

Iron Rails and The Birth of Scranton, Pennsylvania

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C.P. Huntington (originally of Oneonta, NY), was the president of the Central Pacific Railroad. Built east from Sacramento, California while the Union Pacific built west from Omaha, Nebraska, their junction at Promontory Point, Utah in May 1869 would create the first transcontinental railroad.ⁱ Up to the 1840's the rails employed in American railroads were made in England. By the 1840's England's rail system was expanding at such a rate that its rails were all used at home. America from that point on had to develop the ability to make its own rails. One of the U.S. domestic sources was in Scranton, Pennsylvania. In fact the town was named for the family that pioneered the iron industry using anthracite coal.

In building the Central Pacific, one of Huntington's greatest challenges was obtaining and shipping iron rail. By the mid-1860's the Lackawanna Iron and Coal Co. (LI&C) in Scranton, PA was a key supplier. Quoting C.P., speaking of shortages of rails in 1868, "The worst concerned the big Scranton Mills, where a main balance wheel pulled loose ...and flew into pieces."ⁱⁱ He goes on to describe how one piece pierced two puddling furnaces and another - weighing half a ton - went out through the roof. Before repairs could be made, output went from 150 tons per day to zero for three weeks. How the LI&C was developed provides an example of 19th century entrepreneurship in action, describes the importance of the D & H Canal in use, and completes the origin story of the Erie Railroad to Binghamton. When it was completed in 1851 between Piermont-on-Hudson and Dunkirk, NY, the Erie was the longest railroad in the world.

The story begins with the discovery by William Henry in 1840 that a small Northeastern Pennsylvania community named Slocum Hollow had adequate supplies of iron ore, limestone, and anthracite coal for the location of a blast furnace to produce iron products.ⁱⁱⁱ Henry had had some success operating a blast furnace in Oxford, New Jersey with the help of his son-in-law, Selden Scranton.^{iv} Henry needed financial backing to set up the works, the housing, and the mercantile infrastructure for the community that would operate the plant at Slocum Hollow. When other backers failed to show, he turned to Selden and his older brother George for help. George had joined Selden to co-manage Oxford after Henry sold out. The brothers were not wealthy, but their Southern cousins Joseph and Erastus of Augusta, Georgia were. Although Erastus' interest lessened over time, Joseph's increased, and he became president of LI&C from 1858 to 1872, the time period when C. P. Huntington bought rails from Scranton.

But we're getting ahead of ourselves. The Scranton group, with the help of some local investors, took title of the property on August 17, 1840 and set up a corporation to run it capitalized at \$20000. Work began on building the blast furnace and accompanying village (named "Harrison" after the current U.S. president but later changed to "Scranton" for obvious reasons). A blast furnace of that age is a pit about 25 feet in diameter and about 40 feet deep in which layers of limestone, iron ore, and anthracite coal are stacked and ignited. At the bottom of the stack there is a cone shaped crucible through which molten iron flows, if all goes well, when the cooking process is complete.^v But all did not go well. Twice

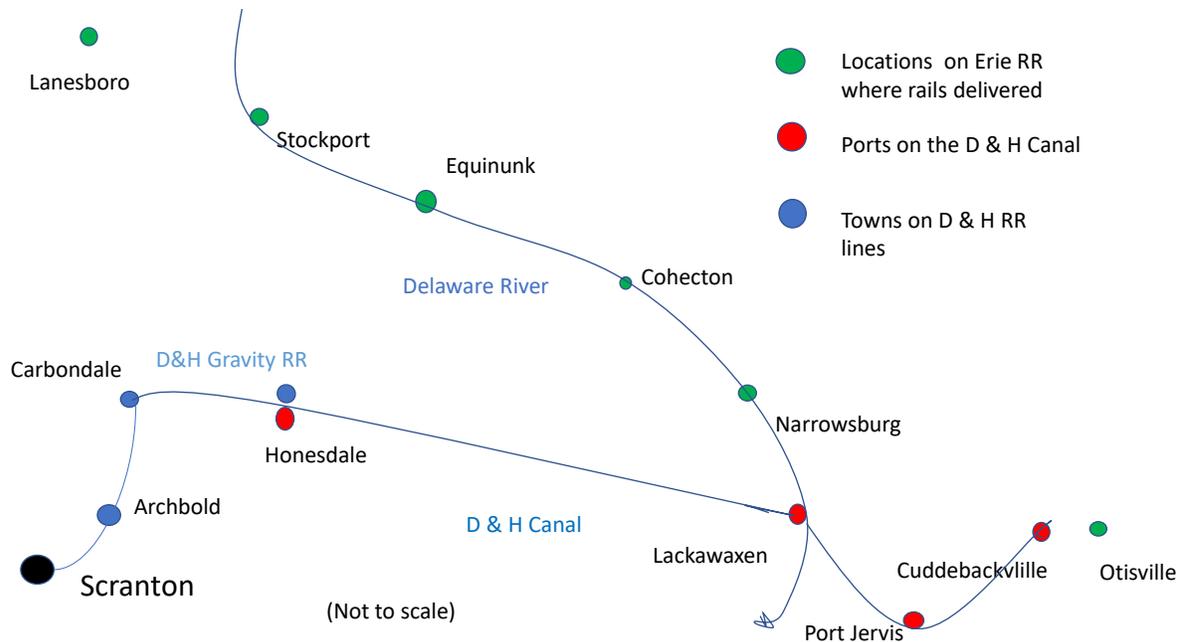
in October 1841 attempts to ignite the stack were made but the process could not be sustained.^{vi} The Scranton brothers in Oxford decided that one of them, George, needed to bolster Henry on the work scene. George supervised the rebuilding of the oven interior, working so hard that his death 20 years later was considered premature.^{vii} A third abortive attempt led Selden Scranton to Danville, PA where he secured the services of John F. Davis, successful operator of 2 anthracite furnaces. Arriving at Slocum Hollow in January 1842. Davis modified the oven and ignited it once more on May 23, leaving it in blast until September 25. Something like 375 tons of pig iron was produced.^{viii} After more repairs, a blast period from October 11 until March 1843 yielded 600 tons, a modest improvement not yet up to the standards of the day for anthracite furnaces.

But anthracite-made pig iron was not considered a desirable commodity in cities like Boston and the market for iron in general was depressed.^{ix} To defray high transportation costs the Scranton's decided to add value to their product at home and had nail-making and rolling mill plants installed at their site by 1844. Due to the qualities of the iron ore used, the nails when made were brittle and often cracked by themselves in the pocket of the carpenter who used them.^x But the same ore enabled excellent quality railroad T rail to be produced by the rolling mill. In 1846 the ultimate opportunity for the Scranton's



Joseph Scranton's former home, now the Admissions Office of the University of Scranton (Author's Photograph).

arrived when the Erie railroad was under construction along the Delaware River between Port Jervis and Hancock and their English source of T rail evaporated due to domestic English demand. The Scranton's obtained a contract from the Erie RR to supply 12000 tons of T-rail by 1848.^{xi} The urgency of the situation was heightened when New York State required the Erie to forfeit a \$3 million dollar subvention if it did not reach Binghamton, NY by December 31, 1848.^{xii} With Scranton's T-rail, the Erie RR was completed to Binghamton four days early, and both companies were saved.



Delivering Rails from Scranton to the sites of the Erie RR Construction before 1848.

The final question we must ask in the episode is how the T rails were delivered from Scranton to the Erie Railroad. The rails were available for delivery by spring 1847.^{xiii} The first tranche were used from Otisville, NY down the Shawangunk Mts. to Port Jervis. This involved hauling the rails by horse team 12.5 miles to Archbold, whence the D&H Canal Company's conventional railroad took them 7.5 miles to Carbondale, there putting them on the D&H Gravity Railroad to go over the 1000 ft height of the Moosic Mountain Range to Honesdale, then transferring the rails to boats which were pulled on the D&H Canal to Cuddebackville, NY.^{xiv} From the latter point, it was a relatively short 4-mile horse team pull to Otisville. Additional tranches of rail required west of Lackawaxen were hauled by horse teams to Lanesboro, Stockport, Equinunk, Cohecton, and Narrowsburg.

The Scranton iron complex was renamed the L&IC after 1853.^{xv} It became the second largest ironworks in the US by the 1860's.^{xvi} Most importantly, it was there in 1868 to provide rails to Collis Huntington's Central Pacific Railroad.

ⁱ Huntington had run a hardware store with his brother Solon in Oneonta, NY before migrating west to Sacramento, CA. There he first ran a business selling supplies to gold miners.

ⁱⁱ Bain, David Howard, *Empire Express, New York* (1999). p 487.

ⁱⁱⁱ Lewis, David W., *The Early History of the Lackawanna Iron and Coal Company: A Study in Technological Innovation* in The Pennsylvania Magazine of History and Biography Vol. 96, No. 4 (Oct. 1972) p. 432.

^{iv} Lewis, p. 429

^v Outside of Lancaster, PA is located the state-restored Cornwall Furnace which represents the iron process from colonial days. In the dirt floor at the bottom of the blast furnace there are molds of knives, forks, and plates into which conduits of molten iron are diverted. When cooled, the resultant iron pieces became colonial tableware.

^{vi} Lewis, p. 444.

^{vii} Lewis, p. 444.

^{viii} An iron pig is a solid cylindrical cooled piece molten iron which is roughly the size of the eponymous animal and is ready for the next stage of iron making manufacturing, which we will shortly describe.

^{ix} Lewis, p.448.

^x Lewis p.454

^{xi} Interpretive plaque, Iron Furnace State Historical Site, Cedar Ave, Scranton, PA.

^{xii} Lewis p. 459.

^{xiii} Mott, Edward Howard, *Between the Ocean and the Lakes: The Story of Erie*, New York, NY (1908) p. 91 .

^{xiv} The Ingenious D&H Gravity RR is described in Ruth, Phillip, *Of Pulleys and Ropes and Gears*, The Wayne County Historical Society (1997).

^{xv} Lewis, p.466.

^{xvi} Interpretive panel, Iron Furnace State Historical site, Scranton, PA.