

The Gettysburg AR Experience app from the American Battlefield Trust lets users interact with historic events, including battle action and cemetery dedication, digitally

Mary Koik, American Battlefield Trust
November 17, 2020

(Gettysburg, Pa.) – Millions of visitors to the [Gettysburg Battlefield](#) over the past 157 years have sought to imagine exactly what the terrible struggle that unfolded there in 1863 would have looked to eyewitnesses. Now, a new augmented reality effort, the [Gettysburg AR Experience](#) from the American Battlefield Trust — the first such treatment for the Gettysburg Battlefield — digitally inserts animated versions of historical events into the user’s environment. This means that a digital Lincoln can deliver his [Gettysburg Address](#) from the comfort of your living room or that any local park can bear witness to the agony of the wounded in the battle’s aftermath.



“The American Battlefield Trust is committed to finding ways for 21st century innovations to breathe life into events and personalities from the 18th and 19th centuries,” said organization president David Duncan. “A decade ago, we pioneered this unique type of place-based education with our first [Battle](#)

[App](#)® guides, and now we are pushing the envelope again with augmented reality.”

The Trust is the nation’s premier battlefield land preservation organization, setting aside more than 53,000 acres associated with the American Revolution, the War of 1812 and the Civil War since 1987. But more than a land conservation entity, it has become an education and interpretation powerhouse, welcoming millions of students to enjoy its content and providing direct support to many thousands of [classroom teachers](#) in 2020 alone.

From decades spent leading tours of Gettysburg and other important sites, the Trust’s chief historian, Garry Adelman, knows what will spark the imagination of visitors. “What you need to do as a battlefield guide is to drag the past forward,” he said. “We know that technology provides all sorts of windows to allow enlivening of the senses so you can get a little closer to the past. And the [Gettysburg AR Experience](#) is one of the closest things to time travel I have yet encountered.”

That level of immersion stems from cutting-edge technology brought to bear by Trust partners Lumina Datamatics, an international firm with American headquarters in Norwell, Mass., and Interactive Knowledge, a frequent Trust development partner based in Charlotte, N.C. Lumina Datamatics produced the app’s audio and visual renderings — 3D animations and interactive objects and characters, while Interactive Knowledge built the app, which works for both iOS and Android systems and is structured to expand with additional interactive scenes in the months to come.

“From the outset, we were excited by the way that this project marries high-quality educational content and the engaging use of technology,” said Kurt Jordan, Director of Account Development, at Lumina Datamatics. “We are proud to have been part of this exciting process

and hope that it shows meaningful applications for this type of work.” Tim Songer, President, of Interactive Knowledge agreed, adding, “It was great to be part of such a dynamic team for this first-of-its-kind product. The opportunities for further growth in this app are tremendous and have the potential to revolutionize the way that people experience historic sites.”

The release of the *Gettysburg AR Experience* coincides with one of the included scenes — President Abraham Lincoln delivering the Gettysburg Address during the dedication of the Soldiers’ National Cemetery. This initial package is designed for use anywhere, letting the 16th president offer his eloquent words in schoolyards and backyards. But functionalities set for release next spring will offer an enhanced experience for those who bring the app to Gettysburg in person, as a mobile device scans the land and virtually places people and things from the past in their precise geographic setting; history right there, where it all happened. Standing near the Angle where Pickett’s Charge reached its climax, for example, users will not only see the staggering scale of that assault, but be prompted to interact with Lt. Alonzo Cushing still commanding his cannons despite a mortal abdominal wound.

“We see augmented reality as an integral part of future battlefield visitation — and in-depth learning anywhere,” said Trust Chief Digital officer Lawrence Swiader. “Students are the biggest consumers of content on the Trust’s website and we believe that functionalities like augmented reality will draw their attention to the battlefields by making the past seem more tangible. Families who visit Gettysburg now have a new and dynamic way to experience the battlefield together.”

The scenes depicted in the *Gettysburg AR Experience* were chosen to both emphasize dramatic moments in the battle and to illustrate

important truths that aid in the understanding of history. When 69-year-old War of 1812 veteran John Burns took up his gun to fight alongside the Iron Brigade on July 1, 1863, it was because of the grim reality that the war had come to his backyard. And when the smoke of battle cleared, every house became a hospital and many citizens became nurses, perhaps tending to the wounded from both sides, as seen at the Hummelbaugh farm.



That multifaceted approach to teaching history appealed to officials at the HTR Foundation, the Trust’s most indispensably generous supporter over the last 30 years, which provided a generous grant to help finance this groundbreaking project. Additional funds were provided by Trust members via a digital-only appeal for contributions that swiftly met its \$50,000 goal.

“Our founder, A. Copeland Hill, clearly understood that history had the power to capture the imagination and make Americans feel powerfully connected to those who came before them,” said HTR Board President Jeffery McClanathan. “If technology like augmented reality had been available in his lifetime, he would have immediately embraced its potential and so we are proud to do so in his name.”

The Trust is no stranger to pioneering the use of technology to improve history education, especially on-site interpretation of battlefields. To date, it has released a total of 23 apps designed to help battlefield visitors maximize their opportunities on site by integrating expert audio and video content as well as on-board GPS-enabled maps. Last autumn, the Trust launched Civil War 1864: A Virtual Reality Experience an award-winning immersive video that places viewers at the center of four period scenarios. Whereas virtual reality places modern audiences into a generated environment, augmented reality places digital elements onto the physical landscape.

The Gettysburg AR Experience is now available for free download on both iOS and Android devices.

The American Battlefield Trust is dedicated to preserving America's hallowed battlegrounds and educating the public about what happened there and why it matters today. The nonprofit, nonpartisan organization has protected more than 53,000 acres associated with the Revolutionary War, War of 1812, and Civil War. Learn more at www.battlefields.org.

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How a Dentist Developed a Clever, but Flawed, System for Discharging Firearms



HistoryNet Archives *Dana B. Shoaf*
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In the decades leading up to the Civil War, Minié balls and rifling began to replace round balls and smoothbore barrels in U.S. Army arsenals. Percussion caps had come into use on Model 1842 smoothbore muskets, but it was hoped an even more rapid means of ignition could be developed. A temporary solution to that problem came from an unorthodox source, a New York dentist named Edward Maynard, who had dropped out of West Point due to ill health. In 1845, Maynard patented a tape priming system that used a paper roll of caps he described as such: “A strip of paper, either in a moist or dry state is, by means of appropriate instruments and by the application of pressure, forced out into cup forms...the spaces between the cups being sufficient to prevent the communication of fire from one to the other. These cups are filled with the percussion or fulminating mixture, even with the original surface of the strip, it is then coated with a varnish...dissolved in alcohol, and covered with a thin strip of paper, and the whole is then varnished over.” Maynard also invented the spring-loaded system that would feed the caps into firing position. Confused? Think of the caps you loaded in your cap gun, it's about the same thing.

Jefferson Davis, who served as secretary of war from 1853 to 1857, took an interest in Maynard's invention and initially paid him \$1 for every musket made that used a tape primer. In 1854, the government gave the dentist a lump sum of \$50,000 for unlimited use of the system. The washed-out cadet was getting rich, and his system was at the core of the U.S. Army's first percussion rifle musket, the handsome Model 1855, of which 50,000 were made at the Springfield, Mass., and Harpers Ferry, Va., government arsenals. In addition, tape primers were used on

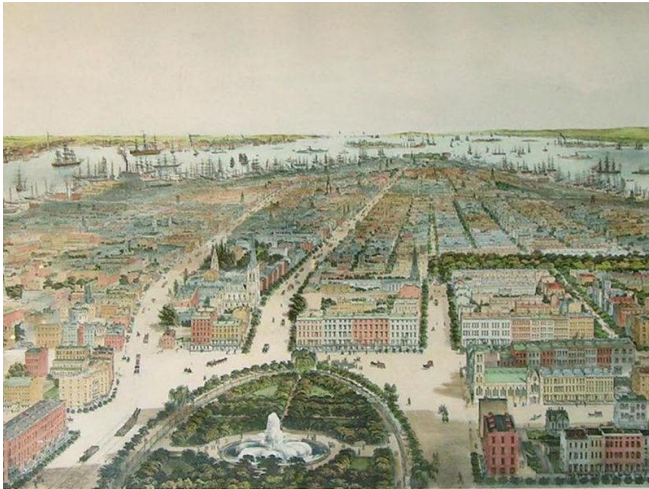
government-made pistols and shorter Model 1855 rifles.

Maynard claimed that the varnish on the paper and the protection of the magazine door would prevent dampness from affecting the primers, but that proved false. The paper strips were also prone to “chain fires,” where the spark from one cap would set off others in the roll. Due to those and other problems, the Maynard primer was abandoned by the U.S. Army in favor of the percussion cap. Model 1855s saw Civil War service using common percussion caps.

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The So-Called ‘Kidnapping Club’ Featured Cops Selling Free Black New Yorkers Into Slavery

**Outright racism met financial opportunity
when men like Isiah Rynders accrued wealth
through legal, but nefarious, means**



In the years before the Civil War, New York police officers sold free Black Americans into enslavement. (Courtesy of Wikicommons)

By Jonathan Daniel Wells,
SMITHSONIANMAG.COM

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This year’s clashes between protestors and the police from Portland to Atlanta to Kenosha are the latest flashpoints in the long history of policing in America. While the police today emerged from a hodge-podge of national and international iterations, one of the United States’ earliest and most storied forces, the New York City police, offers modern Americans a lesson in the intractability of problems between the black community and the officers sworn to uphold the law. That long history is both bleak and demoralizing. But this past also reminds us that real change will only happen by learning from the collective American experience, one in which those who supported systems of oppression were met by others who bravely battled against them.

As the nation’s most populous city for most of its history, New York has been uniquely affected by this dynamic. In the decades before the Civil War, when Gotham’s police force was becoming regularized and professionalized, Manhattan routinely erupted in riotous violence over the very meaning of equality.

The Kidnapping Club: Wall Street, Slavery, and Resistance on the Eve of the Civil War

In a rapidly changing New York, two forces battled for the city's soul: the pro-slavery New Yorkers who kept the illegal slave trade alive and well, and the abolitionists fighting for freedom.

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No one individual embodied the brawling roughness of New York policing like Captain Isiah Rynders of the U.S. Marshals. Born in 1804 in the Hudson River town of Waterford, New York, Rynders was a gambler on Mississippi River steamboats. He reportedly killed a man after a card game and fled to his home state around 1837. Known for his thunderous voice, a powerful memory, and a penchant for histrionics, Rynders made an immediate impact on New York City. Black New Yorkers became his main target, and for decades, he patrolled the streets looking for runaways who had escaped enslavement in the South and who, against tremendous odds, had found freedom in Manhattan.

The Constitution's Fugitive Slave Clause required northern free cities like New York to return the self-emancipated to their southern enslavers, and the NYPD and officers like Rynders were only too willing to comply, conveniently folding their hatred of black people into their reverence for the nation's founding document. Armed with the founders' compromise over slavery, Rynders and his fellow officers, men like Tobias Boudinot and Daniel D. Nash, terrorized New York's black

community from the 1830s up through the Civil War.

And, even worse, it often mattered little whether a black person was born free in New York or had in fact escaped bondage; the police, reinforced by judges like the notorious city recorder Richard Riker, sent the accused to southern plantations with little concern and often even less evidence.

Thanks to Rynders, Boudinot, and Nash, the New York police department had become an extension of the powerful reach of southern slavery, and each month—and often each week in the summer months—brought news of another kidnapping or capture of a supposed runaway. Black New Yorker John Thomas, for example, was claimed by an enslaver from Louisville, Kentucky. Thomas purportedly fled slavery along the Ohio River, then travelled through Canada, and ultimately found a job as a porter in a Manhattan hotel. In late 1860, Thomas was arrested as a fugitive by the Manhattan police. While in prison, Thomas hastily drafted a note, dropped it out his cell window, and asked a passing boy to give the note to his employer, who submitted a writ of *habeas corpus*.

Unfortunately, the marshal on duty was none other than Rynders, who produced a different black man in response to the writ, and the judge declared the writ satisfied. In the meantime, Thomas' employer and friends learned, too late, that one of Rynders' deputies had taken the real

John Thomas to Richmond, where he would be transported to Kentucky, lost in the darkness of American slavery, like untold numbers of other kidnapping victims.

Fortunately, New York's black community was not without heroic defenders like David Ruggles, the tireless activist and journalist. Ruggles led the city's antislavery community while the likes of Rynders, Riker, Boudinot and Nash, a group so wicked that Ruggles had labeled them "the kidnapping club," patrolled the streets and docks in search of their next prey. Joined by activists like Horace Dresser, Arthur Tappan, Charles B. Ray and other antislavery protestors, Ruggles fought relentlessly against those officers and marshals who threatened black liberty. Just as modern protestors decry the role of the police in the quest for order, black and white activists in pre-Civil War New York claimed that the force was little more than a vigilante expression of the worst tendencies of white residents. A more professionalized police force, however, did not mean one more suited to the protection of black civil rights. On the contrary, in the early 1800s, the police proved sadly and persistently indifferent to the black lives they were supposed to protect.

By modern standards, the early NYPD was a ragtag band of barely organized and only partially trained officers. The daytime police remained inadequate to deal with the robberies, violence, prostitution, gambling and other crimes of a city approaching 300,000 people in the 1830s. Only 16 constables, elected by

citizens of each ward, along with about 60 marshals appointed by the mayor, patrolled the city. Only constables and marshals had the power to arrest under a magistrate's orders. Armed with warrants issued by Riker, marshals like Rynders could terrorize Gotham's black residents, who came to fear the police presence in their neighborhoods.

Part of the fear emanated from the fact that Rynders' confederates Boudinot and Nash did not wear uniforms or carry any kind of badge signifying their authority. The familiar dark blue uniforms of the NYPD were not instituted until the 1850s, so African Americans harassed or arrested by the police could not even be sure that they were being accosted by legal authorities. Equally problematic was the fact that neither Nash nor Boudinot earned regular salaries on which they could depend; their ability to support themselves and their families came from fees set by state law, which virtually required officials to arrest as many people as possible. The situation almost guaranteed corruption, and tied the financial interests of the New York police force to the financial interests of southern slaveowners. Not that they needed any push to over-police the black community, but patrollers like Nash and Boudinot had every incentive to use their blanket writ to arrest as many accused fugitive slaves as they possibly could. In fact, their financial well-being depended on it.

Boudinot and Nash operated almost like independent agents in a police force that was

itself in disarray, an institutional chaos that only rendered Black lives even more vulnerable. Fernando Wood, elected mayor in 1854, controlled the police department and relied heavily on Irish immigrants to man the force. But by the 1850s, anti-Irish politicians were trying to establish a new police force, soon to be called the Metropolitans, that would replace Wood's Municipals. A clash erupted in 1857 when Wood refused to back down, and for months, the city actually had two competing police departments who battled each other as much as they combatted crime.

Both Wood's Municipals and the state's Metropolitans were guilty of malfeasance and dereliction of duty. In fact, the Municipals, led by police chief George Matsell, had been called "slave catchers" by the city's black community and its allies in the Republican press. Matsell, a member of the NYPD since 1840, himself was suspected of corruption, and rumors spread that he extorted money from criminals, seized stolen property for his own use, and skimmed the profits of illegal activities. By the time the Municipals and Metropolitans vied for control of the New York police, Matsell had managed to build a sprawling summer mansion within a vast vineyard in Iowa, where local landmarks still bear his name. New York politician Mike Walsh labeled the heavy-set Matsell a "walking mass of moral and physical putrefaction."

The crisis between the Municipals and the Metropolitans was only resolved when Wood and the Municipals finally backed down and the

Metropolitans emerged as the city's permanent and only official police force. Yet, the new police force proved no more respectful of black lives. Boudinot became a captain in one of the city's main wards and Rynders became a Democratic elder statesman during and after the war. In fact, New York City, always ready to defend the cotton trade with the South, voted against Lincoln in 1860 and harbored racial conservatives like Wood during the war and after. Embodied by newspapers like *The New York Weekly Caucasian*, one of the nation's most prominent promulgators of white supremacist ideology, the city remained an unfriendly place for African Americans.

One hundred and fifty years later, policing has changed a great deal, particularly in its militarization and organization, but the tensions between the nation's black communities and the police are still very much evident. Black Americans have been fully aware of this history for generations because they have been the objects of so much of the violent quest for law and order. Although many people might assume that Riker's Island was named after the city recorder, it appears that the name originates less from an individual and more from Manhattan's general Dutch heritage. But though their origins may be different, both the prison and the city recorder share a similar past of neglecting the plight and suffering the New York's most vulnerable residents.

Now, with some white Americans learning the fraught history of policing for the first time,

have they come to realize that the last moments and utterances of Eric Garner, George Floyd, Breonna Taylor and untold others are but modern expressions of a deep and deadly struggle that stretches back to America's earliest beginnings.

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Reenactments Were a Thing Even During the Civil War

These 'practice battles' are the root of today's Civil War reenactors



Civil War reenactors fire a salute in a public parade. (Wikimedia Commons)

By Kat Eschner, SMITHSONIANMAG.COM
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Thousands of people participate in Civil War reenactments each year in the United States. They're sharing a tradition of reenactment that stretches back to the years of the war itself.

To herald Christmas 1861, a year when more than 4,000 fighting men had been killed in Civil War battles and the Union was in disarray, groups of citizens got together to fight mock

battles simulating the conflicts raging on battlefields elsewhere. Writes Sue Eisenfeld for *The New York Times*, "We tend to think of Civil War reenactment as a modern phenomenon, a way for people in the 20th and 21st centuries to experience a taste of what the conflict was like. But in fact, staged battles began while the war was still underway. Known as 'sham battles,' 'mock battles' or 'mimic battles,' these battles were enacted for a variety of reasons: entertainment, practice and to demonstrate to civilians back home what happened during the war."

Shams were especially popular during the holidays for entertainment, and they were mostly confined to the North. On December 5, 1861, the *Daily Nashville Patriot* published an article noting "the Yankees are great on shams," she writes. But they were also intended to accustom new soldiers to the pace of the battlefield and help them imagine themselves as fighters, rather than farmers, she writes: "Some places, like Forst Monroe, a Union outpost in Virginia, conducted sham battles daily."

As the *New Georgia Encyclopedia* records, Civil War reenacting was part of a longer tradition of shams fought with blank ammunition by American militias. Before the Civil War, town festivals often featured a pageant with costumed citizens dressing as Revolutionary War figures.

Directly after the war ended, Eisenfeld writes, veterans were commissioned to serve as

reenactors of a conflict they themselves had fought in. "On April 21, 1865, the town of Massillon, Ohio, was right back into the business of luring crowds with sham battles as part of a day-long 'jubilation over the recent victory of the Federal armies and the surrender of Lee.'" The pageantry and drama of mock warfare offered great entertainment, even when the consequences of the real thing were so bloody.

Later, when public interest in the war revived in the 1880s, the tradition of the sham battle was revived, and many sham battles were conducted purely as entertainment, the *Encyclopedia* writes. "Although these sham battles were usually not attempts to re-create specific Civil War battles, they were conducted with strong undertones of both sectional pride and national unity."

The idea of reenacting stuck around, but modern Civil War reenactment was truly born in the early 1960s around the time of the war's centennial. The first big reenactment, of the First Battle of Bull Run, also known as First Manassas, took place on July 21-22, 1961.

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Exploring Gettysburg Through the Eyes of its Black Citizens



The small stone home owned by free African American blacksmith James Warfield, seen at the right of this painting, is being restored by the National Park Service to match its wartime appearance. NPS Photo

Scott Hartwig. HistoryNet
November 2020

Basil Biggs, James Warfield, and Abraham Brian (also spelled Bryan and Brien) were farmers on what would become the Gettysburg battlefield. Warfield also ran a highly regarded blacksmith shop, and Biggs was well known for his veterinary skills. What set them apart from neighbors such as Joseph Sherfy and William Bliss was that they were Black. It is notable that 5.1 percent of the residents of Cumberland Township, in which these three families lived, were African American. Their stories provide some understanding of the unique experience of Gettysburg's Black residents and the Gettysburg Campaign that uprooted their lives.

The color of their skin made all the difference. There were worries that Biggs and the others dealt with daily that Joseph Sherfy did not have to consider. They were free, but the border with Maryland, a slave state, was only about five miles from Gettysburg. Biggs had moved his family from Maryland specifically because it was illegal for his children to receive an education in that state. Pathways of the

Underground Railroad ran through Gettysburg, and Biggs worked as an agent helping escaped slaves pass through. To do so, he was taking a great risk because of the Fugitive Slave Act, passed in 1850, which required that all escaped slaves be returned to their masters and made it mandatory for officials and citizens of free states to assist in their capture.

Federally authorized slave-catching patrols were not uncommon around Gettysburg before the war. The legislation also gave cover to an illegal business that predated the 1850 act: the kidnapping of African Americans and stealing them away to the Deep South to be sold into slavery, a story highlighted in the 2013 Oscar-winning film *Twelve Years a Slave*. As Richard Bell points out in his book *Stolen*, children were often targets of these individuals because they had many working years before them. Biggs, Warfield, and Brian all had children. Their concern was underscored by the experience of Mag Palm, who rented a tenant house from Brian. She was nearly a victim of one of these raids in 1857, but managed to fight off her kidnappers.



Basil Biggs and his wife pictured on the farm he purchased using the money he earned burying Union soldiers killed during the battle. (NPS)

In the 1857 Dred Scott case, the Supreme Court declared in a 7-2 decision that African Americans were not, and could not be, citizens of the United States. In his majority opinion, Chief Justice Roger B. Taney declared that Blacks were “so far inferior, that they had no rights which the white man was bound to respect; and that the negro might justly and lawfully be reduced to slavery for his benefit.” By Taney’s opinion, Biggs, Warfield, and Brian had no protection under the law because of their skin color. But they could own property in Pennsylvania, and Brian and Warfield both owned their small farms. Biggs was a tenant farmer, as were many of the other Black and White farmers in the area.

When the Army of Northern Virginia entered Pennsylvania in June 1863, White farmers generally took their families and their horses to safety to avoid the danger of possible fighting. But occasionally the men departed with the horses and left the women of the household behind because it was less likely soldiers would enter a residence if it were occupied. This was the case on the Emmanuel Harmon farm on the July 1 battlefield, where the tenant, David Finnefrock, left his wife and her niece at the farm. He did not fear that they might be harmed or seized by the Confederates. The Black residents could take no such chance, for their very freedom was at stake. They had certainly heard that Confederate units were actively rounding up African Americans in adjacent Franklin County on the premise they were escaped slaves and taking them south. So they gathered their families and generally headed east to get out of the Confederates’ path.

The Battle of Gettysburg took a toll on each of these individuals' lives. The farm Biggs rented was used as a field hospital for Confederate Maj. Gen. Lafayette McLaws' Division. The dining room of the house became an amputation room. All his corn, oats, wheat, and fencing were destroyed. Warfield was ruined. His farm was on the front line and the site of heavy fighting. All his blacksmithing tools were taken, his crops and fencing wrecked, and he found 14 Confederates buried in his garden. Brian, whose farm was on the front line of Union Brig. Gen. Alexander Hays' 2nd Corps division, lost nearly everything but his house and barn, which were riddled with bullets and shell fragments. Since most of the damage each of these families sustained was caused by an act of war, there was little relief for them from the federal or state government.

Warfield did not recover. He put his farm up for sale in 1864 but failed to sell it and was forced to remain there until 1871, when he moved to nearby Cashtown. Brian was able to repair his property and farmed it until 1869, when at age 62 he found less physically demanding work in Gettysburg. Biggs not only recovered, he prospered. In the fall, he found work as a subcontractor for Samuel Weaver, the superintendent in charge of efforts to exhume the bodies of Union soldiers and rebury them in the newly created Soldiers National Cemetery. Biggs hired a crew of 8–10 other African American men and did the hard, physical work of removing the dead from their battlefield graves.

No work associated with the battle was more solemn...or more nauseating. Weaver examined each body to ensure that it was a Union soldier, then Biggs and his crew reinterred the body in the cemetery. Biggs received \$1.25 for each body and used the

money he earned to purchase the Peter Fry Farm on the Taneytown Road. The property included the Copse of Trees, where Pickett's Charge reached its terrible climax on July 3. One day in 1869, historian John Bachelder came upon Biggs cutting trees down, no doubt for some practical need. Bachelder appealed to Biggs to stop, arguing that the trees had historical value, but this failed to stir the pragmatic farmer. So Bachelder suggested that Biggs might earn more in the future by preserving the trees than he could by cutting them down. In the hard, practical world in which Basil Biggs lived, there was logic in Bachelder's suggestion, and he saved the trees and later sold the property that included them to Gettysburg Battlefield Memorial Association.

Biggs, Warfield, Brian, and their families and those of other African Americans who lived in and around Gettysburg, inhabited a world where their country stacked the deck against them because of their skin color. For them the Gettysburg Campaign, and the war, was about more than a threat to their homes and property. Everything was at stake in the outcome, including their right to be citizens.

Scott Hartwig writes from the crossroads of Gettysburg.

National Park Service preservationists are restoring the Warfield farmhouse, built in the mid-1850s, to its 1863 appearance. Additions and modifications to the stone house were made at the turn of the century and in the 1950s and '60s. The NPS has removed the non-historic part of the home and restored the original roofline and roof height; stabilized and reconstructed masonry walls; and are restoring original doors and windows. More details about the project can be found at <https://www.nps.gov/gett/learn/historyculture/warfield-house.htm>.