

Diverse Connections: the History of a Virginia Iron Foundry

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Iron Foundries have been in existence since the discovery of Iron as a valuable material. This element has shaped the history of many countries agriculture, warfare, and everyday life. It is hard to imagine a world that is not supported by iron-related infrastructure, physically or economically. Iron, or (Fe) as its chemical symbol, is the sixth most common element in the universe and the most abundant on Earth. It is no surprise that upon the discovery of this valuable element, man would harness its strength to assist in his evolution of technology. Iron products have helped developed America's history since the first explorers met with Native Americans over 500 years ago.

Iron is not found naturally in a usable form, it is mined as an ore and must be manipulated to create a usable substance. Pig Iron refers to the most basic form used by foundries. It is an intermediate step on its way to become cast iron or some sort of steel alloy. It contains contaminants that still must be removed for a stronger more durable iron product to be produced. The iron forming process that transformed pig iron into useable goods was not clean or easy. Early American foundries used many different skills and materials to produce a final product. Often, engineers, metallurgists, carpenters, and machinists would be employed under the same roof. ¹

¹ Much of the information describing processes involved in making iron casts is described from my experience working with foundry materials and making casts, as well as growing up in a steel-town heavily affected by American industrialization. A good secondary source for an overview of early iron industry can be found in Paul Paskoff's *Industrial Evolution: organization, Structure and Growth of the Pennsylvania Iron Industry, 1750-1860* (Baltimore: The Johns Hopkins University Press, 1983), a description rural life in Virginia and its changing trends in the 19th century is done by Hofstra and Koons in *After the Backcountry: Rural Life in the Great Valley of Virginia, 1800-1900*. (Knoxville: The University of Tennessee Press, 2000), information given on the Bradley Family is found in John W. Wayland's book, *Men of Mark: and Representative Citizens of Harrisonburg and Rockingham County Virginia*. (Staunton: The McClure Company, 1943).

One particular Virginia foundry followed the trends and patterns typical of most early American iron foundries. However, the Philo Bradley & Sons Iron Foundry would not only support the Harrisonburg agricultural community, but the agricultural communities of the entire state, and the farming communities of the east coast. The Bradley logo, “PBS” was printed on almost every iron product the company made, and later became synonymous with quality farming implements all over the state. However, the Bradley’s products did not achieve popularity and wide-use immediately in the Valley’s farming communities.

It is important to understand the founders and operators of the foundry, the men and family who would see the business’s success for the next 100 years. The Bradley family entered the Shenandoah Valley in 1846; Philo Bradley the original owner and operator of the foundry had come from Cayuga County, New York.² However, Philo was originally born in Connecticut around 1829 according to Virginia census information. The iron business was extremely lucrative and necessary in farming communities. Since the western Shenandoah mountain slopes were riddled with the iron ore needed for such a business, for a valley entrepreneur an iron foundry became a practical and well paying profession. Similar to Philo Bradley, James Logan, a merchant from Pennsylvania in the 18th century invested heavily in the iron business seeing it as a profitable and tremendously beneficial to a farming community. He said, “I resolved to try a method for securing a reputable income by means that might at ye same time be advantageous to ye public which was by carrying on one fourth of a large iron works.”³

² “P. Bradley & Sons” *Spirit of the Valley*, Special Industrial Supplement. Albert E. Walker (Harrisonburg, VA, 1905).

³ Paskoff, 1.

The origins of the Bradley Foundry must be put together from primary source documents and monographs since no definite story has been written or transcribed by the family. From secondary sources we understand the brothers Nelson and Philo moved to Harrisonburg in 1852.⁴ Philo Bradley's occupation is listed in his 1854 marriage license as "Iron Founder" and it is presumed the foundry had already established itself in town. We know several members of the Bradley family were in the area and contributing to the local foundry industry, however it is not until 1856 that we have any record of their transactions. Starting in January 1856, the Bradley Foundry Ledger lists every transaction that took place with a few gaps in the 1860's.⁵ Through these transactions we can begin to piece together what was taking place in the Bradley family as well as within the business. An employee, William H. Menifel, started work for the foundry, "Commissioned in my employ wages 64 cents for a day Jan 14th" is transcribed by Philo at the top of the page, obviously the starting wages for the new employee. His work, listed on the following page, consisted of carpentry, pattern making, and plow assembly totaling 120 days by the end of the page.⁶

It is common knowledge that Nelson and Philo started the business together, however through the examination of records, it can be supposed that their partnership may not have been as close as previously thought. Nelson had his own account with the foundry, initially found on page three of the ledger and continuing on page fifty-three. Nelson's account is filled with transactions between the brothers which Philo received goods and products from Nelson including tools, castings, moulds, and even furniture,

⁴ Wayland, 391.

⁵ (Bradley Foundry Ledger, 1856-1871), The Shenandoah Valley Miscellaneous Ledgers, Special Collections, Carrier Library, James Madison University, Harrisonburg, VA.

⁶ Bradley Ledger, 2.

which were given monetary values and paid. These transactions raise questions about the brothers business relationship; if they really started the business together a more joint relationship could be imagined. This question seems to be answered on page fifty-three of the ledger. Again, within Nelson's account, we see a transaction in which he received iron pigs from the "Shenandoah Foundry" listed as payable to Nelson Bradley. From these dealings we can presume Philo and Nelson may not have gone into business together, but rather Nelson may have been helping his brother set up his foundry and it seems Nelson may have been working for a different foundry altogether. Perhaps Philo worked at this same foundry from 1850-1852 learning the trade and the entire time planning to open his own business. Initially the foundry was located closer to Blacks Run and was a much smaller operation.⁷ At this point in Virginia agriculture there was a declining wheat market, made worse by the affects the Civil War would have on the region.⁸ An iron foundry could not limit its products to only plow and farming implements. A wide array of everyday goods was made in the foundry and for the rest of the foundry's existence, this strategy ensured longevity and economic success of the business.

Not much is known about the Bradley activities during the Civil War, the foundry continued to operate, however it produced far fewer plow shares, and far more kettles, stoves, and household goods according to the ledger. One transaction lists the foundry selling one large iron kettle to Dr. Williams for \$5.00.⁹ Community memory holds the Bradley foundry may have even produced cannon balls for the confederacy. Ledger

⁷ Wayland, 53.

⁸ Koons, 15.

⁹ Bradley Foundry Ledger, 464.

entries do not support this claim, but it could be that no official records were kept of such a transaction. In all likelihood records of any contribution to the Confederate war effort would have been destroyed in case of capture by Union troops. Starting with the company's opening, continuing during the Civil War, and throughout the 1860's the Bradley Foundry took far more than cash in exchange for goods, in fact the Bradley Foundry had a solid hold on the scrap metal industry in the region throughout the 19th century. Records also indicate transactions taking place in return for ham, eggs and other produce.

Philo's life was far from simple; he was a northerner living in the south during the greatest war this country has ever known. The years during the Civil War were not easy for the Bradley family, and at this time Nelson returned north, leaving Philo to operate his business alone. It is clear there was a short hiatus of time in which Philo Bradley also left the area, perhaps after his wife Fannie's death, which occurred sometime after May 1863. However he returned with Joshua Wilton, a Canadian, and in 1865 and reestablished the foundry. In 1866 the Foundry placed an advertisement in the *Rockingham Register* announcing "Re-Established and Re-Fitted, the undersigned have formed a co-partnership under the name and style of 'P. Bradley & Co.'"¹⁰ At the bottom of the listing J. Wilton is listed below P. Bradley's name. Joshua Wilton was a merchant who sold farming implements in town and maintained part ownership of the business. We know from the US Census of manufacturers done in 1870 that the foundry had a capital of \$12,000 invested in its operation in steam engines, cupola, and tooling machines. They employed at this time a total of six full time workers. Bradley and Wilton paid out a total

¹⁰ *Rockingham Register*, "Iron Foundries: Harrisonburg Foundry." 1866.

of \$2500 in wages each year which if the men worked 60 hour weeks which were typical of the iron industry, their pay would total around 13 cents an hour. With these 6 men the foundry produced over 650 plow shares annually, around 35 mill castings, and a variety of other castings, bringing in a reported \$10,400 every year.¹¹ In April of 1878 Philo Bradley bought the interest of Joshua Wilton in the foundry owning it outright and reestablishing the business name as P. Bradley Foundry.¹² However in 1886 the business was once again sold, this time in family to Philo's son Schuyler for the sum of \$7,500.¹³

The foundry building, which occupied one acre of property on S. High St. originally consisted of one large building with 3 rooms including a foundry, machine shop, and pattern room.¹⁴ The pattern room would be later moved away from the main building to protect the capital investment. The patterns were made from wood and thus easily destroyed by heat, they represented many skilled man hours and had to be protected. By 1905 there would be six buildings including a plow factory, and warehouses and the before mentioned pattern storage shed as listed in the Spirit of the Valley special industrial supplement, and confirmed by early Sanborn Maps used for insurance claims.¹⁵ A large addition to the building was done in 1913, which is the same year the latest electric cupola was installed.

As did many valley businessmen, Philo Bradley diversified his product list, never limiting himself to one type of cast, which ensured a diverse product list and therefore a

¹¹ "Agriculture and Manufacturing Census Records of Fifteen States For the Years 1850, 1860, 1870 and 1880" (Richmond, VA: Virginia Dept. of Archives and History, 1850-1880.

¹² *Rockingham Register*, "Business Changes." 1878.

¹³ *Spirit of the Valley*, "Sale of Foundry Property." 1886.

¹⁴ Walker, 6.

¹⁵ *Spirit of the Valley*, "Special Industrial Supplement." 21.

diverse customer base. In an 1882 advertisement in the *Rockingham Register*, Harrisonburg Iron Foundry made Livingston and hillside plows, straw cutters, cane mills, road scrapers, horse power and threshers, reapers, iron kettles, polished wagon boxes, andirons, circular saw mills, corn and plaster crushers, and thimble skeins.¹⁶ It also mentions finishing of every description done at reasonable prices. Another early 20th century ad lists the P. Bradley & Sons' Plow makers, as doing repairs for all plows advertising their new and correct tools in their machine shop, perhaps after a renovation or retooling of existing machines, stating "Your repair work is respectfully solicited." Yet another advertisement includes stoves and kettles as finished products, showing their diversity in production. An advertisement also states that Bradley products were sold at various merchants in town including J. Wilton's and H.N. Whitesel & Bro's meaning they were easily accessible to people doing their daily shopping in town.

The Bradley Foundry soon established their dominance in the market and by 1905 the foundry was listed in the *Spirit of the Valley*, a special edition paper published in December highlighting various businesses and their owners in the Harrisonburg community. The foundry by this point was listed as the oldest in the Valley and one of the largest. "While the foundry had a capacity of 1300 plowshares a week, the workforce never exceeded 16 or 20." The Bradley foundry may not have been the biggest employer in Harrisonburg, but may have been one of the farthest reaching and most productive. They had done exactly what Valley industries are known for, diversification, and community connections. A letter from the First National Bank Board of Trustees in 1886 shows us that P. Bradley even had time to become the Bank President as his resignation

¹⁶ *Rockingham Register*, "Harrisonburg Iron Foundry: P. Bradley" 1882.

is regretted by the board who declare his success and moral character.¹⁷ Philo Bradley would pass on the business to his son Schuyler in the same year marking his retirement from the Harrisonburg business community.

The P. Bradley & Sons plows and products that bore the “PBS” name were shipped all over Virginia and were considered some of the best, One local journalist reported in 1962 that, “An estimated 5,000,000 plow shares were produced by the foundry. The ‘PBS’ trademark on these shares was recognized for years as nothing of the highest quality.”¹⁸ This quality was known all over the state as the ‘PBS’ name increased in popularity and use as their products spread all over the commonwealth; agents selling the Bradley products extended from Northern Virginia to Roanoke and even into W. Virginia.¹⁹ The Bradley family would continue their business through 5 wars and several depressions, however by the 1930’s the Bradley’s would start losing business to mass-produced tractor pulled plows which were harder and more durable. Throughout this time the foundry would again diversify their production capability making municipal hardware, drain covers, and manhole lids. These manhole lids bearing the Bradley name can still be seen all over Harrisonburg. The fourth generation Bradley’s, Schuyler II and Curtis, both great-grandsons of Philo Bradley would liquidate and sell the business in 1962. Both men had directed operations since the end of WWII. A Harrisonburg agricultural implement company still bears the Bradley name and continues to sell plow parts and farming tools, although the family who had been synonymous with iron, farming, and quality for over 100 years had left. The Bradley family and foundry has

¹⁷ *Letter From First National Bank*, James Madison University Special Collections, 1886.

¹⁸ *Daily News-Record*, August 4, “Bradley Operations End After 106 Yrs.” 1962.

¹⁹ Bradley Foundry Ledger, 64.

been a great part in the industrialization of Harrisonburg for over a century, however staying true to production methods and local business, helped ensure the community based economy that the Shenandoah Valley is known for. The Bradley Foundry's footprint can be seen all over the region, from water drain covers, manhole lids, plows, skillets, stoves, even decorative casts and toys. The Bradley foundry had an important place in the community infrastructure and state economy.

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