

ture, two may be specially mentioned; the first a Paper on "Electricity in the Service of Mankind," read in 1879, and the second a Paper on "The Natural History Period," published in 1886. In the latter Paper he explained the necessity of continually extending experimental researches in physical science and carried out this theory by presenting the German empire with a site on which the Physical Technical College has since been erected. In 1889 he published a most valuable and interesting account of his scientific and technical work.¹

Among the marks of recognition he received, the patent of nobility bestowed upon him by the Emperor Frederick should be specially mentioned. He valued also greatly his election as an Honorary Member of the Institution on the 1st of March, 1892.

A few days before his death, which occurred on the 6th of December, 1892, Werner received from the printer the first copies of his Autobiography, from which the foregoing facts have been collected.

JOSEPH NAPOLEON DU BARRY² was born at Bordentown, New Jersey, on the 19th of November, 1830. His father was Mr. Edmund L. Du Barry, a surgeon in the United States Navy, and his mother, who survives him, was the daughter of Mr. William Duane, editor of the Philadelphia *Aurora*. After attending schools in his neighbourhood, young Du Barry was sent to Washington, where he received a classical education. In June, 1847, when only seventeen years of age, he entered the service of the Pennsylvania Railroad, being employed in the engineering department as a rodman. For three years he was engaged on the preliminary surveys and location of the line between Altoona and Pittsburgh, the most mountainous section on the whole road. The difficulties of construction over the main ridge of the Alleghany Mountains were great, and these three years spent in the then mountain wilderness of Western Pennsylvania served as an invaluable school for the young man and developed not only the skill but the strength of purpose and fertility of resource, which made him capable of assuming and faithfully discharging the responsibilities which were afterwards placed upon him. In 1850

¹ "Wissenschaftliche und technische Arbeiten, von Werner Siemens." Berlin, 1889.

² This notice is taken, with some slight alterations, from the *Railroad Gazette* of New York, 23 December, 1892. In the Library of the Institution is a copy of a memoir subsequently printed for private circulation.

Mr. Du Barry was made Assistant Engineer of Construction. From May, 1852, to May, 1853, he was Principal Assistant Engineer of the Sunbury Division of the Sunbury and Erie Railroad, having charge of surveys and of the location of new lines. From May, 1853, to the spring of 1856, he was Principal Assistant Engineer of the North Pennsylvania Railroad, during its location and construction, and then for a short time Assistant Engineer on the works of the Sand Patch tunnel on the Pittsburgh and Connellsville line.

In May, 1856, Mr. Du Barry was appointed Principal Assistant Engineer of the South Western Branch of the Pacific Railroad of Missouri, which position he held until September, 1858, when he again returned to the service of the Pennsylvania Company as Superintendent and Engineer of the Western Division of the Pittsburgh, Fort Wayne and Chicago branch, which was constructed through to Chicago under his direction. Upon the completion of this work Mr. Du Barry was made Superintendent of the Western Division, extending from Crestline to Chicago, 280 miles. He held this position until December, 1861, when he was appointed General Superintendent of the Northern Central line, which responsible post he filled with great credit to himself and to the company during the exciting period of the War of the Rebellion. At that time the Northern Central was a main artery through which troops and provisions were transported to the Union Army in the South. To prevent the road falling into the hands of the Confederate Army under General Lee, in its march into Pennsylvania in the Gettysburg campaign, which would have given Lee an opening towards Harrisburg and Philadelphia, all the bridges on the York Division, some twenty in number, including the long Columbia Bridge, were destroyed, and upon Mr. Du Barry devolved the important work of their reconstruction. After the battle of Gettysburg, he was one of the first to respond to the cry for assistance for the thousands of wounded soldiers on the field. Fitting up a relief train, he started with it from Baltimore for the scene. Innumerable difficulties confronted him on this errand of mercy, but all were overcome, and when he returned to that city he carried hundreds of the wounded with him.

In July, 1867, Mr. Du Barry was elected Vice-President of the Northern Central, and Baltimore and Potomac Roads, and removed from Harrisburg to Baltimore. While occupying this responsible position he had under his supervision the construction of the Baltimore and Potomac tunnel under the City of Baltimore, a difficult and costly piece of work. In February, 1875, he was elected Assistant to the President of the Pennsylvania Railroad, his duties

being to assist the President in all engineering questions pertaining to the construction or improvement of any of the properties owned or operated by the company. In October, 1882, Mr. Du Barry was promoted to the position of Third Vice-President, having general supervision of all construction work. He also had charge of the promotion and construction of all new lines in which the Pennsylvania was interested. During his service as Assistant to the President and as Third Vice-President, Mr. Du Barry directed the construction and reconstruction of many railroads. The revision of the line and grades of the Western Pennsylvania Road occupied his attention for several years. One of the longest lines, and perhaps the most important, constructed under his direction, was the Pennsylvania Schuylkill Valley Road, completed in 1885. This Road extends from Philadelphia up the Valley of the Schuylkill River to the top of Broad Mountain, beyond Pottsville, Pa., a distance of over 100 miles, and now forms a division of the Pennsylvania system. He also built the Germantown and Chestnut Hill Road and the Trenton Cut-off.

On the resignation of Mr. Edmund Smith as First Vice-President of the Pennsylvania in June, 1888, Mr. Frank Thomson was appointed to fill the vacancy, and Mr. Du Barry was elected Second Vice-President. In this capacity he had under his direction the treasury and insurance departments, with general supervision of all the financial matters of the numerous corporations in which the Company has a pecuniary interest. He also had charge of all construction work.

Mr. Du Barry died suddenly at his home in Philadelphia on the 17th of December, 1892, the cause of death being attributed to valvular disease of the heart. As a practical railroad man he had few equals. As a private individual he was held in high esteem, his nature being such as to make him a favourite among a large circle of friends. He possessed a strong and distinctive personality, a genial and pleasant temperament, and a rugged honesty, traits which were apparent throughout his life, at his office and in his home.

Mr. Du Barry was a Member of the American Society of Civil Engineers, and was elected a Member of this Institution on the 1st of March, 1892.