Hand grenades

Civil War soldiers were known to make jury-rigged explosives using assortments of fuses and gunpowder, but the conflict also saw advances in the design and manufacture of hand grenades. The most popular model was the Union-issued Ketchum grenade, a projectile explosive that was thrown like a dart. The grenades came in one-, three- and five-pound models equipped with stabilizer fins and a nose-mounted plunger. Upon impact, the plunger would detonate a percussion cap and ignite a deadly supply of gunpowder.

While a novel idea, the explosives didn't always work as intended. In fact, when they were bombarded with Ketchum grenades during an 1863 siege at Port Hudson, Louisiana, Confederate soldiers reportedly used blankets to catch the explosives before throwing them back at their hapless attackers.

Questions:

1. What was the name of the most popular Union hand grenade?

2. What was a major issue with using hand grenades?

Rockets

Rocket launchers might seem like a 20th-century phenomenon, but they made a few appearances on Civil War battlefields. Confederate forces reportedly experimented with Congreve rockets, a British-designed explosive that had previously seen action in the War of 1812. These weapons resembled large bottle rockets and were so inaccurate that they never saw widespread use.

Meanwhile, Union forces employed the Hale patent rocket launcher, a metal tube that fired seven- and 10-inch-long spin stabilized rockets up to 2,000 yards. While a vast improvement on the Congreve, these projectiles were still quite unwieldy, and were only generally used by the U.S. Navy.

Questions:

1. Which war were rockets previously used in?

2. On average, how far could a rocket travel?

Machine Guns

Colt revolvers and Springfield muskets were the Civil War's most popular firearms, but the era also gave rise to some of the earliest machine guns. Of these, perhaps none is more infamous than the Gatling gun, a six-barreled piece that was capable of firing up to 350 rounds a minute. The U.S. government never ordered the Gatling in bulk, but Union General Benjamin Butler privately purchased several of the intimidating weapons in 1863 and later used them during the Petersburg Campaign.

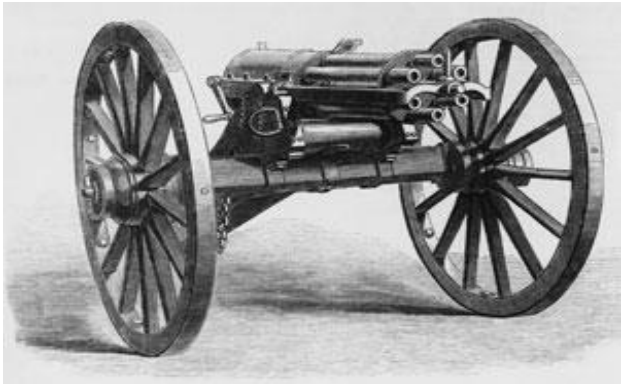


Illustration of a Gatling gun (Illustrated London News/Hulton Archive/Getty Images)

Other rapid-fire guns included the Williams gun—a Confederate breechloader first unveiled at the Battle of Seven Pines in 1862—and the Billinghurst-Requa battery gun, which consisted of 25 rifle barrels arranged side by side. Viewed as too inefficient and unwieldy for infantry combat, these weapons were generally used for guarding bridges and other strategic locations.

Questions:

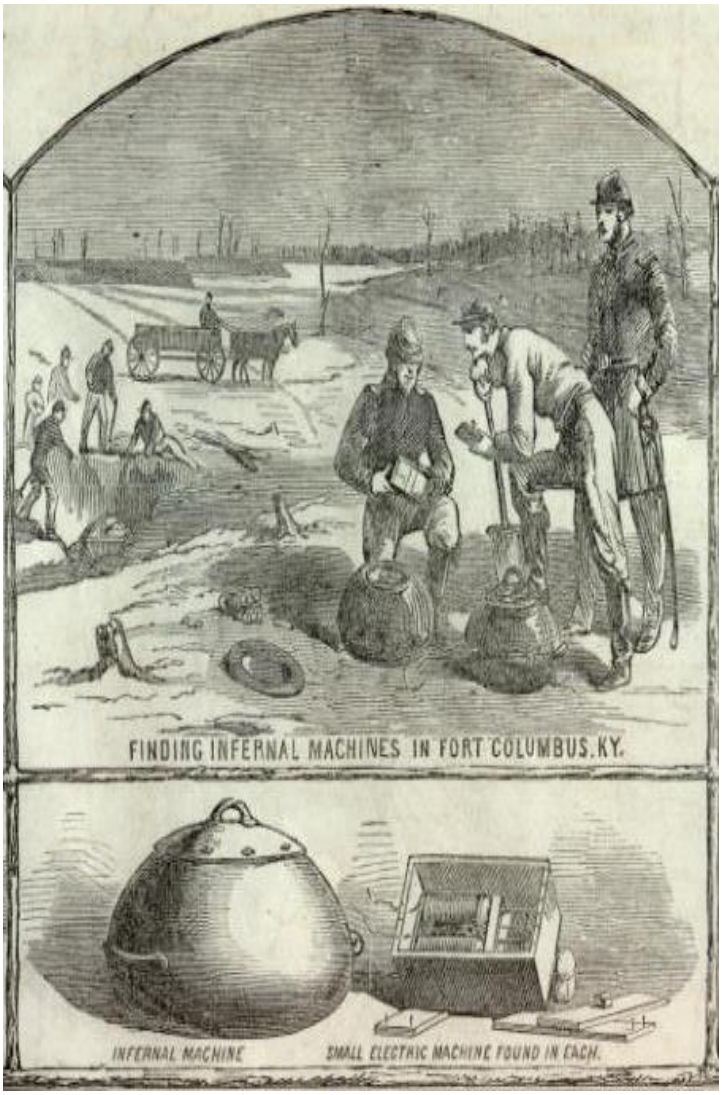
1. What is the name of the most famous Machine Gun during the Civil War?

2. How many rifle barrels did the battery gun have?

Landmines

Mines—or "torpedoes," as they were then known—were largely a Confederate weapon. Originally developed by General Gabriel J. Rains, these antipersonnel explosives were typically iron containers rigged with gunpowder, a fuse and a brass detonation cap. Rains first used the subterranean booby traps in 1862 during the Peninsula Campaign, and later buried thousands more around Richmond and in various parts of the Deep South. In fact, some of these still-active landmines were only recovered in Alabama as recently as the 1960s.

While they proved an intimidating method of psychological warfare, landmines were often viewed as an unethical form of combat. Union General George B. McClellan denounced them as "barbarous," and Confederate General James Longstreet briefly banned their use. Perhaps their most vociferous critic was Union General William T. Sherman, who lost several troops to underground landmines during his famous March to the Sea. Decrying the use of mines as "not warfare, but murder," Sherman reportedly forced his Confederate prisoners to march at the head of his column so that they might trigger any hidden "land torpedoes."

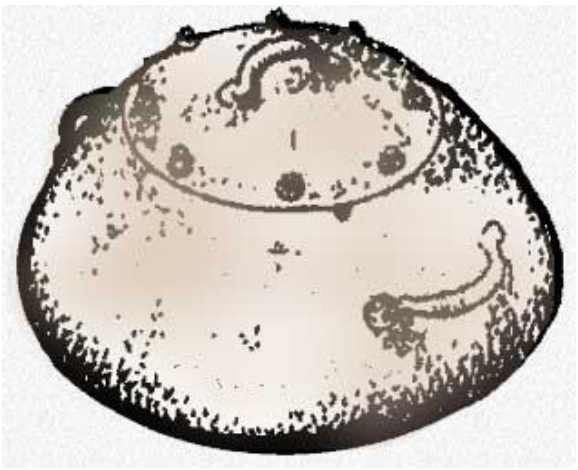


Questions:

1. Who used the landmines more often, the Confederates or the Union?

2. Why were landmines viewed as an "unethical form of combat"?

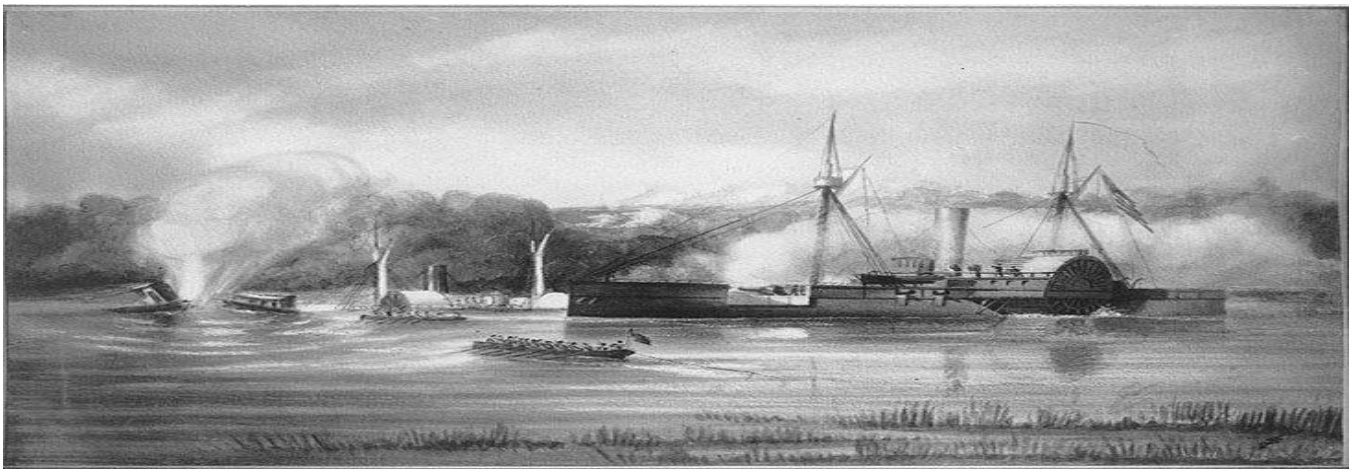
3. In your opinion, do you see anything wrong with using landmines? Explain your answer.

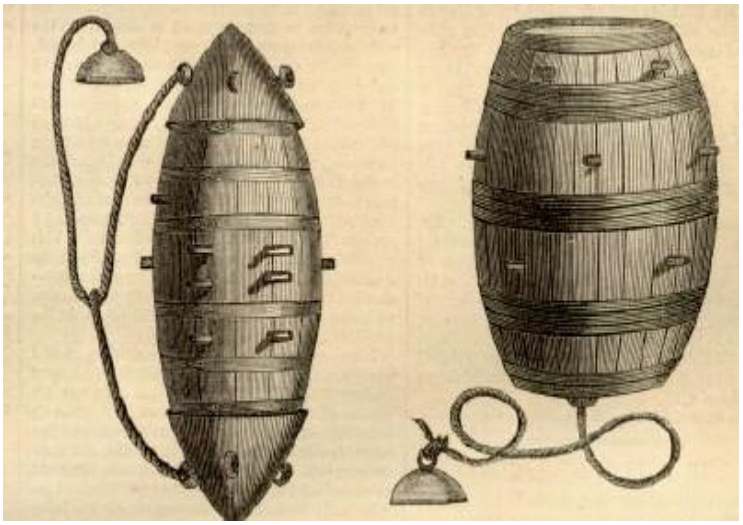


Underwater mines

Along with landmines, the Civil War was also a major testing ground for underwater mines. Both sides mined harbors and rivers with torpedoes, but the Confederacy enjoyed greater success. Starting in 1862 with the sinking of the ironclad Cairo, Confederate torpedoes destroyed dozens of Union ships and damaged several others. Union torpedoes, meanwhile, only sank six Confederate Navy vessels.

The rebels owed their skill at underwater warfare in part to Matthew Fontaine Maury, an oceanographer who first demonstrated the use of mines in 1861. Maury's "infernal machines" made the James River virtually impassable, and mines later terrorized the Union Navy during battles at Mobile Bay and Charleston Harbor. The Confederacy also succeeded in using submarines to turn mines into offensive weapons. In 1864 the H.L. Hunley destroyed the Union sloop-of-war Housatonic after ramming it with a pole-mounted torpedo, becoming the first combat submarine to successfully sink an enemy ship.





Questions:

1. Whose torpedoes sank the most ships, Confederate or Union?

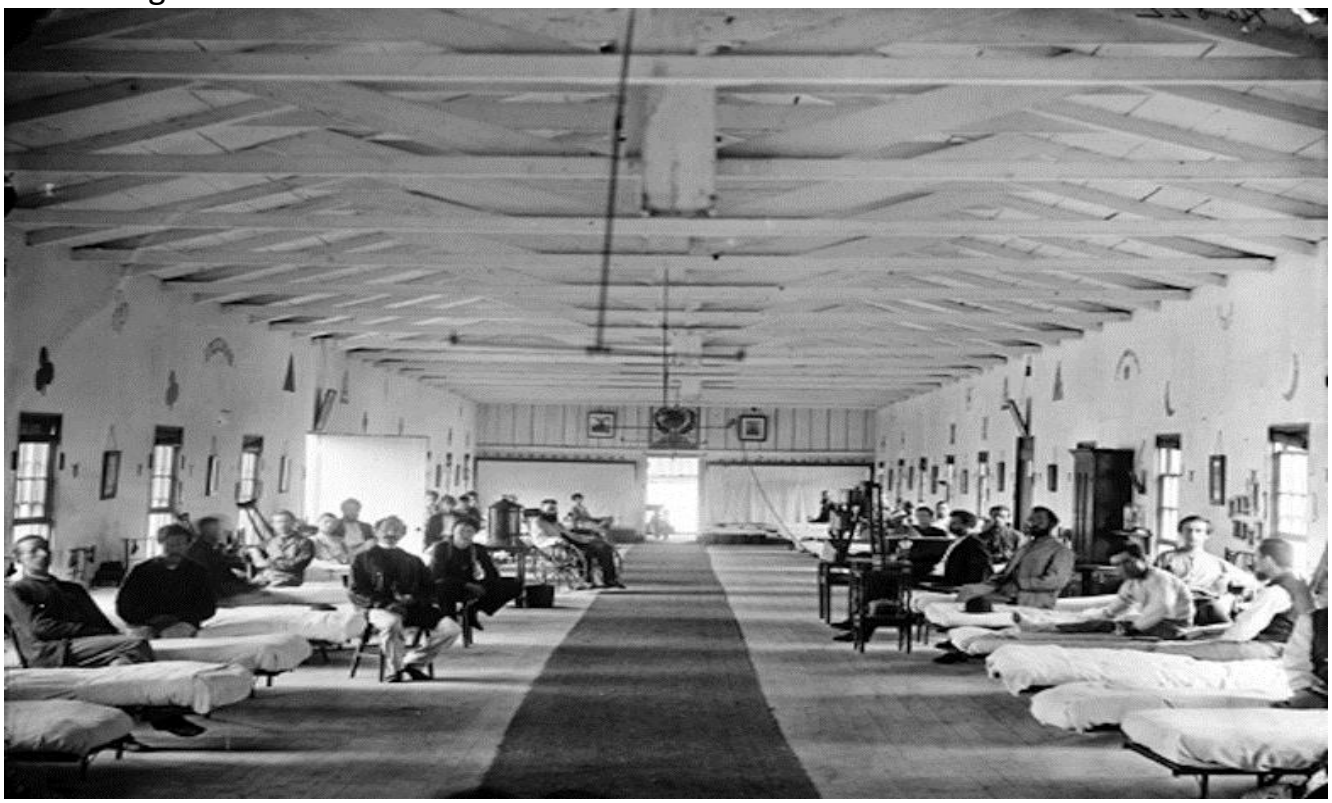
2. How did the Confederates turn mines into an offensive weapon?

3. What was the name of the first combat submarine to successfully sink an enemy ship?

Threat from Disease

In the Civil War, Army surgeons treated a wide spectrum of illness as well as performed advanced surgical procedures. Of the 618,000 reported deaths from both the Federal and Confederate forces during the four years of war, 414,000 were the result of disease. Poor diet, lack of proper clothing, and equipment, and unsanitary conditions contributed greatly to the deaths from disease. Acute and chronic dysentery were referred to as fluxes and eruptive fevers were the diseases of small pox, measles and scarlet fever. Gangrene is not mentioned in the official records because at the time it was not considered a disease but the result of an operation. It is now known that gangrene is a result of a unique organism and qualifies as a disease.

Surgeons attempted to treat these conditions with a variety of compounds and treatments. Usually the most effective medicine was a good diet and the body's natural restorative ability. The medical thought of the time believed that the blood carried disease and by purging the "ill-humors" in the blood, health could be restored. It would not be until the Second World War and the advent of antibiotics (primarily penicillin) that a real understanding and effective treatment of disease would be realized.



Questions:

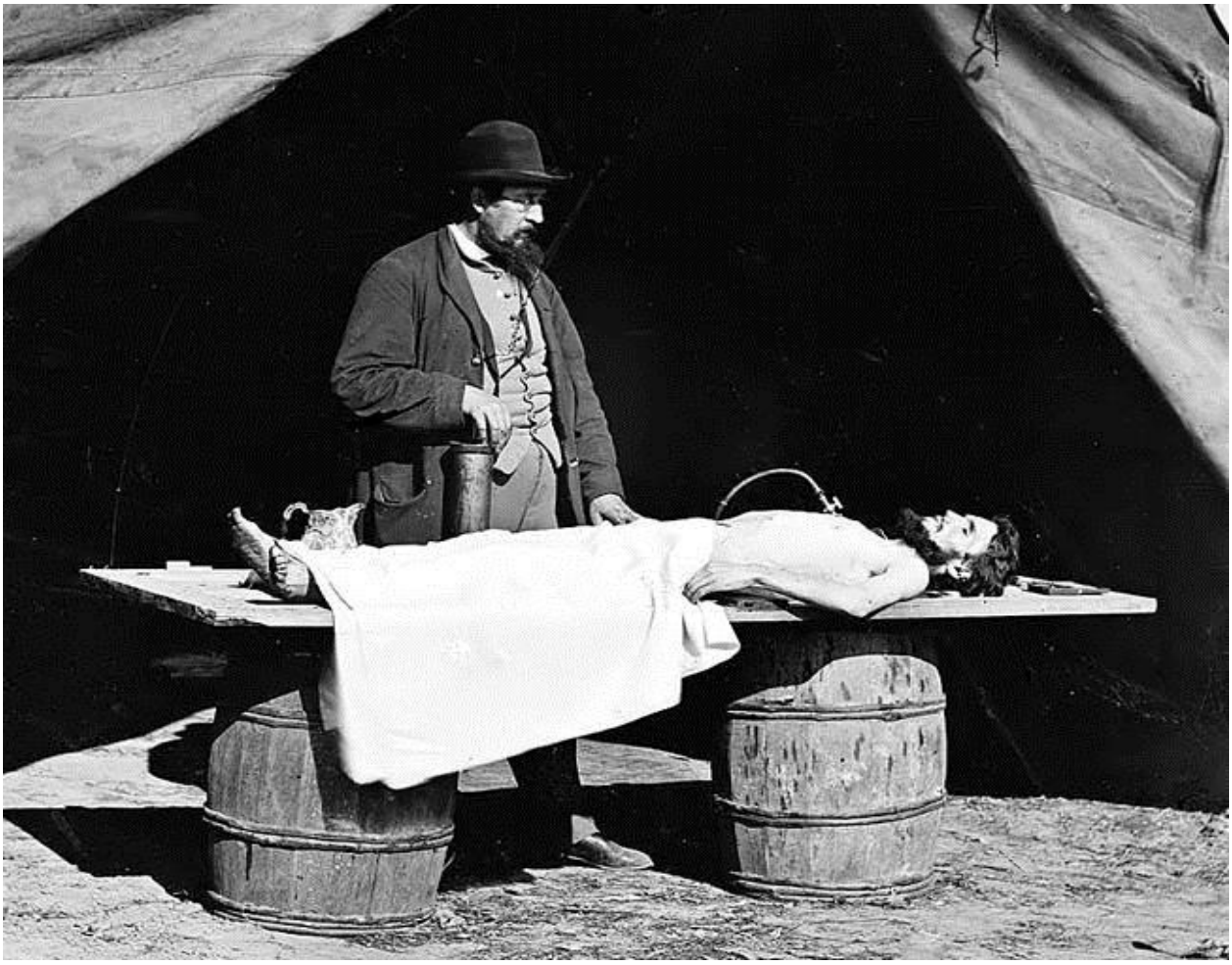
1. How many men died during the Civil War due to diseases?

2. What kind of things contributed to soliders dying from diseases?

3. When would antibiotics start being used as an effective treatment against diseases?

Battlefield Surgery

The most common surgical procedure performed by Army surgeons was amputation. The advancement of military weaponry far outpaced the advancement of medicine. The development and use of the .58 caliber Minié Ball bullet and the relatively low muzzle velocity of the percussion musket all but guaranteed the shattering of bones that left no alternative treatment but amputation. Although ether was used at times, chloroform was the most common form of anesthetic. A typical army surgical team would consist of one surgeon to perform the operation, two assistant surgeons to hold the patient on both sides and one assistant surgeon or medical assistant to hold the limb to be removed. It is estimated that after a major battle, each team would perform an amputation every 15 minutes and often, surgeons would remain on their feet engaged in surgeries for up to 48 hours at one stretch.



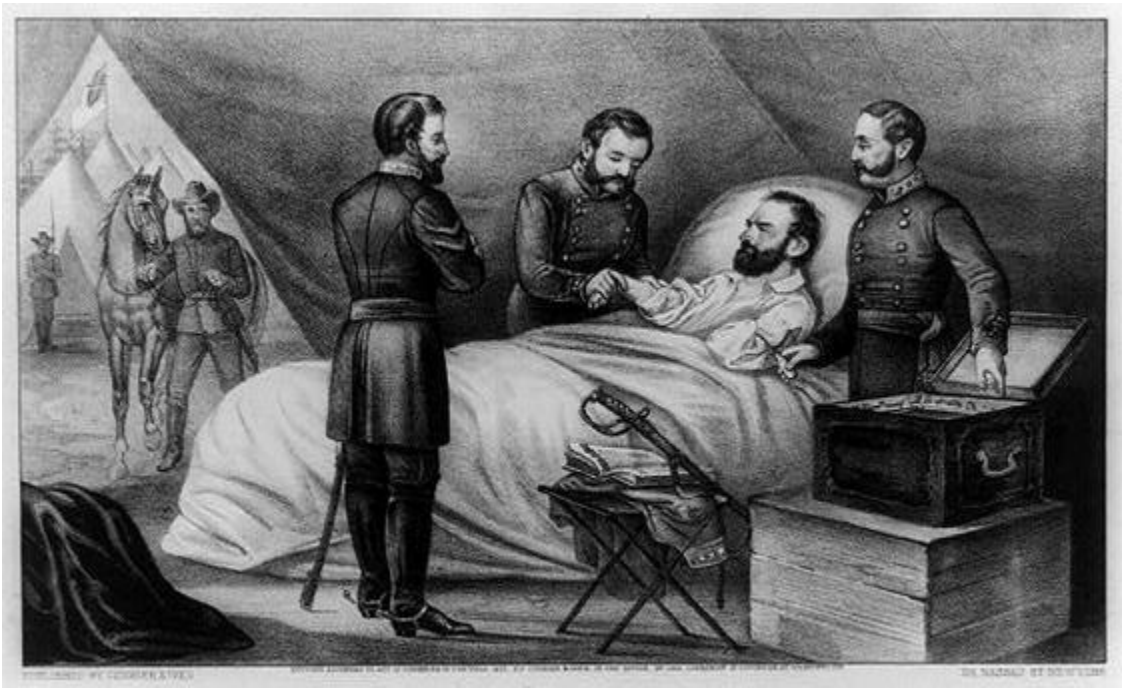
Questions:

1. What was the most common surgical procedure performed during the Civil War?

2. What was the most common form of anesthetic at that time?

3. How often would a surgeon perform an amputation after a major battle?

The Anesthesia Inhaler



In 1863, Stonewall Jackson's surgeon recommended the removal of his left arm, which had been badly damaged by friendly fire. When a chloroform-soaked cloth was placed over his nose, the Confederate general, in great pain, muttered, "What an infinite blessing," before going limp.

But such blessings were in short supply. The Confederate Army had a tough time securing enough anesthesia because of the Northern blockade. The standard method of soaking a handkerchief with chloroform wasted the liquid as it evaporated. Dr. Julian John Chisolm solved the dilemma by inventing a 2.5-inch inhaler, the first of its type. Chloroform was dripped through a perforated circle on the side onto a sponge in the interior; as the patient inhaled through tubes, the vapors mixed with air. This new method required only one-eighth of an ounce of chloroform, compared to the old 2-ounce dose. So while Union surgeons knocked out their patients 80,000 times during the war, rebels treated nearly as many with a fraction of the supplies.

Questions:

1. Why did the Confederate Army have such a hard time securing enough anesthesia throughout the war?

2. How were the Confederates able to treat just as many patients with chloroform as the Union even though they have a shortage?

Facial Reconstruction

Carleton Burgan of Maryland was in terrible shape. The 20-year-old private had survived pneumonia, but the mercury pills he took as a treatment led to gangrene, which quickly spread from his mouth to his eye and led to the removal of his right cheekbone. He was willing to try anything. In a pioneering series of operations in 1862, a surgeon from City Hospital in New York used dental and facial fixtures to fill in the missing bone until Burgan's face regained its shape.

The doctor was Gurdon Buck, now considered the father of modern plastic surgery. During the war, he and other Union surgeons completed 32 revolutionary "plastic operations" on disfigured soldiers. Buck was the first to photograph the progress of his repairs and the first to make gradual changes over several operations. He also pioneered the use of tiny sutures to minimize scarring.

To some, it seemed pretty wacky, like sci-fi for the 19th century. An Illinois newspaper enthusiastically and erroneously described the new treatments: "Such is the progress of the medical department in these parts that half of a man's face demolished by a ball or piece of shell is replaced by a cork face!"

Questions:

1. Dr. Gurdon Buck is now considered the father of what?

2. How many plastic operations were performed on disfigured soldiers during the Civil War?

3. If something happened to you in the war, would you have a plastic surgery if it was still a new procedure? Explain your answer.