

The CHARGER

Cleveland Civil War Roundtable



Nov. 2020

Vol. 44 #3

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PRESIDENT'S MESSAGE FOR NOVEMBER

I hope you are as excited about our November speaker as I am. We are hosting U.S. Grant himself – as interpreted by Dr. Curt Fields. If you check out our website [clevelandcivilwarroundtable.com], you will be able to see the details of Dr. Fields impressive background and accomplishments. I can tell you from my conversations with him, that his talk on “The Petersburg Conundrum” will offer interesting insights into this campaign. The program will be conducted via Zoom so be on the look out for a Zoom invitation a day or two before November 11 when the session will start at 7 p.m. We will continue to use both Dan Zeiser and his email address book along with the clecwr@gmail.com account to send invitations and information to our membership.

Also, if you know a member who might need some help with the internet, think about lending a hand or letting us know if we could help them get on board.

Speaking of members, our Treasurer Bob Pence just informed the Executive Committee that we now have 64 dues paying members! It is our dues that fund our speakers and programs so if you haven't sent your dues yet, Bob will be glad to process your membership for this year if you send \$60 [check payable to Cleveland CWRT] to him at: Bob Pence, CWRT, 1419 Honeygold Lane. Broadview Heights, Ohio 44147.

Because of the pandemic, it looks like we will be relying on the internet to stay in touch and host our speakers for the foreseeable future – at least through 2020 and perhaps beyond. Because of that, I was very encouraged by an Executive Committee meeting last week where we established a new standing committee – Website and social media. The committee is chaired by VP Mark Porter with

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Secretary Lily Korte assuming responsibility for daily management of the website along with our Twitter and Facebook accounts. I am glad to report that Paul Burkholder, who has done sterling work over two decades with the website, remains an active part of the committee. Also, our past Historian and active in all things Round Table, Dave Carrino, who has been helping with the website since summer, will also continue to make contributions to the committee. Dave has been working to transfer articles from the old site to the new one. Andrew Mangels, one of our newest members, will be helping on the committee as we explore other options to use the internet. He has been helping me manage our Zoom meetings and if you noticed things were a lot smoother during the October meeting it was due to Andrew's help. Lily and Andrew are Librarians and experts in information management by trade, and I am hoping they can help make the treasure trove of our archives more accessible. According to Paul, we have had several thousand people a month who use our website apparently to access information in all of those articles.

AMAZON ALERT – with holidays approaching, remember that you can access AMAZON through the links on our website [probably the book reviews are the easiest]. If you do, whatever you buy, books or band aids, your CWRT will get a percentage of the proceeds. I had my wife do a test and she popped right into her Amazon Prime Account and was ready to spend [just a little humor Lynn].

History Briefs – Dan Ursu is continuing to write his wonderful series on US Grant and his campaign to take Vicksburg. We will continue to share Dan's History Briefs via email and also repost them on the website.

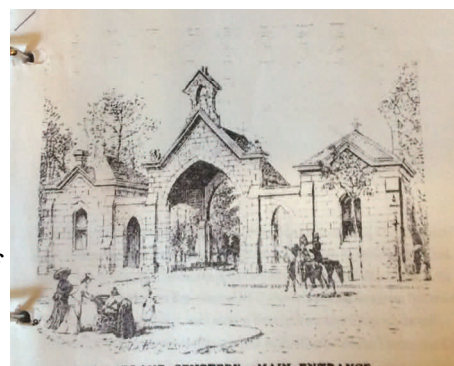
Articles – The Charger, which you are reading, is a prime place for those of you who want to publish an article. We can also place them on the website or on Facebook. We are working on some policies on how this can work. In the meantime, we have a response from Dave Carrino regarding our last speaker's topic, Frederick Douglass on R. E. Lee, and Brian Kowell has written about the river ironclads that made Grant's Vicksburg campaign possible. So sharpen your pencils, fill your ink pen, or plug in your laptop and send us your thoughts on your favorite Civil War subject.

Last but not least, we rescheduled the Fall Field Trip to the spring of 2021 so it will be our first spring field trip. We still have a dozen members signed up to visit Petersburg April 29-May 2, 2021. We will start taking new reservations after the first of the year.

Steve Pettyjohn, President

The Gatehouse at Woodland Cemetery **By Paul Siedel**

It is with great pride and much enthusiasm that The Woodland Cemetery Foundation and the City of Cleveland announce the completion of the reconstruction of the gatehouse at Woodland Cemetery.



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The project was an eighteen month undertaking and every bit of that time was necessary. The architect was Kevin Robinette Architect, LLC.; the stone masons were McMahon Masonary Restoration, and the project supervisor was Mr. David Pickwick, Project Superintendent for Sona Construction. The cost was \$1.7M and came in on budget.

In March 2019, Sona Construction began to excavate the site and discovered that the old basements from the previous gate had been filled in with debris, which in all fairness to the City, is not permitted anymore. Much time and effort was taken to clean out the old cellars so work could begin. The old superstructure, which was taken down in winter 1994-1995, was not demolished, but was disassembled and the huge blocks of sandstone were stored near the center of the cemetery behind Section 72. The stones were numbered and matched to drawings, stored on pallets, labeled and photographed and wrapped in bubble wrap. Over the past 25 years many stones were pilfered for use in building projects and other undertakings, so the project manager had to find another source of sandstone which was no small challenge. Gradually the new structure went up along Woodland Ave. Concrete was poured for the new foundations; a concrete block superstructure was erected, and the old sandstone was put up around it. The extensive fiberglass trim was completed by Architectural Fiberglass Inc., a local firm located at 8300 Bessemer Ave. Underground lighting was installed and reflects nicely on the gate at night as a drive down Woodland Ave. during the evening hours will highlight. A new waterline was installed so folks can now water the plants and shrubs that surround the graves of loved ones. We take particular pride in the new fencing that was put up along Woodland Ave. some of which is original.

Woodland Cemetery was first laid out in 1851 on land purchased by the City from a group of investors in Massachusetts. The first burial took place on June 23, 1853 and the elaborate gatehouse was finished in 1870 during the administration of U.S. Grant. It was interesting to learn that one of those investors from Massachusetts was Mr. Benjamin Butler future Union General. The lawyer who put the whole deal together was a Mr. Trowbridge whose name today graces Trowbridge Ave. in the Tremont neighborhood. At that time East 55 St. was the eastern boundary of Cleveland, and public transportation only went to the Cemetery after the Civil War. Later a pavilion, two water fountains, and a chapel were added along with a fountain and shrubbery. All of which have since have been taken down. Each Decoration Day (as they used to call it) was highlighted by parades and speeches which went out Woodland Ave. Today Woodland Cemetery is the largest Civil War site in Northeast Ohio.



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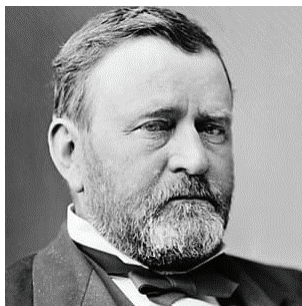
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Such personages as John Brough, Ruben Wood (after whom Wood County is named), Civil War mayor of Cleveland Senator and one of the largest U.S.C.T. burial sections in the country are located here. Approximately 1,450 Civil War Vets are interred here, and the Cemetery has four sections reserved for veterans of all wars. As one enters the gate on Woodland Ave. and walks north through the cemetery, one of the first monuments they will come to is the monument to the 7th Ohio Infantry, and right across the driveway is the monument to the 23rd Ohio. This memorial was erected in August 1865 and was the first Civil War Regimental Monument erected in any cemetery after the Civil War; it is dedicated to those who were killed in battle or died of disease.



We at The Woodland Cemetery Foundation are justly proud of the new gatehouse and the improvements made at this historic cemetery. After COVID we plan to hold a “Celebrate the Gate” festival honoring everyone who helped bring this dream to reality. Please feel free to drive by the entrance on Woodland Ave. or drive through the Cemetery by entering on Quincy Ave. and admire this beautiful setting. The Forgotten Triangle is not longer forgotten, and we look forward to seeing everyone once COVID is just a memory.



Grant's Presidency

By

Dennis Keating

It's been a November presidential election year month. Controversies surrounding the election rivalled the election of 1876 that resulted in the disputed election of Rutherford Hayes, the Ohio Republican Governor and Civil War veteran. It ended the presidency of U.S. Grant and Reconstruction in the South as part of the deal that gave Hayes the presidency.

It's a good time to look back at Grant's two-term presidency. For a long time, Grant's presidency was seen as a failure, characterized by corruption and scandals that reached his inner circle. In 2000, a C-Span poll of presidents ranked Grant 33 out of 41. However, by 2018, a survey of scholars by the American Association of Political Scientists saw Grant rise to 21st in their presidential rankings. Why the positive change? Grant's policies regarding Reconstruction and the protection of the freed slaves, his Indian Peace Policy, and his support for civil service reform have been seen in a more favorable light.

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Following Lincoln's assassination and Andrew Johnson's disastrous Reconstruction policies (opposed by Grant), Grant's nomination as the Republican candidate in the 1868 election was not in doubt. Grant's reaction was:

"I did not want the presidency, and have never quite forgiven myself for resigning the command of the army to accept it but it could not be helped. I owed my honors and opportunities to the Republican party, and if my name could aid it I was bound to accept". (Chernow, 616)

Grant easily defeated Horatio Seymour, the wartime governor of New York and a Copperhead, whose running mate Francis Preston Blair, Jr. was a rank racist. Grant's Vice-Presidential candidate was Schuyler Colfax, the Speaker of the House from Indiana, who had championed passage of the Thirteenth Amendment. Grant defeated Seymour in the Electoral College by a margin of 214 to 80. Johnson refused to join Grant for his inauguration.

Grant's first term was marked positively by the passage of the Fifteenth Amendment and Grant's attempted Indian Peace Policy aimed at rooting out corruption in settling Indians on protected reservation. Grant also approved amnesty for most Confederate officials although Congress did not approve that for Robert E. Lee (who visited President Grant once – in May 1869 – before his death). He also resolved the Alabama war damage claims against Great Britain.

More troubling were:

- The failed 1869 attempt by Jay Gould and Jim Fiske to manipulate the price of gold, which Grant's administration foiled on "Black Friday" (September 24, 1869)
- The emergence of Southern resistance to Reconstruction marked by the rise of the Ku Klux Klan which led to Grant's passage of the KKK Act of 1871 and his use of the Army to put down the Klan's anti-Black violence;
- His failed attempt to annex Santo Domingo (led by his close aide and Civil War general Orville Babcock);
- Despite his attempt to support Civil Service reform in the face of the "Spoils System", its leading advocate Ohioan Jacob Cox, the Interior Secretary and Civil War general, resigned in October 1870 in protest at Grant's failure. New York Senator Roscoe Conkling was able to get his protégé Chester Arthur named the New York Customs collector, the most desirable federal patronage position.

Despite naming his wartime aide and Native American Ely Parker Commissioner of Indian Affairs, the corrupt Indian Ring continued to defraud the government and Parker resigned in July 1871. The scandal would become public in 1875 and Grant's Secretary of War and Civil War general William Belknap and his wife were implicated, and he was forced to resign but escaped impeachment. His successor was the father of future President William Howard Taft.

Grant's key wartime and presidential aide John Rawlins died on September 6, 1869

With this mixed record, Grant accepted the nomination for a second term. Vice-President Colfax had promised to serve only one term but when Grant decided to run again, he reversed himself but was defeated for renomination by Senator Henry Wilson, a Radical Republican from Massachusetts. Liberal Republicans, led by Carl Schurz,

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reformer critic of Grant and Civil War general, met in Cincinnati in April 1872 and nominated New York newspaper owner/editor Horace Greeley to oppose Grant. In July, the Democrats in an unprecedented move, endorsed Greeley as their candidate too. During the campaign, both Wilson and Colfax were implicated in the Credit Mobilier scandal involving bribery in the construction of the intercontinental railroad, completed in 1869. An interesting development was Suffragette advocate Susan B. Anthony supporting Grant (and who was convicted of illegally trying to vote for Grant). Grant overwhelmingly won and Greeley died three weeks after the election (Grant accompanied Greeley's funeral procession in New York City).

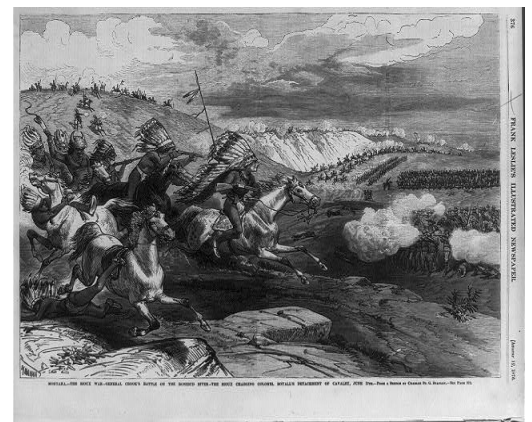
Grant's second term was scarred by more scandals. In 1873, there were White massacres of Blacks in Louisiana and Mississippi, leading Grant to send in more federal troops. Despite Democrats taking control of the House in the 1874 midterm election and opposing Reconstruction, Grant managed to have Congress pass the Civil Rights Act with Vice President Wilson casting the tie-breaking vote in the Senate (Wilson died on November 10, 1875); the U.S. Supreme Court would declare the Act unconstitutional in 1883. Another important death as that of Chief Justice Ohioan Salmon Chase in May 1873. It took Grant five attempts before finally naming Morrison Waite from Toledo, Ohio, as his successor.

More importantly, 1873 with the failure of financier Jay Cooke's firm, the United States saw the beginning of a Depression that would last through Grant's administration and lead to the great railroad strike of 1877 that President Hayes put down with federal troops. Then, in 1875 the Whiskey Ring federal tax evasion scandal (led by Grant friend and Civil War general John McDonald who was an Internal Revenue official) was uncovered and prosecuted by reformer and Treasury Secretary Benjamin Bristow, who would then resign.

Despite these and some other scandals, Grant was not implicated himself although he remained loyal to those like Babcock who betrayed his trust. Chernow wrote:

"As the flush of wartime idealism faded, the Grant presidency ushered in the Gilded Age (see Mark Twain and Charles Dudley Warner, *The Gilded Age*, 1874), marked by a mad scramble for money and producing colossal new fortunes. During the postwar boom, industrial trusts [e.g., John D. Rockefeller's Standard Oil Trust – see Chernow, *Titan*] began to dominate one industry after another, creating growing inequalities of wealth and spawning a backlash from labor unions and the general public". (Chernow, 644)

On May 10, 1876, Grant opened the Centennial exhibition in Philadelphia. It would be marred by the Great Sioux War which began shortly after that when Grant was forced to violate the Black Hills reservation treaty and send the Western Army after those like Sitting Bull who refused to agree to their sale. Generals Sherman and Sheridan supported sending in the army to force Indians on to the reservations. On June 25 George Armstrong Custer (whose 1874 expedition led to the discovery of gold in the Black Hills) and his Seventh Cavalry regiment were defeated at the Battle of Little Bighorn (a reckless action by Custer deplored by Grant) but by the following year the resisting tribes were defeated.



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HISTORY BRIEF – CCWRT –

GRANT'S COMBINED ARMS GENERALSHIP AT VICKSBURG

Please recall last month's History Brief where we left off with the end of Grant's creative winter of 1862-3 efforts to bypass Vicksburg which sputtered out in a haze of impracticability. From the engineering attempts for a proposed trench to reroute the Mississippi River along the neck of a peninsular bend near the fortress city itself and the push for a channel through marshy terrain to ultimately join with the Red River and its tributaries and thence to the Mississippi; and finally a military effort to land troops just north of Vicksburg through the Yazoo River environs; all of which came to naught. But not for lack of effort; Grant recorded in his Memoirs that he was proud of the hard work his troops had undertaken that had at least kept them productive outside the campaigning season. Now Grant huddled with Admiral Porter to devise a daring combined arms effort to achieve his goal of landing his troops on dry ground on the east side of the river below Vicksburg.

Having been born on the Ohio River at Point Pleasant, Ohio and growing up in nearby Georgetown a mere ten miles from the river, Grant had a unique appreciation for the country's water highways useful for moving all manner of goods and materials in mid 1800's America. As such, U.S. Grant acquired in his youth an intuitive ability to make use later in life of the waterborne and naval assets that the largesse of the northern economy made available for commanders that realized the potential. Accordingly, at his very first substantial battle at Belmont Grant used river steamers to land and evacuate his troops - and here he famously followed his men as the last person boarding the escape vessels while slip sliding his horse down a muddy bank and scurrying his mount over a narrow wooden plank to complete an improbable last minute escape of his person

Next, Grant subdued Forts Henry and Donaldson, and aggressively used the substantial firepower of the powerful river ironclads built at various shipbuilding facilities along the Ohio and Mississippi Rivers. At Shiloh, the Tennessee River was used as a supply line by Grant plus afforded the military advantage in the adroit shelling of Confederates by Union gunboats *Tyler* and *Lexington* at a critical stage of the battle late on the first day blunting thus far a Rebel success and demoralizing troops' spirit.

.Now, Admiral Porter told Grant that he believed that with proper preparation, he could "run the guns" of the Vicksburg fortress at night minimizing the effect of the Confederate batteries under partial cover of darkness, and take his river fleet with its ironclads and sufficient supplies on the Mississippi past Vicksburg to ultimately meet Union troops that Grant would march down the west bank. At that point, Porter's vessels could transport the union troops across the Mississippi River to the coveted dry location below Vicksburg where Grant could launch an offensive to capture the city over dry approaches. Of course, "running the guns" came with a huge risk as the fleet could become heavily damaged and lose critical firepower, transport capability and manpower. Further, once south of Vicksburg, in the event that they needed to do so, the ships would not likely be able to steam back up stream past Vicksburg as the strong southerly river current would slow the vessels to such a degree, that the Confederate batteries would be expected to obliterate the fleet.

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Most often, the fighting vessels employed by Grant and Porter at Vicksburg are only briefly mentioned with little detail. So, let's examine them more closely as they would be crucial to Grant's effort - noted below as they were armed at the time of the Vicksburg run and presented corresponding to their positions in the line.

Benton – catamaran “snagboat” converted to an ironclad at James B. Eads Yard, St. Louis Missouri; commissioned February 24, 1862; speed 5 ½ knots; Armament: eight nine inch smoothbores; three 42 pound rifles; three 32 pound rifles; two 100 pounder rifles. *Benton* was lashed to the tug *Ivy* at the head of the van; *Benton* was the most powerfully armed ironclad in the line.

Lafayette - former river steamer converted to ironclad ram at James B. Eads Yard, St. Louis, Missouri; commissioned February 27, 1863; speed 4 knots; Armament two 24 pound howitzers; two twelve pound howitzers; two 11 inch smoothbores; two nine inch smoothbores; two 100 pounder rifles. Lashed to the *General Price*.

Louisville – built as a River casemate ironclad at Carondolet Yard, St. Louis, Missouri; commissioned January 16, 1862; speed 9 knots; Armament: one 8 inch smoothbore; three 9 inch smoothbores; two 42 pound rifles; two 32 pound rifles.

Mound City - built as a River casemate ironclad at Mound City Yard, Mound City, Illinois; commissioned January 16, 1862; speed 9 knots; Armament: three 8 inch smoothbores; two 42 pound rifles; six 32 pound rifles; one twelve pound rifle; one thirty pound rifle; one fifty pound rifle.

Pittsburgh - built as a River casemate ironclad at Carondolet Yard, St. Louis, Missouri; commissioned January 25, 1862; speed 9 knots; Armament: two 8 inch smoothbores; two 9 inch smooth bores; two 32 pound rifles; two 30 pound rifles; one 100 pound rifle.

Carondolet - built as a River casemate ironclad at Carondolet Yard, St. Louis, Missouri; commissioned January 15, 1862; speed 7 knots; Armament: four 8 inch smoothbores; three 9 inch smooth bores; one 42 pound rifle; one 32 pound rifle; one thirty pound rifle; one fifty pound rifle.

Carondolet was followed by three army transports.

Tuscumbia - built as a River casemate ironclad at Joseph Brown Yard, New Albany, Indiana; commissioned March 12, 1863; speed 10 knots; Armament: three 11 inch smoothbores; two nine inch smoothbores. *Tuscumbia* was the final ship in the van.

Louisville, *Mound City*, *Pittsburgh* and *Carondolet* were sister ships of the “City Class” alternately called the “Cairo Class”. They were a novel design of shallow draft ships and the vision of Samuel Pook; they became known as “Pook’s Turtles” and by now were veterans of most of the North’s and Grant’s river related campaigns in the Western Theater. To make all of the vessels in the line less susceptible to the plunging fire of the Confederate batteries on the cliffs above - timber, cotton and additional iron were lashed to their upward decks and surfaces. Sailors would have wet cotton available to stuff holes made by rebel projectiles.

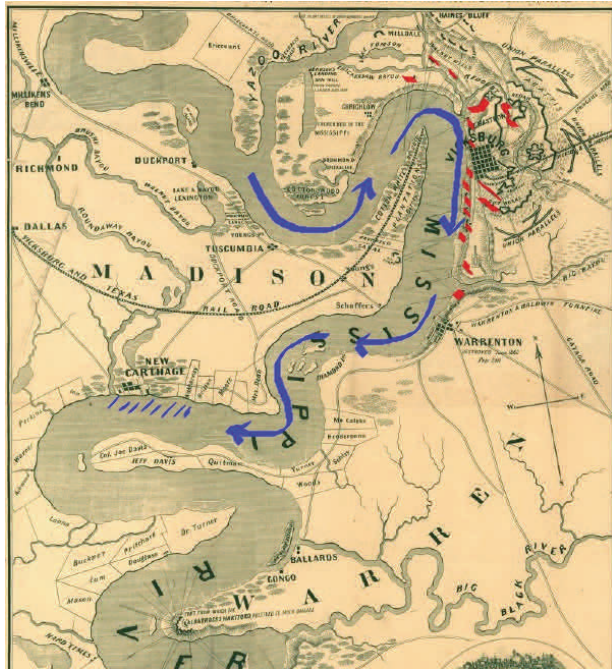
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Running the Guns of Vicksburg - Porter's route

From: http://civilwarsesquicentdaily-wolfshield.blogspot.com/2013/04/april-16-1863_16.html

Confident in Admiral Porter's ability and buoyed by his past combined arms successes, Grant's patience with other potential endeavors to reduce Vicksburg had left him. So, on March 29th 1863 he ordered General McClernand to send his four division corps on the march along the west side of the mighty river and committed the Union to this daring plan.

In his Memoirs, General Sherman indicated his disagreement with running the guns for a variety of reasons and thought it better to go back to Memphis and then proceed down the rail line again in central Tennessee. Bruce Catton in his famous book This Hallowed Ground characterized it in a way that many of Grant's detractors of the time would have phrased it in a somewhat condescending sentence: "It was perhaps the crucial federal military decision of the war; and it was made by a slouchy little man who never managed to look like a great captain, who had a casual unbuttoned air about him and seemed to be nothing much more than a middle aged person who used to be a clerk in a small town harness shop – a man who unexpectedly combined dogged determination with a gambler's daring".

We will learn how Grant's daring plan unfolds and whether the "slouchy little man" transforms into the "indispensable man" in next month's History Brief!

Respectfully submitted,

Daniel J. Ursu

CCWRT Historian, Copyright October 14, 2020

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What do the Masters Golf Tournament and Confederate gunpowder have in common?

by David A. Carrino

One of the most prestigious golf tournaments on the PGA Tour is the Masters Tournament. This tournament, which is held in Augusta, Georgia, typically takes place in the spring, when the dogwoods and azaleas are in bloom. That setting at that time of year provides a beautifully picturesque backdrop for the competition. However, in 2020 the Masters Tournament was postponed until autumn, specifically November 12 to 15. This postponement was due to the nationwide shutdown that occurred in the spring. In recognition of the autumn date for the 2020 Masters Tournament, this article describes the primary contribution of Augusta, Georgia to the Civil War, a contribution that was indispensable for the Confederate war effort. This article was the history brief that was presented at the October 2017 meeting of the Cleveland Civil War Roundtable. The following longer version of the history brief, which has never before appeared in *The Charger*, contains additional information that was not included in the version that was presented at the meeting.

The statement, "An army marches on its stomach," has been attributed to Napoleon Bonaparte, but it may have originated with Frederick the Great. It may even be that this statement, or at least the concept embodied in it, originated much earlier with the Roman physician Claudius Galen. But whoever deserves credit for this anatomically incorrect statement, it is meant to convey that an army must be well provisioned in order to conduct operations. Nevertheless, an army has to do more than just march and eat. Often when an army arrives at its destination, it then has to fight, and to do this it needs more than just food, unless the battles resemble the cafeteria scene from the movie *Animal House*. For the Confederacy, one important ingredient necessary to fight Civil War battles was in perilously short supply early in the war. Fortunately for the secessionist war effort, a resourceful and industrious person who was knowledgeable in chemistry found a way to provide ample amounts of this ingredient, although this person's success worked to the detriment of any Union military personnel who were killed or wounded by projectiles that were propelled by gunpowder.

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The ingredient in question is potassium nitrate, also known as saltpeter or niter, which is an essential ingredient in the production of gunpowder. Early in the Civil War, Confederate President Jefferson Davis, who, having served as Secretary of War, was knowledgeable about such things, reputedly said that the Confederacy had only enough gunpowder for a month of light fighting. Prior to the war, most gunpowder production was in the North, which necessitated that the South now initiate its own production or importation. With the tightening Union blockade restricting importation, production was the more reliable option, but there was a serious issue with this option, namely that most saltpeter mines were in the North. The person who was tasked with solving the problem of gunpowder production for the Confederacy was George Washington Rains. George Rains and his enormously successful efforts at providing gunpowder for the Confederacy are the subject of this history brief. The surname Rains may sound familiar to Civil War enthusiasts, and not because it is the surname of the actor who played Inspector Renault in the movie *Casablanca* or The Invisible Man in the movie of the same name. [This is because George Rains was the younger brother of Gabriel Rains, who, as head of the Confederate Torpedo Bureau, was the person most responsible for providing torpedoes to the Confederacy and who also has been credited with the invention of the land mine.](#) (Gabriel Rains was the subject of the September 2017 history brief, which was in *The Charger* of November 2017.) Because of their contributions to the Confederacy, Gabriel Rains and George Rains were perhaps the most important pair of brothers for the Confederate war effort.

George W. Rains was born in 1817 in North Carolina. In 1842 he graduated third in a class of 56 from the U.S. Military Academy, two places ahead of William Rosecrans and well ahead of John Pope, Abner Doubleday, D.H. Hill, Lafayette McLaws, Earl Van Dorn, and James Longstreet. Rains served in the Mexican-American War and the Seminole War and then taught chemistry at West Point. Rains married Frances Ramsell in 1856, and that same year he left the army to become president of an iron works in Newburgh, New York. When the Civil War broke out, Rains sided with the Confederacy and was commissioned a major in the army. However, his services were of greater benefit to the Confederacy not in combat, but in providing one of the essential ingredients for Civil War combat.



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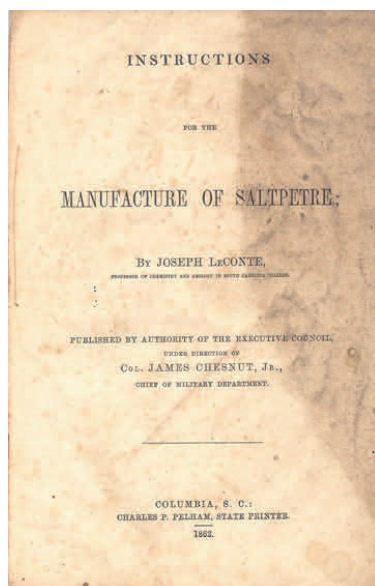


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Josiah Gorgas, a West Point graduate who had served in the Ordnance Department of the U.S. Army, had been appointed to head the Ordnance Department for the Confederate Army. Gorgas described the bleak situation that he faced in April 1861 by stating, "Within the limits of the Confederate States there were no arsenals at which any of the material of war was constructed....All the work of preparation of material had been carried on at the North; not an arm, not a gun, not a gun-carriage, and except during the Mexican War, scarcely a round of ammunition had for fifty years been prepared in the Confederate States....No powder, save perhaps for blasting, had been made in the South; there was no saltpetre in store at any Southern point; it was stored wholly at the North." Gorgas appointed George Rains to address the gunpowder shortage, because Rains possessed the perfect background in chemistry, geology, mineralogy, and iron fabrication to solve the Confederacy's gunpowder shortage. He was also energetic and a skilled administrator, which were qualities that aided him in completing his daunting task.



To make gunpowder Rains needed three ingredients: sulfur, charcoal, and potassium nitrate (that is, saltpeter). Sulfur was in good supply in the South, and the South also had a large supply of wood to make charcoal. The critical component was saltpeter. At that time, one of the most common raw materials for saltpeter production came from limestone caves. This is because nitrate compounds are formed in nature from bacterial action on animal waste, and the highly nitrogenous bat guano that accumulates in caves is a rich source of these nitrate compounds. George Rains left Richmond on July 10, 1861 to search for such sources of material for saltpeter production. Rains later claimed, "I almost lived in railroad cars" as he travelled throughout the South. But his efforts were grandly rewarded, because he and his assistants were able to identify a number of caves in Georgia, Alabama, Tennessee, and Arkansas that could supply large amounts of starting material for saltpeter production. The guano-containing material was mined from the caves, with most of the labor being done by slaves, and was then used to make saltpeter through a multi-step chemical process. One estimate is that 2,500 pounds of guano-containing raw material were needed to produce 100 pounds of saltpeter. Eventually Rains authored a booklet titled *Notes on Making Saltpeter from the Earth of the Caves*, in which he described his process for producing saltpeter, and this pamphlet allowed others in the Confederacy to become skilled in this work.

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To supplement the material from caves, Rains sought additional supplies of saltpeter. He oversaw the procurement of saltpeter from Europe, and a considerable amount of saltpeter was obtained in this way. However, this supply became more precarious as the Union blockade tightened, which increased the importance of the Confederacy's own saltpeter production. In addition to the nitrogenous material mined from caves, other sources of nitrified soil were obtained by scraping dirt from under barns and henhouses. Any dirt that contained waste material was a potential source for producing saltpeter. Another potential if terribly unpleasant source was a centuries-old practice of building so-called nitriaries, which are also known as niter beds. Nitriaries consisted of long trenches into which was dumped any available waste material, such as manure, rotting vegetation, animal carcasses, and even human waste from outhouses, latrines, and chamber pots. Alkaline material, such as wood ashes or pulverized mortar, was added to the organic matter along with dirt, and the mixture was moistened and covered to protect it from the weather. Each week the mixture was to be watered with liquid waste material, such as urine or dung water, and then turned over to a depth of several inches. The process that occurs in nitriaries involves soil bacteria converting the nitrogenous compounds in the waste material into nitrates. Even though nitriaries are nothing more than foul-smelling microbial ecosystems, the plan was for private citizens to construct a nitriary on their property in order to provide the Confederacy's war effort with additional starting material for saltpeter production. In fact, in 1862 South Carolina published a pamphlet in which instructions were given for the preparation of nitriaries. The pamphlet, the text of which is available online (<http://docsouth.unc.edu/imls/lecontesalt/leconte.html>), urged Confederate citizens to build nitriaries "under the noble impulse of patriotism." Because nitriaries require as much as two years to generate saltpeter in reasonable quantities, no saltpeter was harvested from the nitriaries before the Civil War ended. But it is estimated that in time the nitriaries would have provided a large amount of saltpeter. (As an aside, the pamphlet, which was written by Joseph LeConte, a professor of chemistry and geology at South Carolina College, was published under the direction of James Chesnut, Jr., the husband of famous Civil War diarist Mary Chesnut.

Having established enough sources of saltpeter, Rains then needed to develop the infrastructure for large-scale gunpowder production in the South. His initial efforts involved converting two unused mills near Nashville into a gunpowder factory, and this factory was producing 3,000 pounds of gunpowder a day by October 1861.

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Rains also established facilities for gunpowder production near Richmond and New Orleans. But the combined output of these powder works was not sufficient to supply the needs of the Confederacy, and the factories near Nashville and New Orleans were lost by the spring of 1862 when these cities fell to the Union. Soon after his appointment to oversee gunpowder production, George Rains had decided that the long-term solution to the Confederacy's gunpowder shortage was the construction of a large production facility.

For several reasons, Rains selected Augusta, Georgia as the location for the powder works. Augusta was located well within the interior of the Confederate States of America, which made defense of the factory more practicable, and the weather in Augusta is mild enough to allow easy year-round operation. Also, there was ample wooded area near Augusta to supply wood for the charcoal that was needed to make gunpowder. Moreover, much rail transport emanated from Augusta, which provided readily available transportation for raw materials and finished product. To facilitate water transportation, the site that was chosen for the factory lay between the Savannah River and a canal. Because of these advantageous military and logistic attributes of Augusta, George Rains decided to build the powder works in the same city in which the Masters Golf Tournament is held. Rains was guided in his design of the facility by what he called "a singular good fortune." Shortly after his appointment, Rains came into possession of a pamphlet that described a powder factory in England that was at that time the best such facility in the world. While the textual descriptions were thorough, there were no diagrams or drawings, and Rains' experience and expertise in chemistry and iron works were invaluable in interpreting the textual descriptions.

Construction began in September 1861, and gunpowder was being produced at the facility by the following April. The facility, which was named the Confederate Powder Works, consisted



of a two-mile long complex of 26 buildings arranged such that raw materials entered at one end and finished gunpowder exited at the other. The buildings were separated by a large enough distance so that an explosion in one building would not damage any other buildings. As it happened, there were only four accidents during the entire operation of the powder works, two of which were minor and none of which interrupted production. The iron machinery for the

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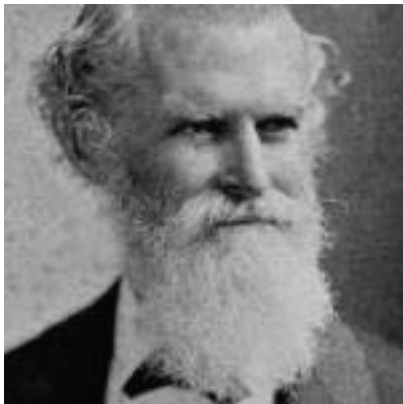


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facility was made at the Tredegar Iron Works. At the time that the facility began making gunpowder, the Confederate government was paying \$3 per pound for gunpowder that was brought in through the Union blockade. Even accounting for the \$385,000 cost of the facility, the gunpowder produced by the Confederate Powder Works was so much less expensive compared to imported gunpowder that the savings for the government have been estimated at almost \$2,000,000. The facility operated until the end of the war and produced 2,750,000 pounds of gunpowder. However, the massive quantity of gunpowder that was produced is only part of the story. George Rains developed improvements in the chemical process for refining saltpeter, so that the saltpeter that his factory produced was of greater purity, which resulted in gunpowder of much higher quality, even compared to the gunpowder produced in the North. Thus, nearly three million pounds of high-quality gunpowder were produced for the Confederate States of America at a site that is about three miles from Augusta National Golf Club, the location of the Masters Golf Tournament.



After the Civil War, the facility was confiscated by the U.S. government, and in 1872 the buildings were demolished. However, George Rains requested that the distinctive obelisk chimney at the facility be allowed to remain standing. Today that chimney is all that remains of the facility that produced the majority of the gunpowder that the Confederacy used in its failed attempt to separate from the United States. In 1879 the Confederate Survivors' Association of Augusta attached a plaque to the chimney, and that plaque reads, "This Obelisk Chimney — sole remnant of the extensive Powder Works here erected under the auspices of the Confederate Government — is by the Confederate Survivors' Association

of Augusta, with the consent of the City Council, conserved in Honor of a fallen Nation, and inscribed to the memory of those who died in the Southern Armies during the War Between the States."

George Rains, the person who designed the Confederate Powder Works and under whose supervision the facility was built, has been called the chief chemist of the Confederacy, which is a fitting description for him. A historian named Maurice Melton characterized George Rains' immense contributions to the Confederate war effort by stating, "Rains showed a genius for getting things done, and to him—almost alone—is due credit for keeping the guns firing." After the war, Rains became a chemistry professor at the Medical College of Georgia and later served for a time as dean. In 1894 he returned to Newburgh, New York to go into business. He died there in 1898 at the age of 81 and is buried in St. George's Cemetery in Newburgh.

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Words that were spoken by one of the characters in William Shakespeare's play *Henry IV, Part 1* almost seem to presage George Rains' work on behalf of the Confederacy. In Act I, Scene III, one of the characters says, "It was great pity, so it was, this villanous salt-petre should be digg'd out of the bowels of the harmless earth, which many a good tall fellow had destroy'd." As this quote seems to foretell, the saltpeter that George Rains produced to supply gunpowder for the Confederacy resulted in the killing and wounding of many men who fought for the Union, and the saltpeter and the gunpowder that George Rains manufactured were made within walking distance of the location of the Masters Golf Tournament. Moreover, if Jefferson Davis was correct about the length of time that the Confederacy could fight with the supply of gunpowder that it had early in the war, then it can be said that George Rains' efforts led to the killing and wounding of many men, both Union and Confederate, by prolonging the Civil War. In that sense, George Rains is one of the people who was most responsible for causing many, from both the North and the South, to give "the last full measure of devotion" by falling victim to that "villanous salt-petre."

By the end of the war, the mill had produced

3,168,450
POUNDS OF GUNPOWDER

of that,

700,465
POUNDS WAS RIFLE-MUSKET POWDER

each pound generated about

100
ROUNDS

(enough to pull the trigger more than 70,000,000 times)

The mill also shipped

1,036,446
POUNDS OF GENERAL CANNON POWDER

By way of illustration, at Gettysburg the Confederates expended about 20,000 lbs. of small arms powder and 60,000 lbs. of cannon powder.

Without implementing any extraordinary measures—in other words, continuing its normal daily production of its various gunpowders—Augusta could replenish the small arms powder in about nine days, and the cannon powder in 17.

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November 11th Meeting

Program: The Petersburg Conundrum., Dr. Curtis Fields. In addition to his talk, Dr. Fields will interpret U.S. Grant himself. You may view his impressive credentials at :

clevelandcivilwarroundtable.com

The program will be conducted via Zoom so be on the look out for a Zoom invitation a day or two before November 11 ,

The session will start at 7 p.m.

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