

A BRIEF HISTORY OF NASSAWANGO IRON

By Alice Paterra

Back among the trees of the Pocomoke Forest stands a tall structure made of brick. The structure is what remains of an iron furnace; the furnace stack has been dormant since 1850, but between the years of 1831 and 1850 it was the center of a small, bustling town, thriving in the early iron industry of ante-bellum Maryland. The furnace, situated near Snow Hill, Maryland, was an important part of the industrial age, because of its contribution to technology of the time.



The furnace, called the Nassawango or Naseongo Furnace, was erected at the site of a grist and saw mill on 2,000 acres of land on Nassawango Creek. The land was formerly owned by Elijah Coulbourne, and was offered for sale specifically for the iron contained in its soil (Snow Hill Messenger Dec. 13, 1831). The land was purchased by the Maryland Iron Company, which had been formed in 1828 by the Maryland Legislature (A Bill). The new owners completed construction of the furnace stack by the spring of 1832 (Snow Hill Messenger May 21, 1832), only a few months after their purchase. Upon the completion of the furnace stack, the Maryland Iron Company purchased an additional 5,000 acres of land surrounding the original holding, and began the manufacture of iron.

The furnace was designed to smelt bog ore, which was gathered from huge beds in the swampy soil along Nassawango Creek. Every 24 hours, 3 tons of ore were loaded, or charged, into the top of the 35- feet-tall furnace stack. 300 bushels of charcoal were used to heat and melt the ore, and oyster shells were added to act as flux (used to force impurities in the iron to coagulate). Enormous bellows, powered by waterwheels, maintained the heat of the fire burning within the furnace. At intervals during each 24-hour period of firing, a lower tap near the base of the furnace was opened, and the molten iron was allowed to flow into molds set into floor of the casting house (Robbins). The molds were called "sows" and "pigs" because of their shape; the main channel, joined with smaller, perpendicular channels resembled a sow feeding her piglets.

The term "pig iron" was used to refer to the hardened, unrefined metal. The pigs, measuring approximately 2 feet in length, were then taken to Baltimore and Philadelphia to be used in industry there, as well as in other parts of America. The smelting process used at the Nassawango Furnace was known as the "English", or indirect" system. It employed two steps, smelting and

refinement, but could produce more iron, at a higher quality, than the alternative, less expensive process known as the "German or "direct" system. The "German" system was more often used in making casted materials, such as kettles or other implements not formed by a blacksmith (Robbins). Using the "English" system, the Nassawango Furnace was able to produce several hundred tons of pig iron each year (Harr), and because of the labor involved, a small village of furnace workers evolved from the tiny shacks huddled around the tall brick stack. Workers were supplied with shovels and axes, and labored in clothes of cheap domestic cloth. At the company store they could purchase such staples as sugar, coffee, and flour (Spence); they supplemented their simple diet with produce from small gardens in the little town.

A typical day's work included chopping 2 1/2 cords of wood, for which one would be paid forty cents (Democratic Messenger May 20, 1832), or pulling several hundred pounds of bog ore from the watery beds near the Nassawango Creek. Men who chopped wood were required to stay two weeks ahead of production; in order to make the necessary charcoal, the wood was slowly charred. Men took turns jumping up and down on the smokey stacks to compress the burning wood. The heavy boots they bought from the company store proved a valuable purchase!

Above the furnace, on a natural hill, charcoal, flux, and bog ore were loaded into huge carts and pulled by mule teams up a steep charging bridge. The charging bridge was a narrow, covered ramp which climbed from the crest of the hill to the top of the furnace stack. It was from the bridge that the furnace was charged with alternating layers of charcoal, ore, and flux. The mules were blindfolded, to keep them from bolting once on the bridge, and forced to back their way down to the bottom of the incline as each cart was emptied. Workers at Nassawango met with steady employment, at a fine rate of pay; because production levels continually climbed, positions were readily available. Initially, the furnace workers, who came to employment at the furnace by answering advertisements in local newspapers, lived in identical buildings, one and one-half stories tall, with no windows (Harr). The owner of the furnace lived in a larger home, referred to as the Iron Master's Mansion. By 1835, there were 25 of the little homes, housing 100 people. The workers continually supplied the furnace with the materials needed to operate; and the little town grew, eventually claiming over 100 homes, a general store, blacksmith shop, water and saw mills, a school, church and hotel. By 1838, over 400 people lived at Furnace Hill, as the town was called (Democratic Messenger April 21, 1949). However, despite the endless work of the residents, the Nassawango Iron Furnace failed financially.

The bog ore found under the banks of the Nassawango creek was of poor quality, being only 51% iron (Singewald), and was difficult to smelt and purify. Even though the Maryland Iron Company was able to produce great amounts of iron, the inferiority of the product made it worth very little.

Unable to recoup their investments the Iron Company was forced to sell the Nassawango Furnace. On August 4, 1835, the Borderer reported that on August 27, the furnace property, including 7,000 acres of land, mills, buildings, and other property would be sold. The furnace was purchased in 1836 by Benjamin Jones, from Philadelphia. However, his endeavor was similarly unsuccessful, and in 1837, the property was sold at public auction in Snow Hill.

On July 12, 1837, the Nassawango Furnace was purchased by Thomas A. Spence, for \$3,000 (Worcester County Land Records). From Worcester County, Spence was a Circuit Court Judge who divided his time between homes in Princess Anne and Snow Hill; after buying the Nassawango Furnace, he also maintained a home in Furnace Hill. The deed for the purchase indicated that Spence acquired not only the furnace stack and its environs, but every item in the town of Furnace Hill. The inventory included such goods as mahogany tables, chairs, sideboards, beds, washstands, looking glasses, firesets, one dozen "iron bound pales", kitchen furniture, "60,000 bushels of coal in the houses", "5,000 bushels in the pits", "3,000 cords of new wood on the Dennis farm", wheelbarrows, rakes, shovels, hoes, timber carts, ox and horse carts, wagons (with harnesses), scows and oars, farm implements, iron and tools in the blacksmith shop, 50 bushels of corn in the grist mill, livestock, fields of corn, 2,000 bricks, and "all of the iron ore raised at the beds and on the bank near the furnace."

Spence, by some accounts, was misled about the quality of the bog ore and was determined to force a profit from his purchase. Over a ten-year period, he invested all the money belonging to his wife, Elenora Ellicott, into the production of iron (Prettyman). Spence was successful; by studying the technology of other furnaces of the 1830s, he found a way to make the production of iron more efficient and profitable. In England, iron furnaces were being fired with the new method of a "hot blast" system, whereby the blast air . . . was raised to a very high temperature by being passed through a heat exchanger or "stove" heated by the hot waste gasses as they left the furnace. This accelerated the combustion process within the furnace and decreased the amount of charcoal fuel necessary to reduce a given quantity of iron ore, but most significantly, it appreciably increased the production of iron.

Spence installed a hot blast system on the Nassawango Furnace, and increased production to over 700 tons of pig iron annually (ASME 1-2) Because of Spence's efforts the town of Furnace Hill, by then also called Furnace Town or Naseongo, prospered. New commerce included a shoemaker, a post office, and a bank, and the old iron master's mansion became an inn and boarding house. Spence was encouraged by the success of the furnace and its town, and built a new, fourteen-room home for his family (Harr). He also maintained a profitable general merchandise store in the town of Snow Hill, five miles away, and used the store to supply necessary goods to the town at the furnace. Those goods included bricks for

the construction of buildings and the upkeep of the furnace; shovels, hoes, picks, and axes used in the mining of the bog ore and chopping wood for charcoal; iron (perhaps in a purer state than the furnace could produce) for use in the blacksmith shop; over 3,000 yards of cloth (of various weights and hues) for the making of clothing, bedding, table linens, and window and floor coverings; as well as other items important to everyday life at Furnace Hill. The boarding house was kept in supply of candles, china, salt, ham, and blacking, while the general store was able to maintain its stock of such items as tobacco, snuff, powder (by the keg), sugar (in loaf form), coffee, buttons, pins, thread, shot, flour, shoes, etc. (Spence).

Because Spence was able to readily supply almost everything the villagers needed, from food to clothing, iron and other raw materials to brooms, the residents were able to eliminate the five-mile journey to Snow Hill to get supplies. The blacksmiths pounded out horseshoes, nails, fireplace implements and other tools; the boarding house became a popular stopping-place for weary travelers; camp-meetings were held near the church (Harr 11); the town's potter spun his wheel and supplied the villagers with everyday tableware, including jugs and bowls; the cooper, with supplies from the blacksmith and the sawmill, made his barrels; and the broommaker manufactured corn brooms for sale in Furnace Hill as well as other markets. Furnace Hill was a thriving community, sprawled over a broad plain once populated only by a forest. The trees were cut down to fuel the furnace, allowing the town to grow, and as the townsfolk worked to Supply the furnace, the furnace maintained the town.

In 1840, J.H. Alexander, Topographical Engineer for the State of Maryland, presented a Report on the Manufacture of Iron to the Governor, claiming that the Nassawango Iron Furnace was unique because not only was it the only iron furnace on the Eastern Shore, but it was also the only furnace in Maryland using bog ore. The Nassawango Furnace, one of the first in America to use the hot blast system, was finally profitable. Under the management of Thomas A. Spence, the furnace flourished for over ten years, until, inevitably, the bog ore was harvested to the point of exhaustion. By 1850, with \$20,000 in invested capital, and 700 tons of ore (valued at \$175.00), the furnace employed only ten men and produced only 400 tons of pig iron annually (Business Census). The manufacture of iron was more economical in other parts of the state; once again, the furnace failed, and Spence was forced to sell it. Thereafter the furnace changed hands many times, but was never again charged and fired (Prettyman); the production of iron ceased, and with Spence's defeat, Furnace Hill became a ghost town.

The furnace stack deteriorated and fell to ruin; the canal, which once turned the waterwheel and pumped the huge bellows, filled with silt and debris; the few remaining villagers left their homes, which soon burned or collapsed under the weight of neglect; trees and brush grew up around the abandoned foundations, and the great Pocomoke Forest reclaimed its depleted beds of ore.

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