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The Limekiln Age and the Bottom Lime

By Kimberly R. Abe

– photograph by John McGrain, October 2003

The row of lime kilns is a feature of Cromwell Valley Park. From Left to Right, Kilns No. 1, 2, and 3. Kiln No. 1 is a vertical shaft continuous kiln; No. 2 is a more primitive intermittent box kiln, while Kiln No. 3 is another vertical shaft continuous kiln.

The Lime Kiln Bottom kilns, also called the Jenifer-Risteau-Shanklin Kilns, and the Merrick Log House are situated along Minebank Run within the 371-acre Cromwell Valley Park on Cromwell Bridge Road, about a mile north of the Baltimore Beltway. The stone and brick kilns are bunkered in a row into the hillside, with the third kiln resting approximately 75 feet from the log structure.

The third kiln (Kiln No. 3) is a vertical shaft continuous kiln. The middle kiln (Kiln No. 2) is a more primitive intermittent box kiln. The southernmost kiln (Kiln No. 1) is also a vertical shaft continuous kiln that is similar to Kiln No. 3 except that the main block tapers in slightly towards the top. The two-story log and frame Merrick Log House was likely built to house slaves or workers who oversaw the work on the kilns. Although the chimneys of the vertical shaft kilns appear to have toppled, the kilns and the log structures retain original materials on the exterior and are preserved amid trees and meadows in an area once known as "Lime Kiln Bottom." The trees that were harvested to fuel the kilns have long since grown back as nature has slowly reclaimed this valley that was once a center of early industry.

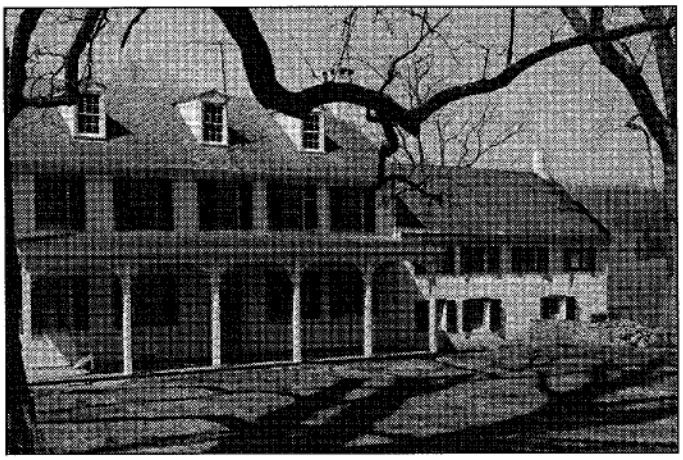
Slaves and workers attended to these belching stone kilns around the clock to meet the area's demand for lime that was used as whitewash, mortar, and fertilizer. Lime fertilizer helped to make the Mid-Atlantic region the "wheat belt" of the world from the late eighteenth century through the late nineteenth century.

History of the Industry

The kiln ruins and the log house were accepted by the National Register program because they embody important characteristics and methods of construction representative of the evolving technology and architectural design of the lime industry throughout the 19th century. They are within the original boundaries of the "Long Island" land survey, patented to Thomas Stansbury in 1719 and owned by the Risteau family and their descendants, the Jenifers, until the 1960s. These structures are the only known intact collection of such industrial resources in this and adjoining counties.

Baltimore County was never a major player in the tobacco economy that predominated in the Chesapeake Bay region in the 17th and 18th centuries, largely because only 20 percent of its land area was comprised of the flat sandy lands suitable for tobacco cultivation. The 1798 tax list reveals a sparsely inhabited and primitively developed county with only 1,457 residences, over half of which were constructed of log.[1]

Cromwell Valley was comprised of several large tracts, patented in the late 17th and early 18th centuries, called "Vulcania," "Fellowship," "Gay's Good Fellowship," and "Long Island."[2] Long Island was the only tract that contained a structure in 1798. This small structure was owned by John Talbott Risteau and still stands opposite the kilns across Minebank Run, encased within a much enlarged vernacular-style stone house.[3]



– photograph by John McGrain, March 1986

The stone and stucco Long Island house dates to at least 1783 and was probably started by John Talbott Risteau. The three bays on the right side of the central block (the section with the porch) comprise the original house, as a seam in the front wall proves.

The sparsely populated county changed rapidly in the first half of the 19th century. The Baltimore region became a center of early American industry and dominated the world wheat and flour markets well into the 19th century. The region had rich deposits of iron ore, clay soils suitable for growing wheat, and the deepest river on the Chesapeake Bay, the Patapsco. Both the Patapsco River and the Jones Falls ran across the fall line north of Baltimore, providing millers with an ample supply of water power. Because of such market circumstances and natural conditions, the county population grew to include 40,250 residents by 1830, with textile mills and farming accounting for most of the growth. There were 26,814 people living in Baltimore in 1800 and by 1820 there were another 36,224 residents.

Cromwell Valley remained a rural outpost compared to the bustling city port and the county's mill villages. The J. C. Sidney and P. J. Browne map of 1850 indicates that there were only three property owners with residences in the valley: Carlisle Howard, John Plaskitt, and Dr. T.C. Risteau (son of John Talbott Risteau).

Although it is not evident from the 1850 map, Cromwell Valley was already becoming known as a center of lime production. As early as August 23, 1801, the Baltimore *American* ran an advertisement for a tract of woodland adjoining Charles Ridgely's Hampton estate, describing the property as lying "near lime kilns" where the burners would pay $3.50 per load of wood. Another early reference to lime kilns in Lime Kiln Bottom appeared in an 1826 deed to a nearby property on Satyr Hill Road.[5]

The lime kiln industry rapidly expanded in the Baltimore region in the 19th century because:

> Somewhere about 1800, agricultural lime came into vogue as a restorative for farm soil ruined by a century of tobacco culture and the failure to rotate crops frequently enough to give the earth time to rebuild its moisture and organic content. The restoration system really worked in Maryland, and two of the nation's presidents were vocal supporters of restoration. Maryland farmers joined Washington and Jefferson in writing to the *American Farmer* about their experiences in saving crop land. The Cromwell Valley played its part because there were large, accessible deposits of "Cockeysville marble" underground. [6]

The Texas area, several miles northwest of Cromwell Valley, rapidly became a major center of production. Commercial lime burning began at Texas in 1804, and by 1852 there were 51 lime kilns in operation in and near Texas.[7] As the Baltimore area lime business expanded, competition increased for the farmers' patronage, was evidenced in the following poetic advertisement from the *Baltimore County Advocate* of May 29, 1858:

> "The days of cleaning houses have come; the saddest of the year,"
> And if you want the best of lime, why you can get it here;
> Burnt down in Limestone Bottom, just north of Satyr Hill,
> Of the very best quality, from CRANE and THOMPSON's Kiln.
> The Lime is white and clear of grit, and truly called "good,"
> As the stone is of first quality, and well burnt with wood;
> A good coat of white-wash now, will last until next winter-
> They understand their business—*they sent a bushel to the printer.*

It is not known whether any of the eight ruinous intermittent kilns in the valley might be the Crane and Thompson Kilns. However, much light was shed on the kiln business in this valley during the last half of the 19th century due to the cooperation of Mrs. Lillian Jenifer and Mr. Bruce Stuart, a Shanklin family descendant, both of whom provided access to family records related to this site. The earliest of these family documents is a deed of January 23, 1860, from William Robinson to Dr. Thomas C. Risteau, referencing a patent on a kiln design:

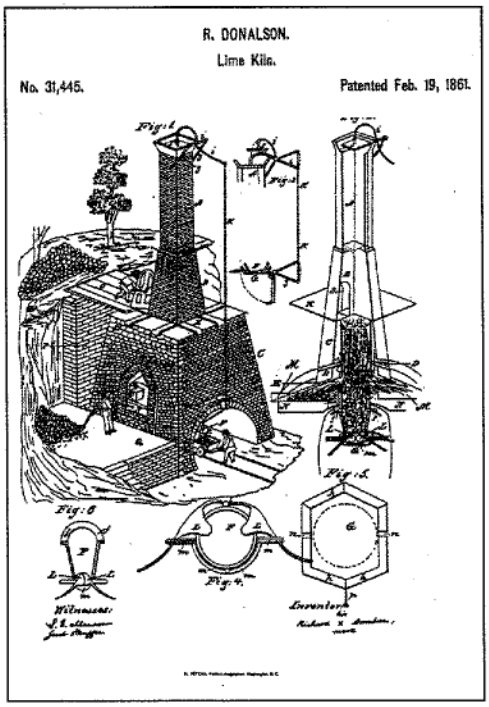
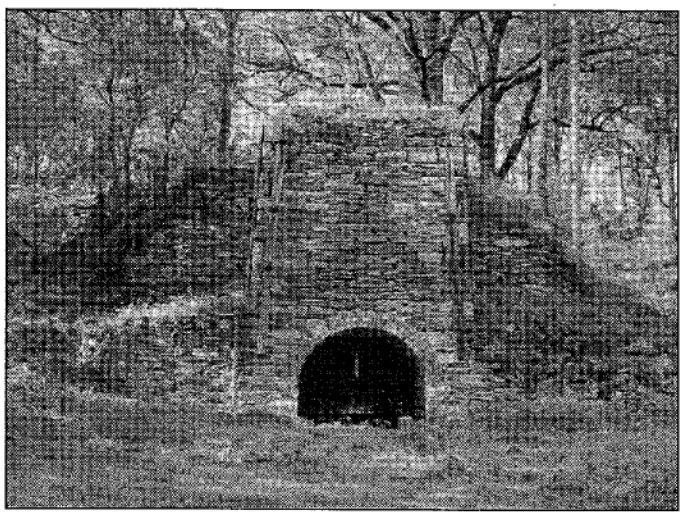


Diagram of the lime kiln patented by R. Donaldson on February 19, 1861.

> Whereas I, William Robinson of the City of Baltimore and State of Maryland did obtain Letters Patents of the United States for "Improvements in Lime Kilns" which said letters patents bear dates the fourteenth day of April in the year Eighteen hundred and fifty seven___, And whereas Doctor Thomas C. Risteau of Baltimore County State of Maryland is desirous of acquiring an interest therein____.... that for and in consideration of the sum of fifty dollars lawful money to me in hand .... unto the said Thomas C. Risteau the right to erect and use one Kiln on his farm in said County of Baltimore which right I have in the said invention and security to me by said letters patent and in no other land or places than on his said farm, the same to be held by the said Thomas C. Risteau for his own use . . .

Patent No. 17056, dated April 14, 1857, was filed by William Robinson of Baltimore at the U.S. Patent Office. Thomas C. Risteau probably learned about the innovation from reading a story about William Robinson's new patent for a "perpetual lime kiln" in the *Baltimore County Advocate* of April 25, 1857.



– photograph by John McGrain, October 2003

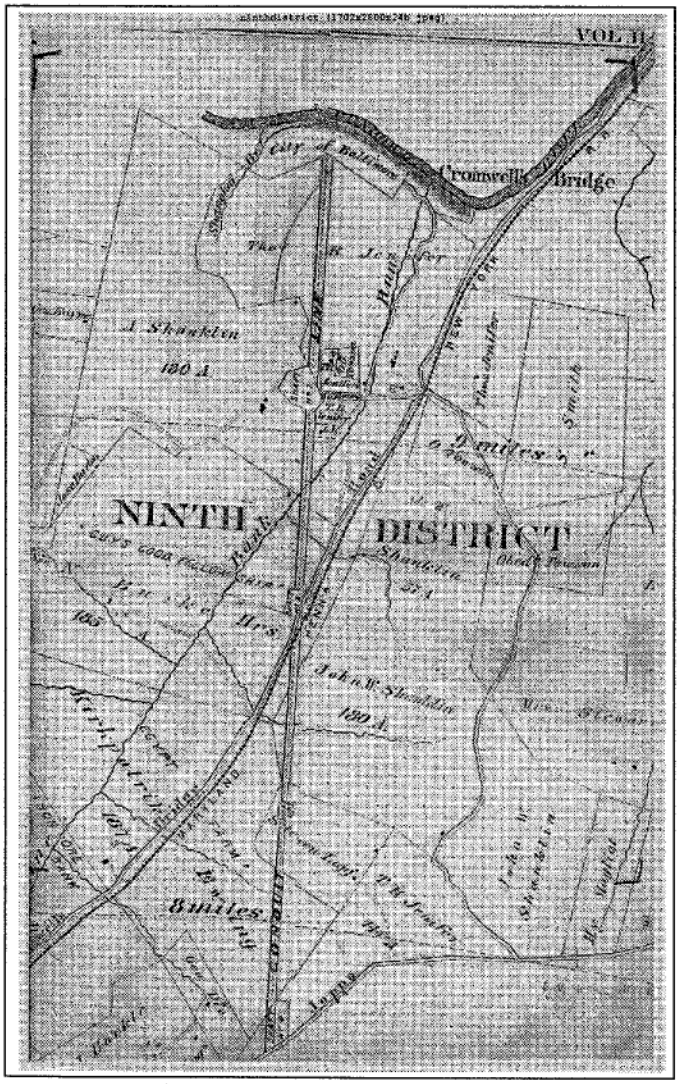
Lime kiln No. 1 was held together with timber braces on the front.

Thomas C. Risteau likely had his patented kiln in operation by the time the 1860 Census of Manufactures showed him as turning out 6,000 bushels of lime made from 6,000 bushels of limestone and 180 cords of wood, with one employee paid $26 a month.[8] Although this record indicated that Risteau paid a salary to one of his employees, many of his workers were not paid. According to the 1860 census for the 9th District of Baltimore County, Dr. Thomas Risteau owned 20 slaves.[9] This statistic placed him as one of the 13 largest slaveholders in the county at the eve of the Civil War.[10] From the time they had arrived in Maryland in the early 1700s, the Risteau family's financial success was partially at the expense of human freedom. A family genealogy indicates that Thomas Risteau's father, John Talbott Risteau, and his grandfather, Captain John Risteau, also owned slaves.[11]

However, Thomas C. Risteau was not like the rest of Baltimore County property owners, who by 1860 were becoming increasingly less reliant on slave labor, and therefore less economically affected when the state of Maryland emancipated the slaves in November 1864. Such changes may have forced Risteau to advertise to rent his "patent limekiln which will burn 5,000 bushels per month with the quarry attached," in the *Maryland Journal* of October 14, 1865. That same year, Baltimore County land records showed Dr. Risteau transferring the Long Island tract to his son-in-law, Daniel Jenifer, Sr., to hold in trust for his grandson, Thomas Risteau Jenifer. Dr. Thomas Risteau lived 10 months past the end of the Civil War. The Baltimore *Sun* announced that "Doctor Thomas C. Risteau . . . M.D., 1819, University of Maryland" died on February 3, 1866.

There are no records that indicate that his son, Daniel Risteau, had any major role in the kiln operations. The two ledgers and other account records that survive are from the time his grandson, Thomas R. Jenifer, owned and managed the farm and the kilns. One ledger is titled "Thomas R. Jenifer Lime and account book, September 25th 1876" and the other is "Thomas R. Jenifer Lime and account book, January, 1883."

The first page of the 1876 ledger identified 14 clients. This "Index to persons in Account," included immediate neighbors: Yeager, Sam Simms, and George Fastie. The same page also contained the first reference to a Shanklin who "borrowed" lime. (This is significant because, later in the century, Jenifer entered a partnership in the lime business with one of the Shanklin family.)



G. M. Hopkins' 1877 county atlas showed "L.K." for "Lime Kiln" on the north bank of Mine Bank Run, close to the access shaft of the Montebello water tunnel then under construction.

In his 1876 ledger, Thomas Jenifer recorded his lime sales by the client's name and by the month. The records show that the business peaked in the spring and summer and continued into the winter months but at a much slower production rate. Jenifer may have required a minimum order, because the majority of the orders were for approximately 50 bushels of lime or more, at prices ranging from 25 to 40 cents a bushel.

The 1877 G. M Hopkins *Atlas of Baltimore County, Maryland* indicated that the kiln property was owned by T.R. Jenifer and O.G. Towson, and showed O. Towson as a landowner on Satyr Hill Road in Cromwell Valley. However, Jenifer made no reference to Towson in his 1876 ledger. The only mention of a Towson was in correspondence from Mr. Purcell of Forest Hill, Harford County, one of Jenifer's loyal distributors and clients, almost 16 years later on September 18, 1893. Purcell wrote to Jenifer to "be certain not to make no agreement with Towson for he will undersell you every time if he can, that is the only way he can sell his lime here. . . ." and, "Now let him come a gain and talk about me to people that I worked with for 16 or 17 years and he will find out his mistake every time."

This correspondence illustrates the competitive tensions within the lime business, and the local newspapers provide valuable information about the hazardous working conditions and labor unrest in the county in the later half of the 19th century. On January 20, 1876, the Baltimore *American* reported that the body of a man was found "below the breast of a lime kiln on the premises of Thomas R. Jenifer in the Ninth District of this county . . . the distance from the top to the bottom of the kiln is twenty-five feet." A similar fate befell another lime worker in Texas earlier in the century. On February 26, 1856, the *Baltimore County Advocate* reported that a Negro named Henry Butler was killed by falling into a lime kiln at Texas. A Baltimore *Sun* story on May 27, 1854, chronicled the labor unrest wrought by low wages and harsh working conditions:

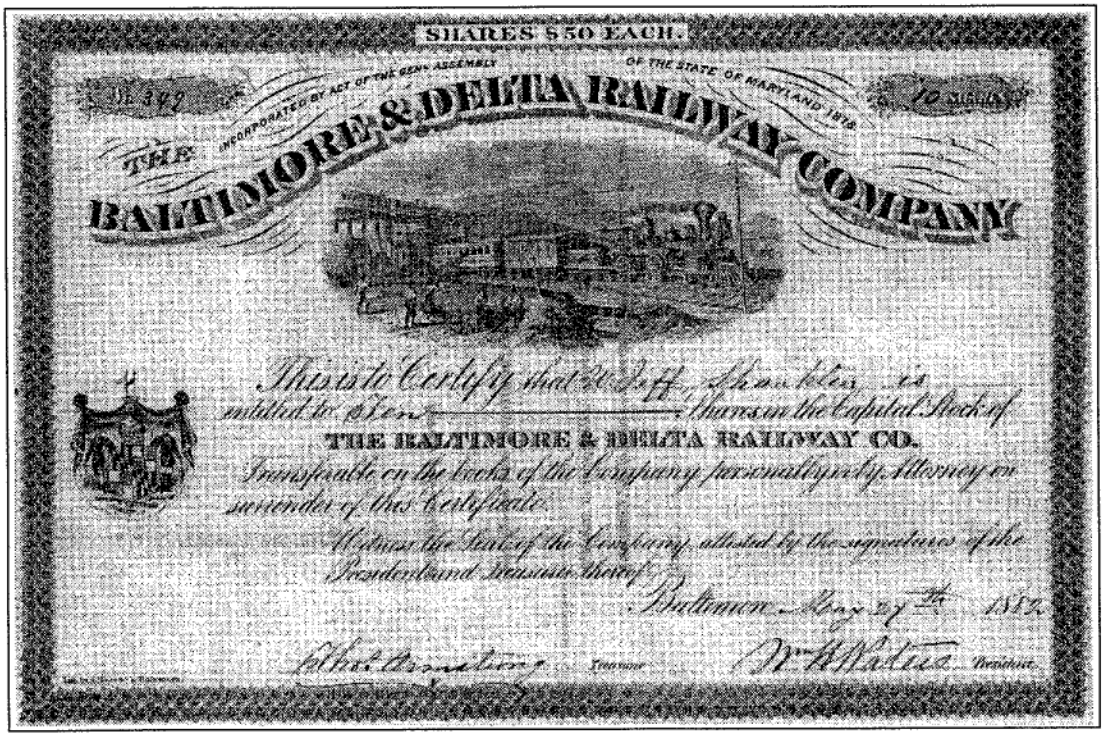
> *Texas*—There has been considerable excitement among the laborers in Texas for some time past. A handbill was posted up about two weeks ago, warning strangers from coming there to work, on peril of their lives, the hands there, endeavoring in this way, to bring the employers to their terms. One day last week, a "strange" man went to work for Fell & Robinson; the same night he was caught and badly beaten by some persons.

It was not likely that the small-scale operations in Limekiln Bottom generated labor uprisings like those at Texas and elsewhere throughout the nation in the latter half of the 19th century. Although the ledgers contain some information on the workers, there are no documents available with which to compare Jenifer's wage scale to the earnings of other kiln workers in the region. Jenifer did note in his 1883 ledger that a Daniel Thompson was paid $9 a month in 1885 and that a David Winder was paid $12 a month in 1894. Since all the papers and the full ledgers were not available for study, it is uncertain how many years Daniel Thompson and David Winder were employed with the firm.

Both Thompson and Winder must have covered a lot of territory on their feet because the 1883 ledger indicates that they frequently required new shoes or shoe repair, with new shoes costing $2 and repairs costing roughly 65 cents. The 1883 ledger showed David Winder as working for the firm from 1893 to 1896. Either David Winder was good about his check-ups or he was frequently ill, because a Dr. Harrison was paid from his account at least twice a year over a two-year period.

The 1883 ledger also indicated that Jenifer did rent a house for $5 a month to a Mr. H. Hunts, but there is no information to connect this rental to the adjacent log structure. To complicate matters, Jenifer did have other real estate holdings, including the Glenmore Property, for which he itemized the cost of sale advertisement in the local papers in 1883, as noted in the 1883 ledger. Jenifer also used his 1883 ledger to jot down miscellaneous farm records, like the names of his livestock (the cows: Ermengarde, Valeur Maid, Belanata, and also Little Dan the Bull).

County newspaper accounts neatly reconcile with the ledger data. The *Maryland Journal* of January 2, 1883, reported that Thomas R.



– Jenifer family papers

The lime entrepreneurs invested in the small railroad company that reached the Cromwell Valley in the 1880s. Stock certificate of the Baltimore and Delta Railroad Company issued to W. Jeff. Shanklin, May 27, 1882.

Jenifer and John W. Shanklin formed a new firm for burning agricultural lime, and that "The bottom lime is recognized by builders as the purest and whitest in the state for white coating and free from gritt." This 1883 Ledger contains multiple references to cash exchanges with A.W. Shanklin, J. W. Shanklin, and Jeff Shanklin. As noted in the 1883 ledger, the newly formed company built a new kiln in the spring of 1883, at a cost of $1,181, with $301.50 of this amount used to pay the mason.

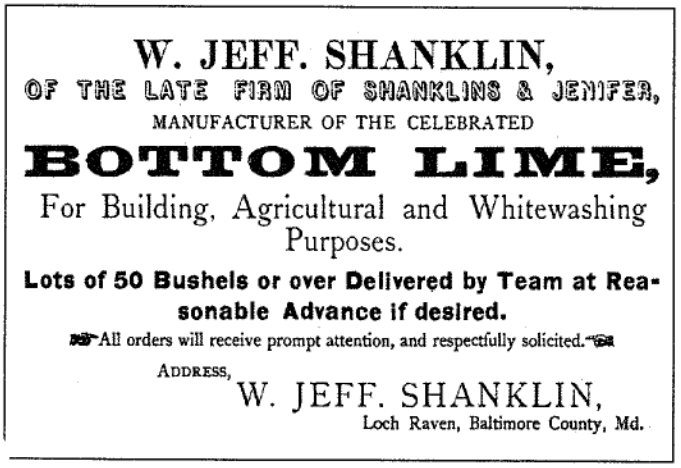
The small firm was profitable enough ten years after it partnered to expand its business. On June 3, 1893, Jenifer and Shanklin announced in the Baltimore County *Democrat* that:

> Having increased facilities for burning lime, we take this method of informing the people of Baltimore and Harford Counties that we are now prepared to furnish BUILDING, WHITEWASH, and AGRICULTURAL LIME which we offer at reasonable rates. Our stone being of a superior quality we guarantee satisfaction. Kilns at Loch Raven.

Loose receipts tucked into the ledgers dating through the late 1890s indicate that the firm maintained a steady business with the National Building Supply Company, with warehouses at Spear's Wharf and Patterson Street in Baltimore. This company sold coal, fire brick, and cement to Jenifer and Shanklin and, in return, purchased "Bottom" lime. John J. Kelly is identified on the receipt as the president of this supply company. His name also appears in the 1883 ledger. This business exchange used the freight cars of the Baltimore and Delta Railroad that ran alongside Cromwell Bridge Road. W. Jeff Shanklin wisely invested in the railroad that served to distribute his lime, owning at least ten shares valued at $50 each.[12]

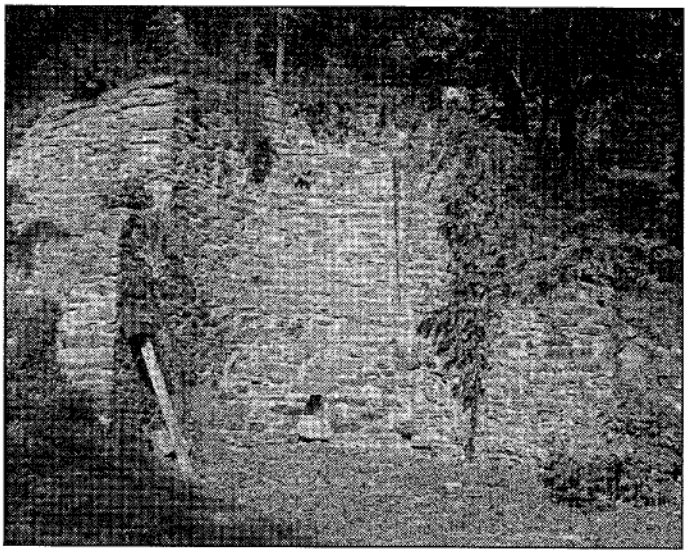
The history of the kilns and the Jenifer and Shanklin firm becomes hazy after the 1890s. The 1896 tax ledger for District 9 listed Thomas A. Jenifer with "1 patent Lime Kiln" in "Lime Kiln Valley" assessed at $200.[13] The latest receipt addressed to "Messrs. Shanklin and Jenifer" was dated September 1, 1897. There was no mention of the kilns in the tax ledgers of 1911 and 1918. Bromley's 1915 *Atlas of Baltimore County* showed the name A.W. Shanklin in the area of the kilns.

At some point after 1897, W. Jeff Shanklin started his own lime business as described on the following business card or advertisement:



W. JEFF. SHANKLIN,
OF THE LATE FIRM OF SHANKLINS & JENIFER,
MANUFACTURER OF THE CELEBRATED
BOTTOM LIME,
For Building, Agricultural and Whitewashing Purposes.
Lots of 50 Bushels or over Delivered by Team at Reasonable Advance if desired.
All orders will receive prompt attention, and respectfully solicited.
ADDRESS,
W. JEFF. SHANKLIN,
Loch Raven, Baltimore County, Md.

Absent a Shanklin family genealogy, it is difficult to determine which family members were affiliated with the Jenifers in the lime business. On January 11, 1915, the Baltimore *Sun* reported that, "W. Jeff Shanklin, a well-known farmer of the Old Harford Road, is confined to his home suffering from partial paralysis. He is 72 years old and is brother of John W. Shanklin, a former Clerk of the Court for Baltimore County, and also of Arthur W. Shanklin, former County Treasurer."



– photograph by John McGrain, October 2003

To the southwest of the cluster of three lime kilns there was one free-standing stack which has survived as a substantial ruin.

The 1918 Tax Ledger for Election District 9 listed Thomas R. Jenifer's estate with the present Jenifer mansion and two tenant houses, one measuring 36 by 14 feet, which closely approximates the adjacent log house. This tax data reconciles with a plat map drawn by a county surveyor in 1922 for Mrs. J. W. Shanklin. It showed her as owner of two parcels totaling almost five acres at the kiln site, which were encircled by property marked as belonging to the heirs of Thomas R. Jenifer.

In 1929. The Maryland Geological Survey reported that the only kiln still operating in Baltimore County was that of the Lindsay family at Texas.

Lime and Lime Kilns

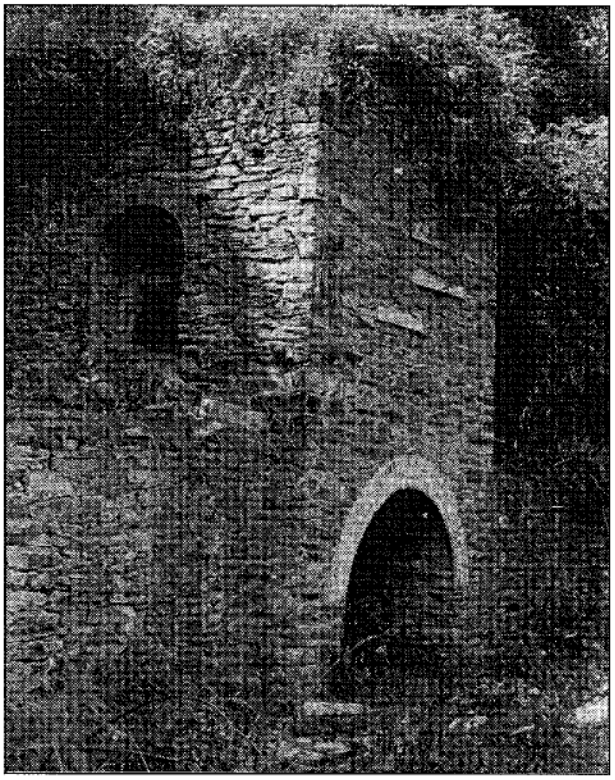
Lime improves soil structure because it neutralizes the acid in the soil. The lime neutralizes the acid from decomposed plants that are plowed back into the fields. The lime also adds calcium and magnesium in the soil, restoring nutrients needed to produce a bountiful crop. Lime was used as a binding agent in mortar until the 1930s. It was also used to whitewash and disinfect farm buildings.

Lime is found in two main forms: quicklime and hydrated lime. Quicklime is made when limestone is burned for several hours at 1,000 degrees centigrade. The heat removes the carbon dioxide in the calcium carbonate, leaving behind calcium oxide and impurities. Hydrated lime is made when water is added to quicklime. This process is called "hydration" or "slaking." When water is added back in the right proportions, the quicklime is transformed to hydrated lime which is a dry powder called calcium hydroxide. Hydrated lime is more conveniently handled and transported than quicklime, which is caustic enough to set a wooden building or ship on fire. Lime is useful because when it is used in whitewash and mortar, it causes both of these substances to harden as the water added to the lime evaporates and the lime reacts with carbon dioxide in the air. This process is called the "lime cycle."

Over the centuries, there have been numerous technological improvements in lime kiln designs. Cromwell Valley has one intermittent box kiln (Kiln No. 2) and two vertical shaft continuous kilns (Kilns No. 1 and 3). Intermittent kilns were an improvement on the earlier stack or field kilns, which were basically piles of stone and wood that were burned within a seal of mud or clay. Intermittent kilns were either square or circular structures where wood and limestone were burned and then the lime was raked out.

Continuous kilns could be operated 24 hours a day but, in actual practice, they were not typically operated during the winter months when the fuel was wet and road conditions were poor. The more the kiln was in operation, the greater the profits. Vertical shaft continuous kilns were more energy efficient than earlier kilns and thus more profitable. Energy efficiency was an important consideration by the mid-19th century when wood was already a scarce resource. Intermittent kilns were also a labor intensive operation because they had to be loaded, burned, cooled, and then unloaded in a work cycle that took between 9 to 13 days.

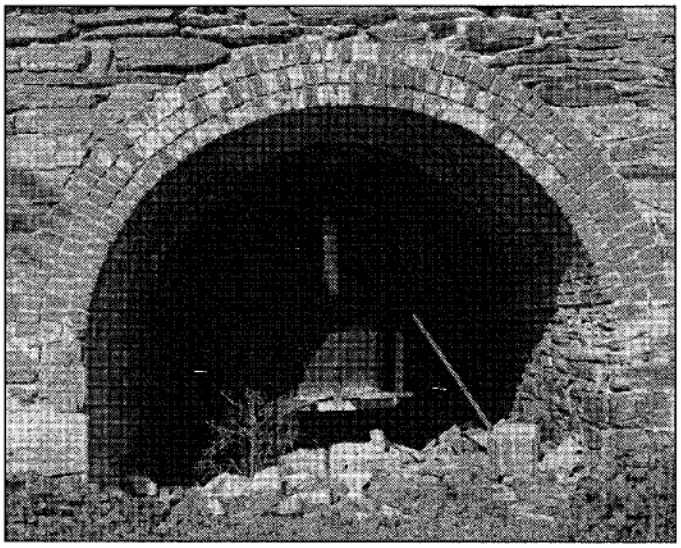
Vertical shaft continuous kilns recovered heat from the natural upward passage of hot air through the kiln. The chimney on the top aided in the upward draft of the warm air and also removed the smoke from the loading areas. The smoke was smelly and it was deadly. The carbon dioxide gas released when the lime was burned could easily suffocate the lime worker. The two vertical shaft continuous kilns are



– Jenifer family collection

Vintage photo of the lateral arch containing "poking holes" on the side of Kiln No. 3, where the lime burners adjusted the air supply.

built with four- to five-foot-thick stone and brick walls that could withstand heat and still cool down. Kilns were built with stone rather than steel because stone diminished the amount of heat loss. Most of the strain on these structures was lateral, pushing the stone out. The wood and iron or steel bracing system and stone buttresses along the front walls of the two continuous kilns allowed them to be operated on an aggressive schedule.

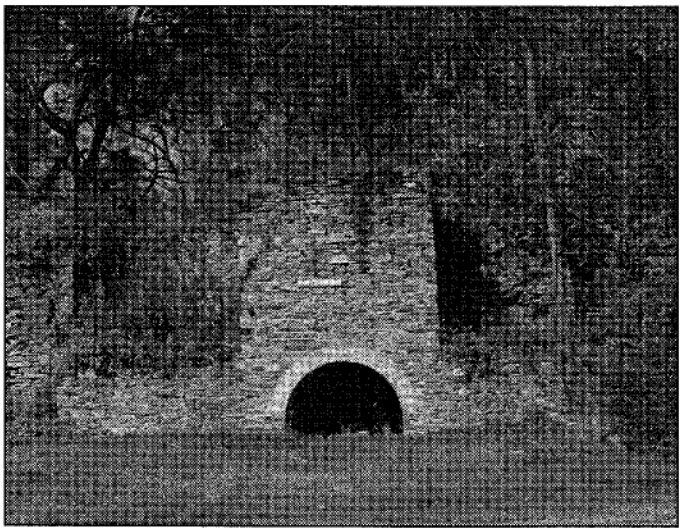


– photograph by John McGrain, October 2003

Lime kiln No. 1 is still equipped with its cast-iron hopper mechanism within an elegant brick arch orifice in front.

The kiln had to be carefully operated to make quality lime. The area at the bottom of the kiln was called the "cooler," and this was where the hot lime was cooled by the incoming air. Halfway up the kiln was the firing zone and the air was already hot by the time it reached this point. The firing zone needed poking holes so that the process of combustion could be monitored and checked. Lime and fuel were loaded at the top of the kiln in an area called the "hopper."

Wood was the preferred fuel because a wood fire produces a flame that is longer, cooler, and more moist than that emitted by coal or coke. Wood-burnt lime was considered the highest quality lime. An advertisement in the *Maryland Journal* of February 23, 1878, specified "wood-burnt" lime for sale by Price and Albert in the Cockeysville area of Baltimore County.



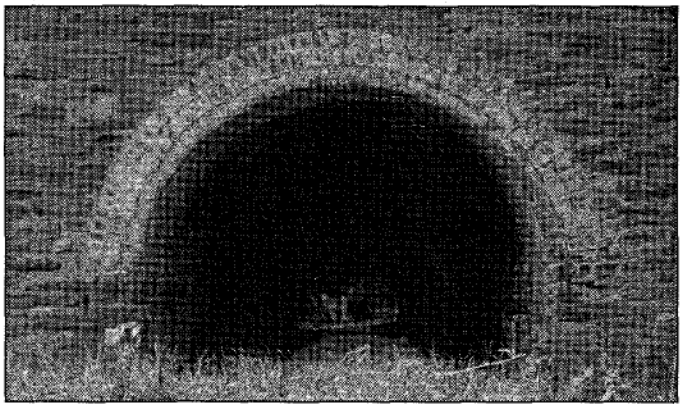
– photograph by John McGrain, October 2003

Lime kiln No. 3 has a slightly different design and has no timber bracing.

The Sites Surviving in the Park

ntermittent Box Kiln (Kiln No. 2)

Kiln No. 2 is comprised of three stone facades that protrude from the hillside. An occasional limestone or marble stone is contained within walls that, like the other kilns, are predominantly made of gneiss biotite stone.[14] The front facing facade measures approximately 15 feet across, and the two side facades are partially built into the hillside. The stones on the north side of the front façade are stained orange. The cave-like opening at the base is crude compared to the elegant brick arches of the vertical shaft kilns. It is approximately two



– photograph by John McGrain, October 2003

Vaulted orifice of Lime Kiln No. 3.

eet wide and two feet high, with three bricks capping the top. (Photographs of the kiln from the 1980s show another layer of bricks at the top of the arch opening that have since become detached from the structure.)

From the top of the kiln, it is evident that this box kiln was not built with the same thick stone/brick walls as the vertical shaft kilns, but it was built deeper into the hillside to achieve stability. The oven area is approximately 13 feet in diameter and currently filled in with fallen limestone and dirt. Its relatively narrow front wall is buckling and unstable. Two openings, (one as large as two feet by five feet) are forming within the wall, and stone is steadily detaching from these two areas as well as from the top two feet of the kiln's walls. There is no mortar evident between the stones.

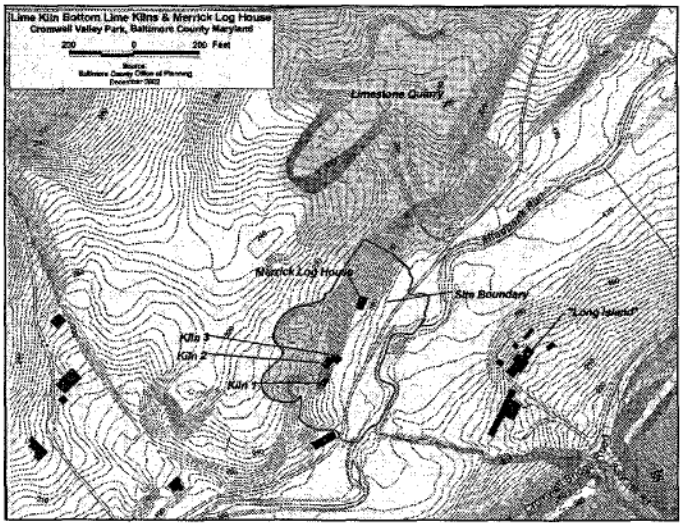
Vertical Shaft Continuous Lime Kiln (Kilns No. 1 and No. 3)

Kiln No. 1, the southernmost vertical shaft continuous kiln, is a stone and brick structure, eight feet wide at its base. The arch of the kiln is six feet six inches from the floor to the inner curve; the inner chamber at the bottom is seven feet deep, front to rear. The kiln is equipped with an iron cooler apparatus set in the roof of the arch, still full of lime. The long-handled iron tongs used to open and close the cooler apparatus are still in place. Unlike the other vertical shaft kiln, Kiln No. 1 tapers toward the top of the kiln, moving from 14-feet square at its base to 12-feet square at the height of the main shaft. In addition, the buttress walls in Kiln No. 1 are angled, whereas in Kiln No. 3 they are squared. There are two sets of wood braces along the dges of each of the three facades protruding from the hillside that are ıeld in place with iron framing to form a skeletal brace within the kiln. The bracing system prevented the outward movement of the kiln under pressure. The iron rods have corroded and in some places are broken off.

The top of the kiln is approximately 12-feet square, with one wall bunkered into the hillside. The oven area, approximately four feet in diameter, is filled in with limestone pieces and reused bricks— likely the brick from a vertical shaft chimney no longer in existence. A brick chimney would have carried the noxious fumes beyond the range of the workers at the top of the kiln. An iron rod approximately 1½ inches in diameter trims an approximate nine-foot-square shape within the top of the kiln.

The northernmost stone/brick kiln is similar in its dimensions and features to Kiln No. 1, except that the walls are square to the top. This kiln lacks the wooden braces of Kiln No. 1 but still retains the end bolts of the internal iron rod system with its 1½-inch diameter rods set approximately two to three inches away from the stone kiln wall. It is possible that wooden braces were also used in this kiln. The kiln is eight feet wide at the base; the arch at the bottom is six feet six inches from the floor to the inner curve; the inner chamber at the bottom is seven feet deep, front to rear. It also has an iron cooler apparatus similar to Kiln No. 1, but it is placed farther to the rear of the arched chamber. This kiln also retains the long-handled iron tongs used to open and close the cooler apparatus. There is a pile of gray colored lime under the cooler apparatus. Each side of the kiln contains a three-course brick arch over an opening like that in Kiln No. 3, and the main block of the kiln also has the same iron/steel skeletal rod and pin bracing system.

The top of Kiln No. 1 measures approximately 13 feet-square. Like Kiln No. 3, this installation has a four-foot diameter oven area filled with brick and limestone pieces. It is likely that these continuous kilns had the kind of chimneys depicted in a diagram of a kiln in published sources of the same era. An undated early photograph of the kilns is the only evidence that at one time this kiln had a chimney stack as well

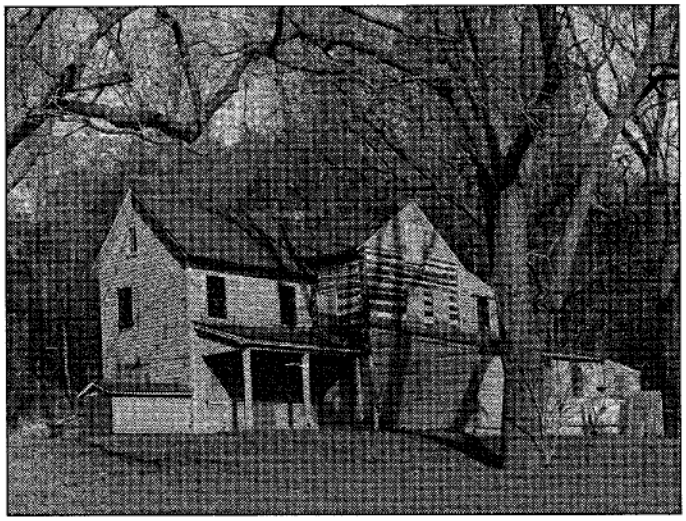


– Baltimore County Office of Planning

Topographic map showing the man-made features in and near Cromwell Valley Park.

as a one-story shed attached to the bottom that protected the lime from the elements. (The sheds were similar to wooden-roofed "casting sheds" built around iron furnaces.) There are visible markings in the stone where the timbers of the sheds once touched the stone kiln wall. The vintage photograph does not show any sheds attached to either of the other kilns.

The top of the kilns can still be reached from the original roadbed shown on G. M. Hopkins' 1877 *Atlas of Baltimore County, Maryland*, and also depicted on a plat made in 1922. This road was used by the kiln operators to haul the lime by wagon across Minebank Run,



– photograph by John McGrain, October 2003

The Merrick Log House, named for the late Robert G. Merrick who owned the land before formation of Cromwell Valley Park, was probably the dwelling of the lime kiln superintendent or of some of the employed lime burners.

alongside the Long Island estate, to be loaded onto Baltimore and Delta Railroad cars across the valley.

The limestone used at this operation came from a quarry approximately 500 feet northeast of the kilns. An 1898 Maryland Geological Survey map showed the Minebank streambed area as a long corridor of marble surrounded on either side by deposits of gneiss.[15] The quarry pit, measuring approximately 250 by 200 feet and about 40 feet deep, is now overgrown with trees.

The Merrick Log Cabin rests against the same hillside as the three kilns. There are stone walls behind the house bracing the hillside. County Historian John McGrain described the building in a 1986 Maryland Historical Trust form:

> The Merrick Log House is a substantial squared-log structure of two stories with a frame and clapboard wing and a small one-story room that seems to be a filled-in porch. No two-story log houses were shown in the 1798 tax list for any of the owners of Lime Kiln Bottom property. The log portion has a massive stone chimney, suggesting a house dependent on fireplace heating, while the two-story frame wing has a slender brick inside-end chimney suggesting the mid-century method of heating by stoves. There are no tax records specific enough to suggest a date for this house. Log houses were built into the 1860s as a county newspaper advertisement demonstrated. The link between the log tenant house and the nearby lime kiln suggests that a residence for the kiln manager would have been needed by at least 1860 when the lime business was going strong with the adjoining neighbors in partnership. The rear wall of the log portion is close to the steep hillside into which the kilns were built. The rear wall is blank, where a window would have provided no views. The builders used logs from crooked trees on the back façade where they would not show. . . . The house looks out into the pastures of Cromwell Valley Park and onto the Long Island or Jenifer estate.

The cabin has been boarded up and uninhabited since 1994, susceptible to vandalism and fire. Although all the exterior materials are still intact, the German-board siding and trim is deteriorating from water damage, and some of the logs are checking. The logs have "V" notches, which has been the only type of notching found to date in Baltimore County.[16] It is not clear whether these logs had ever been clad in vertical boards or siding. It is clear that the chinking and daubing contains Portland cement, which is historically inaccurate and causes long-term damage to the logs and the structural integrity of the building. The property should be more attentively conserved until it is put back into a suitable use.

NOTES:

1. Bayly Ellen Marks, "The Tax Assessor's Portrait of a County," *History Trails*, 30 (Autumn-Winter 1995-1996): 1-3.
2. John McGrain, "Original Land Surveys Near Hampton & Cromwell Valley Redrawn from Dr. Tracey's Plat," 1993.
3. John McGrain, "Long Island," Maryland Historical Trust Inventory Form, MHT Site No. BA 102, March 1986.
4. Neil Brooks and Eric Rockel, *A History of Baltimore County* (Towson, Maryland: Friends of the Towson Library, Inc., 1978), p. 133.
5. Baltimore County Deeds, Liber TK 245:544, Maryland State Archives, Annapolis.
6. John McGrain "Cromwell Valley Historic Background," p. 8.
7. Brooks and Rockel, p. 206.
8. U. S. Census of Manufactures, Maryland, 1860.
9. U. S. Census, Maryland, 1860.
10. Slave Schedules, U.S. Census, 1860.
11. Harry Wright Newman, "The Risteau Family of Baltimore County," December 1979. Typescript genealogy compiled for Mrs. Elizabeth Mitchell Schmick—Jenifer Collection.
12. W. Jeff Shanklin, stock certificate, May 24, 1882—Shanklin collection.
13. Baltimore County Tax Ledger, District 9, 1896, n. p.
14. *Maryland Geological Survey* (Baltimore, Maryland: Johns Hopkins Press, 1929), p. 29.
15. Maryland Geological Survey, *Report on the Highways of Maryland* (Baltimore, Maryland: Johns Hopkins University Press, 1899), Volume III, Plate XXI.
16. Ruth B. Mascari, "Log Houses—Myths and Reality," *History Trails*, 23 (Summer 1989), p. 12.