

**NOTES ON THE INTERNAL
IMPROVEMENTS OF PENNSYLVANIA
AND REMINISCENCES OF THE FIRST
RAILROAD OVER THE ALLEGHENY
MOUNTAIN, PP. 1-82**

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BY W. HASELL WILSON, C. E.
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FIRST RAILROAD OVER THE ALLEGHENY MOUNTAIN,

By SOLOMON W. ROBERTS, C. E.

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INTRODUCTORY NOTICE.

The growing interest in the early history of the public works of Pennsylvania ensured such an earnest appreciation of the valuable articles appended, while they were appearing in consecutive numbers of the RAILWAY WORLD, during 1878, that we have received numerous applications for their publication in pamphlet form.

In responding to their request, we have deemed it fitting to briefly record some of the leading features of the professional careers of Mr. Wilson and Mr. Roberts, for the purpose of showing their peculiar qualifications for the useful task they have so well performed.

Mr. W. Hasell Wilson, in addition to his prolonged service in connection with the railway system of Pennsylvania, is the descendant and progenitor of a race of distinguished civil engineers and architects.

His grandfather, Lieutenant John Wilson, who was the son of an architect at Stirling, Scotland, served in this country during the revolutionary war, as an officer of the 71st Highland Regiment, on engineering duty, and assisted Major Moncrief, of the Royal Engineers, at the sieges of Savannah and Charleston, South Carolina. Being severely wounded at the latter city, he continued to reside there some time after its capture, and at the termination of the war, married the daughter of a resident of Charleston, who was a native of Scotland. Lieutenant John Wilson subsequently returned to Stirling, where Major John Wilson was born, March 9th, 1788, and where he received the early portion of his education. It was supplemented by studies at the University of Edinburgh, where he became specially proficient in mathematics, drawing, and other branches appertaining to engineering. In 1807, after the death of Lieutenant John Wilson, his widow and her four children returned to Charleston, South Carolina (her native place), and her son, John Wilson, soon entered into business there as an engineer and surveyor. When the second war with Great Britain broke out he volunteered his services, as engineer, to his adopted country; and it is a singular coincidence that, in planning and supervising the construction of works for the defence of Charleston, he used the same drawing instruments, now in the possession of W. Hasell Wilson, that had been employed by his father when he was preparing plans for the attack upon that city made by British forces during the Revolutionary struggle.

Subsequently he was appointed Major in the United States Corps of Topographical Engineers, and in 1818, when the office of civil and military engineer of the Board of Public Works of South Carolina was created, he became the first incumbent of that position, which he continued to hold until 1832. In 1826 he removed to Philadelphia, where internal improvements then attracted much attention; and, in the spring of 1827, he was entrusted by the Board of Canal Commissioners of Pennsylvania with the important duty of examining a route for a canal between the Schuylkill and Susquehanna rivers, through Chester and Lancaster counties, with instructions to report upon the expediency of a

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railroad if he found the construction of a canal impracticable. For various reasons, he came to the wise conclusion to report against the canal and for a railroad. This action led to the construction of the Philadelphia and Columbia Railroad, in the location and construction of which important improvement Major John Wilson was actively engaged as Chief Engineer from 1828 until the winter of 1832, when his health became seriously impaired. During this period, with the consent of the canal commissioners of Pennsylvania, he located the line of the Camden and Amboy Railroad. He died February 27, 1833, in the harbor of Matanzas, where he had gone to strengthen his shattered constitution.

Mr. W. Hasell Wilson, son of Major John Wilson, was born at Charleston, South Carolina, in 1811, and, in 1828, he formed one of the party engaged, under the direction of his father, in locating the Philadelphia and Columbia Railroad. In 1829, when construction commenced, he was placed in charge of one of the sub-divisions as assistant engineer. In 1831 he was appointed principal assistant engineer on the eastern forty miles of the road, which position he continued to hold until the completion of the line in 1834. During the next five years he was successively engaged in conducting surveys for a proposed line of railroad from Reading to Downingtown; in the service of the Philadelphia and Reading Railroad Company, twenty miles of whose road, between Norristown and Reading, were finally located and constructed under his direction; and in acting as Chief Engineer on the Gettysburg Extension.

The interval, from 1839 to 1852, was devoted to agricultural pursuits, but, in the latter year, he resumed his profession, and, after being engaged in surveying a proposed new line between Philadelphia and Harrisburg, and in various other railway enterprises, in January, 1856, he entered the service of the Pennsylvania Railroad Company. After it purchased the Philadelphia and Columbia Railroad, in July, 1857, Mr. Wilson was appointed Resident Engineer of that line. In January, 1858, his division was extended to Mifflin, fifty miles west of Harrisburg, and in January, 1859, he was appointed Resident Engineer of the entire line of the Pennsylvania Railroad, from Philadelphia to Pittsburgh, with its branches.

In 1863 his title was changed from Resident to Chief Engineer. The constantly increasing duties of the maintenance of way, together with the large amount of new work devolving upon the engineer department, had, by the close of the year 1867, accumulated to such an extent as to render a division of labor necessary. A department of construction was accordingly organized, to take charge of all new work, which went into operation in January, 1868, and of which W. H. Wilson was made chief engineer, to report directly to the President of the company, with headquarters at Philadelphia. The maintenance of way constituted a separate department under the General Superintendent of the road, with headquarters at Altoona, and John A. Wilson, son of the former, who had been for several years chief engineer of the Philadelphia and Erie Railroad, was appointed chief engineer of maintenance of way.

During the succeeding six years a very large amount of new work was constructed, to provide increased facilities for the growing business of the company, embracing passenger and freight depots, water and coaling stations, additional tracks, an extensive set of new car shops at Altoona, piers and shutes for transferring coal at the Delaware river, and the straightening of several miles of road on the eastern portion of the Philadelphia division. At the same time the Construction Department had charge of a considerable amount of new work on the Philadelphia and Erie Railroad, and the Lewisburg, Centre, and Spruce Creek Railroad.

The financial panic in the latter part of the year 1873, caused a suspension of all new work, with the exception of finishing up that which was near completion, and at the end of the year the Construction Department was discontinued.

In November, 1873, W. H. Wilson was elected President of the Philadelphia and Erie Railroad Company, but was continued in the service of the Pennsylvania Railroad Company as consulting engineer, with the special duty of closing up the work previously under his charge, and completing the maps and engineering records of the road.

In July, 1874, he resigned the presidency of the Philadelphia and Erie Railroad, and was placed at the head of a new department of the Pennsylvania Railroad, entitled the Real Estate Department, which was entrusted with the charge of all the real estate on the lines of the Pennsylvania Railroad, the Philadelphia and Erie Railroad, and the United New Jersey Railroads as far as regarded the completion and arrangement of maps and records, the supervision of deeds and leases, and the settlement of taxes, together with such other matters as pertained to making the department a complete bureau of the real estate of the company.

This position Mr. W. H. Wilson still holds.

Mr. Wilson's three sons, John A., Joseph M., and Henry W., now associated as the firm of Wilson Brothers & Co., Civil Engineers and Architects, make the fifth generation in direct succession of the same profession.

Mr. Solomon W. Roberts was born in Philadelphia, August 2d, 1811, being the first child of Charles and Hannah (White) Roberts, both of whom were members of the Society of Friends. His paternal ancestors came from Wales, in the time of William Penn, and settled near Gwynedd, about eighteen miles north of Philadelphia, while his mother's father Solomon White, was a successful merchant in the same city.

When about sixteen years of age he left school and went to Mauch Chunk, Pennsylvania, where he entered the family of his uncle, Josiah White, the principal founder of the Lehigh Coal and Navigation Company, and acting manager and superintendent of their works. By him he was employed as an assistant. In the spring of 1827, under the direction of Josiah White and his partner, Erskine Hazard, the Mauch Chunk railroad was opened for use, and S. W. Roberts rode on the first train of cars sent over its line, which was the first train in Pennsylvania. The road was nine miles long from the anthracite coal mines at Summit Hill to the Lehigh river at Mauch Chunk.

In 1827 the construction of the Lehigh canal was actively begun, the chief engineer being Canvass White, and S. W. Roberts was a rodman in the corps.

He was soon promoted to be an assistant engineer, and he remained upon the line until the canal was completed, in the autumn of 1829, from Mauch Chunk to Easton, a distance of forty-six miles.

He then entered the service of the State of Pennsylvania, and removed to Blairsville, where he had charge of the construction of a division of the canal on the Conemaugh river between Blairsville and Lockport, including a large aqueduct of cut stone across the river at the latter place.

In the spring of 1831 the Portage Railroad over the Allegheny mountain was begun by the State. The chief engineer was Sylvester Welch,

and his principal assistant was Solomon W. Roberts, who led the exploring party, though but twenty years of age, on the western half of the line. This division included a tunnel 901 feet long, which was the first railroad tunnel in America, and the great viaduct over the Conemaugh at the Horseshoe Bend, which was designed and superintended by him, and which is still used as a part of the Pennsylvania railroad, located many years afterwards.

After the completion of the Allegheny Portage Railroad, with a double track, ten inclined planes and twenty stationary engines, he remained as its resident engineer and superintendent of transportation, thus beginning his career as a railroad superintendent.

He resigned from this position in 1836, and went to Europe to superintend the manufacture of railroad iron for the Philadelphia and Reading and other railroads. He was absent nearly two years, passing a large part of his time in the iron region of South Wales. In the spring of 1837, George Crane, an iron master at Ynisedwin, near Neath, succeeded in smelting iron ore on a practical commercial scale, by the use of anthracite coal and the hot blast, and his claims as the inventor of the process were finally fully established by the result of legal proceedings in England. Solomon W. Roberts visited Mr. Crane's works, became his friend, and sent over the particulars of his process to Josiah White, in Philadelphia, and to the Franklin Institute. Soon after Mr. White and his associates established the Crane Iron Works, on the Lehigh, and the smelting of iron ore with anthracite coal has since become one of the most important interests in Pennsylvania.

From 1838 to 1841, S. W. Roberts was the chief engineer of the Catawissa Railroad. In 1842 he was the president of the Philadelphia, Germantown and Norristown Railroad Company, and also its superintendent. After that he was, for three years, to 1846, the president of the Schuylkill Navigation Company, and formed the general plan for the enlargement of the works, by which the tonnage of the boats has been more than doubled.

In 1846 the act to incorporate the Pennsylvania Railroad Company was passed, and in 1847 the charter was issued. S. W. Roberts took a lively interest in the organization of the company, and he was offered a prominent position in its service, which he declined; but, at the instance of the directors, he consented to become a candidate, and was elected one of the representatives of the city of Philadelphia, in the Legislature of the State. He served in that capacity in the session of 1848, and had charge of the railroad bills in which the city was interested. His long experience in railroad matters, and his facility in public speaking on topics connected with his professional pursuits, enabled him to be of good service; and legislation important to Philadelphia, the Commonwealth, and the Pennsylvania Railroad, was obtained at that time.

An act was also passed to incorporate a company to construct the "Ohio and Pennsylvania Railroad," from Pittsburgh to the Ohio State line. In 1848 Mr. Roberts became its chief engineer, and located the road not only to the State line, but beyond as far as Crestline, Ohio, the site of that town and Alliance being selected and named by him.

In 1849, by appointment of the Board of Trade, he represented the city of Philadelphia in the National Pacific Railroad convention, held at St. Louis.

He planned the railroad bridge across the Allegheny river at Pittsburgh, connecting the Western line with the Pennsylvania Railroad. As

the different divisions of his road were opened for use, he became the general superintendent of the working of the line. It reached Crestline, Ohio, 188 miles from Pittsburgh, April 11, 1853. It intersects the Cleveland, Columbus and Cincinnati road at that point. It now forms the Eastern Division of the Pittsburgh, Fort Wayne and Chicago Railway, one of the most successful and valuable lines in the country. When S. W. Roberts became its chief engineer, the company, though organized, had not \$500 in cash, and for some time he served without salary. He continued in charge of the road until 1856, when he resigned, and returned to Philadelphia to reside.

In that year he became the chief engineer and general superintendent of the North Pennsylvania Railroad, one track of which was then in use from Philadelphia to Gwynedd. Under his direction the work was continued, and the road opened to Freemansburg, on the Lehigh, January 1, 1857, and to Bethlehem, July 7, of the same year, where it connects with the Lehigh Valley and Lehigh and Susquehanna Railroads.

In 1875, S. W. Roberts was appointed, by the municipal authorities of Philadelphia, one of a board of five engineers, three of them from other cities, who made an elaborate examination and report upon the water supply of this city.

Having been the chief engineer and general superintendent of the North Pennsylvania Railroad for twenty-two years, and having reached the age of 67 years, he resigned as general superintendent in January, 1876, but continues to be the chief engineer of the company.

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