechnicum of Vienna, and in due time passed the principal examinations. In 1861, he entered the service of the Imperial Continental Gas Association as junior assistant at their Erdberg works, Vienna. In 1868, he became Engineer of the Belvedere works of the same company, also in Vienna, which he entirely reconstructed, and greatly extended, insomuch that of what he found there, nothing remained in a few years. In 1880, Mr. Pazzani was transferred to the Rotterdam station of the Association as Chief Engineer. Here he rebuilt the Delfshaven works, and generally reorganized the business of the company. Four years later, in 1884, he was