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Echoes of Iron in Connecticut's Northwest Corner

*Exploring the Berkshire Hills—
A Guide to the Geology and Early Industry
of the Upper Housatonic Watershed*

*75th Anniversary—St. Bernard Church, Sharon Connecticut**

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Saint Bernard Parish Centennial Celebration, Sharon, CT**

The Rise and Fall of the Sundance Kid

The Saga of Butch Cassidy and the Wild Bunch

** with Mary Kirby*

Seldom Told Tales of Sharon



Seldom Told Tales of Sharon



ED KIRBY

BOOK ONE:

CALKINSTOWN'S INSCRUTABLE HIRAM WEED

THE ILL-FATED NEW YORK TO SHARON CANAL

SHARON'S NORTHEAST CORNER

SHARON HISTORICAL SOCIETY

2004

Contents



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Preface



This book is addressed to the thoughtful and observant people who enjoy local history, particularly those who possess a curiosity concerning origins of the lesser known. It presupposes no particular acquaintance in the field of history and will, I hope, be intelligible to readers of many different ages and backgrounds.

This book makes no attempt to cover the basics of Sharon history. Rather, for most, it may better serve as a point of departure from facts well known. There are many written histories concerning Sharon from books to numerous well-researched papers. To obtain a review of the total history from the founding through a large portion of the nineteenth century, one should read Charles F. Sedgwick's *General History of the Town of Sharon*. For the late nineteenth century until 1915, the papers of Lawrence Van Alstyne concerning manufacturing, merchants and other topics illuminate the period well. There are specific writings that address the inventions and manufacturing accomplishments by Asahel Hotchkiss and sons Andrew and Benjamin Berkley Hotchkiss. The Hotchkiss family story plays a major role in Sharon's history.

There are publications too that include portions of the industrial history of Sharon including Dr. Robert Gordon's *Industrial Heritage of Northwestern Connecticut*, my *Echoes of Iron* and *The Legacy of B. B. Hotchkiss* by Ken Edwards.

Seldom Told Tales of Sharon is intended to be the first publication in a series concerning items, actions and people in and around our town, which have to this point remained obscure, rarely making an appearance in the

written histories. While in many writings tales are presented as fiction, use of the term here incorporates Webster's second definition, that of true stories. Every effort has been made to document the findings presented in the stories that follow.

While these tales are about Sharon the reader should not expect to be confined within the town's thirty-five or so miles of borders. Many of the characters important to Sharon were also active in other towns, some nearby others at considerable distances. In addition Sharon, as in the case of most northwestern Connecticut towns, is composed of several villages. Along the eastern border on the Housatonic River lie the villages of West Cornwall and Cornwall Bridge. Through history the villages have been often aligned more closely with Cornwall than Sharon. Even today residents of Sharon's east slope have Cornwall phone service and West Cornwall or Cornwall Bridge rural mail delivery. On top of the hill the village of Ellsworth was closely connected to the Kent settlement on Skiff Mountain. Sharon's northeast corner with its charcoal and firestone manufactures was closely associated with Lime Rock and its iron companies. In the southeastern section Hitchcock's Corner (later Amenia Union) is still shared by two towns and two states. The same was once true for industrial Sharon Valley whose village was closely associated with Sharon Station, New York.

Selection of topics for *Seldom Told Tales of Sharon* is based on choosing a name, event or location that is vaguely familiar to long term or well-informed residents and visitors. The mention of the name Hiram Weed usually brings out an "oh yes . . . Weed's Dam Road" or "hmm . . . wasn't he the man who had the iron furnace that never worked right?" A mention of Mine Mountain and Mount Easter often elicits the statement "yes, I drove up there once . . . isn't that where the old clay beds were?" Upon hearing that at one time a canal was planned to connect Sharon with New York City the usual comment is "c'mon, you must be kidding. Why would anyone dig a canal from here to New York?"

Even in the early Colonial Period Sharon was an industrial town. The peak of industry and manufacturing was reached around 1840 and contin-

ued into the 1890s. As the scope of industry and production decreased, dairy farming became the major source of local employment. Yet, even after the closing of the Sharon Valley Iron Company in 1898, limited industrial activity continued until 1919. Since the three *Tales* presented in this publication are industry-related, appendices are included showing the industrial chronology and an extensive listing of industries and manufacturers.

While my goal is to have the reader both learn from and enjoy this treatise, selfishly I am the individual who has already gained the most. I have admired Hiram Weed since an early study project as an undergraduate over fifty years ago. Perhaps I have not treated Hiram as well in earlier writings. But the obligatory research needed for this portion of *Tales* has provided me with a new and broader appreciation of this marvelous character. The story of the never-to-be Sharon Canal has always provided fascination, not for its failings but for its vision of the future. As for Sharon's Northeast Corner, I grew up in that area at "Neverland," the Miles' Estate and wandered those hills for many years. For me a return to those wonderful places is always a return home.

Enjoy this first book of *Seldom Told Tales of Sharon*. Research is well underway for the second. But it is not necessary for me to write them all. With a *Seldom Told Tale*, you too can contribute episodes of local history.

—ED KIRBY
June, 2004

Acknowledgments



The most rewarding experience associated with the development of a work of this sort is the pleasure of receiving new information from long time friends and the opportunity to make new acquaintances. There are many that provided assistance, so many that I fear some might be missed.

Since this work includes a study of three different but not unrelated accounts in the history of Sharon, the list of contributors even for these short stories is extensive. One individual in particular, Neil C. “Cliff” Waldow, was the major contributor to all three topics. Following his retirement just a few years ago, Cliff quickly immersed himself not only in local history but in both field and reference studies. The results of his efforts have been amazing. For me Cliff has unearthed a considerable amount of information not previously published or acknowledged. Two years ago, Cliff and his wife Alice moved to Kents Store, Virginia, where he continues his research in industrial history.

Long time friend and former First Selectman William Wilbur has been an enthusiastic supporter of this project. His factual contributions have been extremely valuable, not only toward the stories presented here but also toward the next volume of *Seldom Told Tales of Sharon*. In addition to his own recollections, Bill has provided me with key portions of his grandfather’s personal papers. Sharon Town Clerk for many years (1909–1921), James B. Wilbur was one of the astute historians of our town. Information from his papers has proven invaluable in the development of *Calkinstown’s Inscrutable Hiram Weed* and *Sharon’s Northeast Corner*.

Through the years, extensive conversations with the late Stuart Prindle

have proved to be of considerable value. At the Sharon Town Hall, Sharon native and now retired assessor Helen Wike Humeston of White Hollow served as a major research source in references to areas with which we both had connections. Always interested, Helen assisted in solving many puzzles and providing map sources. Sharon's Town Clerk Linda Amerghi assisted in locating critical information. At Sharon's Hotchkiss Library, former librarian Mary Lignor and her staff were always willing to help.

I continually rely on the many volumes of Sharon land records for documented information regarding our local history. Though rare errors have been found, the land records have proven to have fewer mistakes than the United States Census. In Salisbury, former town clerk, Sue Spring, and present town clerk Patty Williams have been helpful in research concerning the tale of *Calkinstown's Inscrutable Hiram Weed*. In Cornwall, Assistant Town Clerk Vera Dineen, contributed valuable help with land records. Microfilm of the Harlem Valley Times / Amenia Times at the Dover (New York) Library and Historical Society has served as a major source of documentation.

Frequent tips provided by Betty Tyburski concerning her review of nineteenth century copies of the Connecticut Western News have been enthusiastically received.

For the Hutchinson Hollow area (today Smith Hill Road on Sharon's eastern slope) where Hiram Weed once produced wrought iron in a bloomery forge, Ruth Godsoe, Elsie Dodson and my former students Donna Brelsford Cope and Glenn Dennis have been interested contributors. Robert Mott has unearthed (but properly left in place) bloomery "skulls" and magnetite ore samples in Hutchinson's Hollow. Further south on Sharon's east slope, Jim Krissel has assisted in finding the locations of the ever-elusive magnetite ore pits.

For the tale of *Calkinstown's Inscrutable Hiram Weed*, several Calkinstown friends were key contributors. Current owners of the mid-nineteenth Hiram Weed home, Barney and Susan Leslie-Vavrock have been most gracious during visits to the site of Weed's blast furnace. Barney is always willing to explore the furnace site with me and Susan has contributed many

small iron artifacts from this special area. Beyond the foundation of School #6, Taylor Simonin and Tina Mucci have generously shared information regarding the former Abraham Weed home and the property that was the site of the foundry of Gillette and Weed.

Good friend and fellow traveler Barclay Prindle, who resides on the site of Hiram Weed's close associate Ezra H. Bartram, has contributed in the field and in locating the last site of the Calkinstown Store. Ted Roeske has supplied information concerning the stream that powered the Weed / Gillette foundry.

At the Salisbury Association, Laura Riva has been readily prepared to supply needed photographs while brightening my day with her quick quips and sunny disposition. Salisbury Association historian Katherine Chilcoat is thanked for her uncanny knack of locating elusive photos.

Doug Weaver, recently retired from the Department of Environmental Protection as manager of the Mohawk base in Cornwall, has answered my numerous questions regarding *Sharon's Northeast Corner*. Fred Bate Sr., from the Sharon side of West Cornwall village, and the most knowledgeable person in that area, has enlightened me concerning the history of that corner. More recently, Dylan Roberts of Sharon has assisted in locating sites and artifacts that I had only remembered from many years ago.

For research assistance toward *The Ill-fated Sharon to New York Canal*, I extend my thanks to Gretchen Reed, President and Jeanne Bollendorf, Director, of the Delaware & Hudson Canal Historical Society and Museum in High Falls, New York. Correspondence with Paul Higson of Canal Junction Internet provided me with a more complete understanding of canal history in the early nineteenth century. Special thanks are due to Nancy Flood for generously providing key photographs from the New York Historical Society. Close to home, long time friend Ken Bartram loaned me his papers concerning his great uncle Isaac Newton Bartram. In another Bartram branch, historian Barbara Bartram (great niece of I. N. Bartram) has shared information on family history and other relevant topics.

Former Sharon Town Historian Jeanne N. Majdalany has been an excel-

lent resource for this work. Jeanne's contributions, particularly regarding topics not in my areas of study have been most appreciated. Long time Sharon resident Don Carley kindly shared the story of his father working at the clay beds at the turn of the twentieth century. Though neither geologist Reid Craig nor archaeologist Victor Rolando has worked directly on this project, both have been the recipients of my many questions. Their insight, as well as in many earlier endeavors, has been invaluable. From my immediate family, both Kaki Kirby and Ed Kirby III have been contributors. Ed has assisted in the field and in the search for critical information on the internet. Most recently Kaki has accompanied me on reviews of Isaac Newton Bartram's firestone quarries on Mount Easter and Hiram Weed's Mine along the border between Boston Corners and Copake, New York.

At the Sharon Historical Society, Director Liz Shapiro deserves major kudos for the publication of this study. Liz's tireless efforts, editing, attention to detail and unequivocal support are most appreciated. I owe many thanks as well to our Assistant Director Marge McAvoy and Meg Szalewicz, both of whom are always ready to bail me out and find the "unfindable." For the layout and graphic design, once again I extend appreciation to Joe Freedman of Cornwall.

As in all these pursuits I am most indebted to my wife Mary for her eternal patience and dealing with my lack of typing skills, sporadic biases and occasional inflexible opinions. Because of Mary's many reviews of the text and strong support, the first volume of *Seldom Told Tales of Sharon* may add a bit of color and individuality to Sharon's history.

—ED KIRBY

Seldom Told Tales of Sharon





Sharon Town Clerk James Wilbur at the ruins of Weed's Furnace, Calkinstown, Sharon, c 1915. (courtesy William Wilbur, Sharon.)

Calkinstown's Inscrutable Hiram Weed



Driving east from Route 41 along the first nine-tenths of a mile on Calkinstown Road, there is little indication today that the area once harbored a concentration of nineteenth century industries. Yet, many years ago, two foundries, a blast furnace, a cupola furnace, a school, an early Methodist Church, a general store and other business structures occupied this small section of Sharon. One might readily ask, why would such a very small area give rise to industry? The answer lies in two factors, the availability of water power and the efforts of one of the tri-state region's premier industrial entrepreneurs.

Beardsley Pond Brook provides the primary flow of water through Calkinstown. This stream has its source at a topographic divide, 0.2 miles north of Beardsley Pond, currently the Sharon Water Company's major reservoir. From the dam at the south end of the pond, the stream flows generally southwest along Route 41 and through Calkinstown.

Along its upper flow, Beardsley Pond Brook accesses a key tributary, Calkinstown Brook, near the junction of Calkinstown and Weed's Dam roads. This tributary rises on the southern slope of Tan Fat Hill and flows about 1.0 miles to the main stream. Two small streams join Calkinstown Brook before its meeting with another tributary flowing north, east of Jewett Hill Road. From that point the stream flows a few hundred feet to Calkinstown Reservoir. Exiting the reservoir, the flow enters a farm pond before crossing under the town highway to join Beardsley Pond Brook.

In its lower flow, downstream from Calkinstown, a stream running north from Gager's Swamp, a substantial wetland with considerable open



Beers 1874 map of Calkinstown and the surrounding area. Since Weed's Furnace was out of blast in this period, it is not shown on the map.

water, joins Beardsley Pond Brook. After crossing under Route 41, the stream flows over picturesque Sharon Falls and joins Mudge Pond Brook about 2.9 miles from the divide at its source.

While water flowed year-round through Calkinstown, the volume was decidedly limited during the dry season. In no way could the flow of these small streams match the larger flows of Sharon's other industrial areas along Sharon Valley's Webutuck Creek and Valley Brook, Long Pond Brook, Mudge Pond Brook, Hutchinson Hollow's Carse Brook, Ellsworth's Guinea Brook or Hitchcock's Corner's Mill Brook. Yet, despite the lack of water volume, industry once thrived in Calkinstown primarily due to the efforts of an enterprising man by the unlikely name of Captain Hiram Weed.

Perhaps Hiram Weed has been treated a bit unkindly by historians, (including myself). For the most part, the treatment comes about as a result of his method of operating his blast furnace in Calkinstown. Yet, as one probes further into his life and considers his many accomplishments in

Calkinstown and Hutchinson Hollow, in Salisbury as well as in Sharon Station and Boston Corners, New York, it becomes obvious that Hiram Weed should be ranked high among the major industrial entrepreneurs of his day.

Hiram's father, Abraham Weed (1778–1864) born in New Canaan, Connecticut, came to Sharon early in the nineteenth century. On October 26, 1807, Abraham purchased a house (extant at 120 Calkinstown Road) and land on Calkinstown Road from Amos Calkins¹ and in 1813² purchased additional adjoining land. The house had been constructed c1760 by Stephen Calkins.³ Over time, Stephen and his wife had seven sons who settled locally and led to the section of town being named "Calkinstown."⁴

Born April 20, 1809, to Abraham and Betsey Lyman Weed of Sharon, Hiram worked at an early age on his parent's farm and in projects concerning the various land holdings of the family. Somewhere along the way, the sobriquet Captain Weed came into play. Though no documentation has been found of a title earned, perhaps it was in recognition of Hiram's developing leadership qualities.

At age twenty-three in 1832, Hiram Weed's first entry appears in the Sharon Land Records⁵ for the purchase of property on Mine Mountain. The following year, together with Jonas Dennis, Hiram purchased mining rights on fifty-six acres from William G. Williams to find and mine silver or iron. Though any discoveries resulting from these land transactions appear doubtful, the purchases establish Weed's early interest in land, mineral search and water rights for power. Over the forty-four years to 1876, the land records show Hiram Weed acquiring a total of fifty-four properties in Sharon. Included in the acquisitions were timbering and charcoaling sites, mining rights, carbonate rock deposits, water rights and other properties.

WEED'S KILN

Though Hiram Weed is best remembered for iron production and ore mining, his production of lime preceded those endeavors. “Weed’s Quarry,” on White Hollow Road, is referenced in James Percival’s study of Connecticut geology.⁶ Percival’s study was published in 1842 with most of the field sur-

vey completed before 1840, earlier than Weed's ventures with either wrought or cast iron.

Used by farmers to lower the pH of local acidic upland soils, lime was much in demand in the period. At his quarry, Weed built a small intermittent kiln to calcine lime by heating the host marble to temperatures over 1,500°F thereby changing the substance from calcium carbonate (CaCO_3) to calcium oxide (CaO). The finished product was then barreled and sold for agricultural purposes and the making of plaster, soap and other products. Though the years have taken their toll, remains of Weed's Kiln can still be observed from White Hollow Road about sixty feet west of utility pole #1268 (private property). The large bowl-shaped area behind the kiln is Weed's Quarry. Little can be seen of the carbonate rock today since it is almost completely covered by overburden.

WEED'S HUTCHINSON HOLLOW FORGE

On the east slope of Sharon, bordering the south side of present day Smith Hill Road, the Hutchinson brothers constructed a bloomery forge in 1760. Bloomery forges, usually standing six to eight feet in height, were used to



Remains of Weed's Kiln on White Hollow Road.

produce wrought iron. In the forge iron ore was heated by charcoal fuel with a small bellows to increase the temperature. Along with the forge, as was common, a hammer mill was a necessity and grist mill was soon added. The hammer mill incorporated a large helve hammer weighing three hundred pounds or more.

Remarkably, the Hutchinson family operated the forge and associated works from 1760 to 1813, a total of fifty-three years, longer than any other Sharon forge. Produced there were a large variety of items ranging in size from nails to ship anchors. In 1813, Amos, Charles and Silas Hutchinson sold the forge, forge lot, coal house with 1,500 bushels of charcoal, water rights and all forge apparatus to successful Sharon merchant George King for \$700. In 1816, King sold the land and forge to Silas A. Gray.

The Gray family was among the earlier producers of wrought iron in Sharon. Born in Scotland, John Gray came to the area and settled in Sharon Valley in 1743. In 1748, he sold his house by the Webutuck Creek to Abel Wood and moved to Sharon Mountain. There Gray later built a forge west of Tanner Road on the stream running from Hamlin Pond.⁷ John Gray died in 1761, leaving four sons, John Jr., Silas, Darius, and William, some of whom continued the forge operation. Darius, primary operator of the



Breached Hutchinson's Hollow dam.

forge, was the father of Silas A. Gray. Silas A. Gray appears to have spent more time buying and selling land in Hutchinson Hollow than in making wrought iron at the forge.

In 1842, Hiram Weed purchased a one-half interest in the Hutchinson Forge from Gray for \$400⁸ and began manufacturing wrought iron along Forge Brook (now Carse Brook). The sale included the Forge Lot of seven acres (+/-), with a forge, forge house, coal shed, forge tools, and a dwelling house. Weed was also granted free and exclusive privileges of water rights and the right to build below the forge, but not to raise a dam or interfere with any waterwheel of the forge. In 1843, Weed purchased the remaining half from George King who held a mortgage of \$436.67 from Silas A. Gray.⁹

The iron ore for the Hutchinson Hollow forge was magnetite, mined from the basement Precambrian gneiss in Sharon's east slopes.

Magnetite, an iron-rich magnetic mineral, was the primary ore for both the bloomery forges and blast furnaces in New York State's Hudson Valley, parts of Vermont, New Jersey and Pennsylvania. In the Upper Housatonic Watershed the primary ores were limonite and goethite, both hydrous (secondary) ores.

Joseph Skinner's 1740 forge, Sharon's first, used limonite and goethite ore from the 1731 discovery by John Pell and Ezekiel Ashley at Old Hill (later Ore Hill) in the southwestern section of Salisbury.¹⁰ But Sharon forges later relegated to action, that of Guinea Brook in the 1700s, Gray's west of Tanner Road in 1750, Hutchinson's in 1760 and the Hutchinson-King-Gray-Weed sequence into the mid-nineteenth century, used magnetite. Magnetite ($\text{FeO} \cdot \text{Fe}_3\text{O}_4$), a mineral containing 72.4% iron, though lacking in some of the qualities of Salisbury District limonite and goethite, provided a very rich ore for Sharon's forges.

The major sources of magnetite in Sharon were located on the east slope of town, west of the Housatonic from the Cornwall Bridge and Swift's Bridge region. Beers 1874 Map shows the primary deposit as the "Morgan Brother's Mine." Additional ore pits were located on Skiff Mountain in Sharon and Kent and a few other sites along Sharon's downhill east side toward the Housatonic River. Ironically, though the mines

were operated for as much as one hundred years, brothers Thomas and George Morgan leased the rights from William Canfield of Sharon only from 1873 to 1875, well past the Hutchinson Hollow Forge operation period of Hiram Weed. Since at least three generations of Canfields owned the property, it appears a more appropriate title for the operation would have been "The Canfield Mines."

Records concerning property rights on the Buck Hill and Silver Hill 150 acres, all include the statement "mines and mineral rights and the removal of ore." A review of Sharon Land Records (here showing only part of the information) indicates the following concerning ownership of the mines:¹¹

- Simeon Smith sold to Samuel Canfield, mines, minerals and mining rights, 1799 and 1802 (at that point most of the ore was used at the forge east of Ellsworth on Guinea Brook).
- Samuel Canfield lease to William Lewis, mines, minerals and mining rights, 1815 and 1819.
- Samuel Canfield sold to Ithamer Canfield, mines, minerals and mining rights, 1819.
- William Canfield (apparently inherited from Ithamer) lease to Thomas Morgan et al (including George Morgan) mines, minerals and mining, 1873.
- William Canfield lease to Allen Studley, et al, mines, minerals and mining, 1875.
- William Canfield sold to William Bartlett, mines, minerals and mining, 1880. Bartlett later sold back to Canfield.

The fact that each of the entries specifically states mines rather than mine, confirms there were a series of mining locations on Buck and Silver hills. In my review of the area on a geologic study in the early 1960s, I found a number of magnetite pits and the major Morgan Brothers Mine. The latter, on Buck Hill, was a large side hill open pit with a tunnel and narrow gauge tracks entering. The tracks were undoubtedly for ore carts. This arrangement was probably set up by the Morgan Brothers whose land entry includes, "may be used for the manufacture of (railroad) car

wheels.”¹² This entry suggests the Morgan Brothers were at least considering the mining of magnetite to be smelted to pig iron at a local blast furnace and then sent to Barnum and Richardson’s car wheel foundry in Lime Rock.

Hiram Weed’s iron works in Hutchinson Hollow incorporated at least three or four water wheels, perhaps even five. One powered the forge bellows, one the helve hammer, one or two powered the foundry and finery forge and one the grist mill. Downstream from the primary dam, another dam remains partially in place. It appears evident from field observations that a wood flume to operate a tub wheel conveyed water from there to the grist mill.

“Little Rivers” were the keys to power in the Tri-State region. Hiram Weed was well aware of the need for additional water from the moderate sized streams during late summer droughts. For that reason an extensive, thickset holding dam was constructed across Forge Brook, 1.4 miles upstream of the iron works. Thanks primarily to the active beaver population, this dam today backs up a substantial amount of water 0.6 mile east of the entrance to the Miles’ Sanctuary. Closer to the iron works, where the stream passes under Surdan Mountain Road, another holding dam was constructed.

Bloomery forges of the Sharon region were modeled after the Catalan forge first used in eighth century historic Catalonia in northeastern Spain. Greatly improved over the earlier designs, local nineteenth century bloomeries included a six to eight foot square hearth with a recessed area in one corner for the fire. From the rear wall a tuyere (iron nozzle) carried the essential air draft provided by a wood and leather bellows powered by a water wheel. The overall height of Hiram Weed’s Hutchinson Hollow forge was probably about eight feet with a chimney extending to increase draft.

In the forge magnetite ore was heated in a charcoal fire raised to a higher temperature with the use of the bellows. When the ore became “pulpy,” it was pulled from the forge and placed on the large anvil under the water powered helve hammer. There forceful pounding drove impurities from the iron. Then the material was positioned back in the forge, heated to a pulp

and run again through the helve hammer. Following repetition of the process, often several times, quality wrought iron was the result.

Hiram Weed’s selection of the year 1842 to restart production at the Hutchinson’s Forge was indeed well chosen. In the spring of 1837, roadbed and rail construction began north from Bridgeport on what would become the Housatonic Railroad. Despite economic and other difficulties, track was laid and the rail line reached New Milford early in 1840. With the rails gradually extending through Kent, Cornwall Bridge, West Cornwall and Canaan Falls, the first train arrived in Canaan in December 1841.¹³

Recognizing the dilemma of prohibitive costs for long distance horse or oxen wagon transportation, Weed and other industrialists near the line quickly made use of this improved and more economical form of transporting iron. Even though the trains were primitive, and the rails constructed of strap iron spiked to a timber wood base, transportation was improved. From Weed’s Forge in Hutchinson Hollow, wrought iron could be transported 0.4 miles east to the road north along the Housatonic (today U. S. Route 7) to Hart’s Bridge (predecessor to the Sharon/West Cornwall covered bridge) across the river and to the railroad station, a total of 2.1 miles. With the Cornwall Iron Company blast furnace operating less than 0.3 miles to the east, the railroad was well equipped to deal with shipments of iron.

While the West Cornwall Station was more closely located, the Cornwall Bridge Station 3.1 miles distant may have been used more often by Weed for the shipping of iron. The nearby Cornwall Bridge Iron Company shipped from there. In addition, the station was more than half way to the primary magnetite mines. Traveling south would allow the delivery of iron and transportation of ore back to the forge. This practice would have eliminated much of the “dead head” travel (oxen pulling empty wagons one way) and would be more cost effective.

In 1843, a rail line was completed from Sheffield, Massachusetts, north through Van Deusenville, West Stockbridge, then into the village of State Line, New York. This connection provided access to two earlier lines, the Hudson and Berkshire Railroad which opened in 1838, and the Western Railroad running from West Stockbridge to Pittsfield, opened in 1841.¹⁴

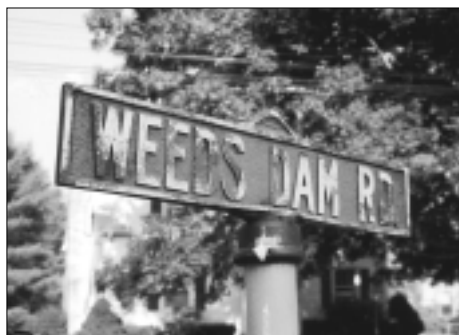
Now Hiram Weed and other local industrialists were provided with essential transportation for the distribution of products.

With the railroad in operation, iron works on the line or within short distances were placed in a much more competitive position. The list of those in closest proximity included the Kent, Cornwall Bridge, West Cornwall and Great Falls furnaces. North of the border, the furnaces at Van Deusenville, Stockbridge, West Stockbridge and Richmond were served by connecting lines. Since the total miles for carting materials were substantially reduced, even the iron works within a few miles of the railroad benefited.

HIRAM WEED BUILDS A BLAST FURNACE

By 1843, Hiram Weed was a substantial landowner and manufacturer of lime and wrought iron. At the age of thirty-five, on February 20, 1844, he married twenty-three year old Aurora G. Norton who was born in Pennington, New York. The ceremony was performed in Sharon by the Reverend G. L. Brownel.¹⁵ Two years later Aurora gave birth to a daughter, Flora Elisabeth¹⁶ (Flora Elisabeth Weed, 1846–1916). In 1848 a second child Mary Aurora (1848–1851) was born to the couple.

Though in the early 1840s Hiram was producing lime, wrought iron and charcoal, the lure of bigger iron production beckoned. Primary needs for the construction and implementation of a blast furnace included the availability of iron ore, charcoal, lime for the furnace flux and water power. Water power was needed to turn a water wheel to provide the energy to operate the blowing tubs. Locally, the blowing tub system replaced the bellows design in blast furnaces constructed after 1820. Designed with two large cylinders with alternating piston strokes, the function of the blowing system was to produce the high volume of air blast



A portion of the breached Weed's Dam seen from the west side. The dam provided the volume necessary to operate the two waterwheels that powered two sets of blowing tubs for the blast into Weed's Furnace.

required to bring the temperature to the 2800°F to 3000°F range in the furnace hearth. Blowing tubs increased the air pressure into the furnace at about one pound per square inch, enough to stimulate the needed blast. But, the primary function of the blowing mechanism was to supply the needed 150,000 cubic feet of air required to produce each ton of pig iron.

Even as Weed and his men were successfully operating the forge and hammer mill in Hutchinson Hollow in the early 1840s, they were at work constructing a major dam across the confluence of Beardsley Pond Brook and Calkinstown Brook. Today serving as the base for Weed's Dam Road, the dam remains consist of a 116 foot northern section, a forty foot spillway and a southern portion 157 feet in length, a total of 313 feet from north to south. Constructed primarily with large rocks of granitic gneiss, Weed's Dam was reinforced throughout the interior, at the spillway and to the east with large timbers. The dam with its solid construction exemplified a substantial undertaking for the period. From the beginning it is obvious that Hiram Weed was well aware of the limitations of his water power. In addition to the large dam at the ironworks, a control dam was constructed at the

outlet of Beardsley Pond. Weed also had the advantage of the flow of Calkinstown Brook into the holding pond behind his dam. As the dam was being constructed, work commenced on head and tail races, water wheel pits, blowing tubs and a blast furnace a short distance down stream.

Using two water wheels and two sets of blowing tubs, the furnace went into blast in 1845.¹⁷ During the first years of operation, Weed's cost for charcoal and iron ore to make one ton of iron was \$19.83,¹⁸ a little above average for the then twenty-one operating blast furnaces in the tri-state region. In six months of 1855, Weed's Furnace produced about 500 tons of pig iron using ore from the Salisbury, Amenia and Palmer (bordering north of Amenia Mine) mines. That amounted to some 19.32 tons per week; acceptable for the period when one considers Hiram closed down for Sunday's 24 hours.

To Hiram, the "Lord's Day" was just that, the day reserved for the Lord. No work should be done on that day. While this practice was Christian in theory, blast furnaces were designed to operate twenty-four hours a day, seven days a week, week after week. Banking the fire from Saturday midnight to Sunday midnight significantly disrupted the iron producing process. When start up time arrived, the fire had cooled and "clinkers" had formed in the interior shaft and bosh. As a result, it often required an extra day or two to be back in full production. The total of 19.32 tons of pig iron per week averages to about 2.8 tons per day. Since Weed's furnace was in production only 5 to 5.5 days a week, the average daily output could be more realistically expressed as 3.5 to 3.8 tons per day. Had Weed's Furnace like all others operated at continuous full blast, weekly production of pig iron would be projected to a minimum of 24.50 tons and an annual rate of 710 tons.¹⁹ By comparison with other smaller local furnaces (Mount Riga at 672 tons, Joyceville at 560 tons, Dogtown at 671 tons, Macedonia 896 tons, Chapinsville 896 to 1,336 tons and Kent Furnace ranging from 510 to 1,154 tons) Weed's production was more than acceptable for the times. In short, despite the weekly interruption for some old time religion, Hiram Weed's blast furnace appears to have been relatively efficient.

Though some sold locally, most of Weed's pig iron was shipped by rail to customers in New Haven, New York and Newark, New Jersey. With the

Housatonic Railroad completed from Bridgeport to North Canaan in 1841, local iron makers had a reasonably economic form of transportation for their product. For Weed, the six mile haul by mule or ox drawn wagon to the West Cornwall station added somewhat to the cost. Wagon hauling was slow, probably costing \$2.00 to \$2.50 per load to the station, a substantial amount for the period. In addition, the load weights had to be limited due to the steep incline down the mountain to the Housatonic River before crossing to West Cornwall. By 1851, the Harlem Railroad (later to become the New York Central Railroad) was completed from New York City to Chatham. Now Weed had the option of delivering pig iron to the Amenia, Sharon Station or Millerton depots.

Records show that limonite and goethite ores for the furnace were more often hauled by wagon from the mines in Amenia than from Salisbury's Ore Hill. For that reason it appears Weed had the pig iron delivered to the Amenia station where, after unloading, the wagons could be loaded with ore before returning to Calkinstown.

Lime for use as a flux in Weed's Furnace came from his quarry off White Hollow Road. While some of the charcoal was made just north of the quarry (charcoal beds are easily visible west of the road to this day), most of the fuel was transported from District #9²⁰ on the mountain in what today is a portion of the Housatonic State Forest.

The furnace initially was of the cold blast type. Smaller than most, the initial stack of local Stockbridge marble stood twenty-four feet high. In the furnace interior, above the hearth, the bosh diameter measured seven feet.²¹ Eventually Hiram Weed installed a heating oven on the furnace top, thereby converting it to a warm blast type.²² This adaptation reduced the amount of charcoal needed to make a ton of iron by fifteen to twenty percent while also reducing production time. Since in their 1935 publication, Keith and Harte²³ show the furnace height as thirty-two feet and bosh diameter as ten feet, it appears the furnace was enlarged considerably at the time of the warm blast addition.

The industrial census of 1850²⁴ indicates Hiram Weed had invested \$10,000 real and personal estate into the construction and operation of his blast furnace. The record further shows the furnace used 2,500 tons of iron