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The Men Who Made Ether

By Lacey Villiva

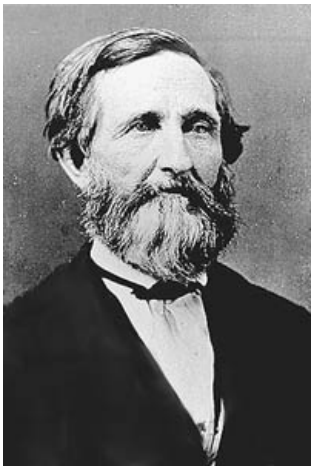
Throughout history doctors have tried many different ways to dull the pain of surgery, from freezing parts of the body to numb the pain, when ice was available; to pressing sponges to patients' noses that had been soaked in such sedatives as mandragora, henbane and opium. There were few analgesics (painkillers) and no functional anesthetics to speak of until the 1840s. This was the specter of surgery before October 16, 1846, a day that revolutionized the medical field.

Two men who were pioneers of the use of anesthesia, ether in the field of surgery were William Thomas Green Morton and Crawford Long. Their discovery of the new use of sulfuric ether was a major breakthrough in medicine and revolutionized surgery. It became especially important during the Civil War, as it helped to lift some of a heavy toll off surgeons and their patients. This article will look at the backgrounds of the men involved in discovering ether, the controversy they wrought and the implications of the Civil War on ether.

WTG Morton, one of four prominent medical men involved in the discovery of Ether as an anesthetic.

The most prominent figure in the discovery of the first anesthetic was a Boston dentist, William Thomas Green (WTG) Morton (1819-1868). At an early age, Morton was called "doctor" by friends and family for the pills and "phials" he dispensed, but his education, in the field of dentistry and did not start until 1840 when he enrolled in the Baltimore College of Dental Science. He left the college in 1842. For two years (1843– 1844) he was in partnership with another dentist interested in ether as an anesthesia, Horace Wells. However, the business foundered, and Wells left Boston and resigned from the partnership. Morton remained in Boston and by 1844 had a thriving practice making dentures that suctioned into the mouth to hold them in place. Although the dentures pleased patients, the pain extracting teeth did not. Morton began again his experimentation with ether.

Morton's description of how he discovered the ether anesthetic can be found in his *Memoir to the Academy of Sciences at Paris on a New Use of Sulphuric Ether* published in November of 1847 after an attempted theft of his ideas. The memoir contains an account of Morton's experimentation with ether, beginning with chloric ether of which Morton says, "His suggestions had not gone beyond the direct application of ether, in the same manner that laudanum and other narcotics have always been applied to sensitive teeth." Morton, having read about ether frolics, parties where the drug was freely administered for its heady effects, and other social uses of the drug, "having some of the ether left which Dr. Jackson had sent… inhaled it from the handkerchief, but there was



Crawford Long, a doctor from Georgia, may have been the first man to use ether as an inhaled anesthesia.

CARLYLE HOUSE
Sarah Coster, Site Administrator
Helen Wirka, Site Specialist
Lacey Villiva, Education Assistant

This image depicts a surgery taking place with the use of an anesthetic, which could have been ether or nitrous oxide, laughing gas. Courtesy of the National Museum of Health and Medicine.

not enough to produce a greater effect than exhilaration." In 1846, his curiosity peaked by more stories of ether inhalations, Morton experimented "upon a water spaniel, inserting his head in a jar having sulphuric ether at the bottom." Morton then claims to have gotten his assistants to use it to put them into a "torpid" but excited state, not the insensible state he was looking for and had achieved with the dog.

The other man to have such an impact on surgery was Crawford Long, a rural Georgia doctor, who, at college, became familiar with the social aspects of ether. That led to his discovery of its anesthetic qualities completely independently of Morton. Upon completing his studies in 1839, Long traveled to New York to "walk the hospitals," a process of watching, and assisting other doctors perform surgery in order to perfect his own skills, a practice similar to a doctor's residency today. Two years later Long returned to Georgia and settled in the town of Jefferson, twenty-five miles from his childhood home. It was less than one year later, in 1842, that Long used ether as an anesthetic in his practice.

Unlike W.T.G. Morton, Long did not officially publish his findings on ether until nearly seven years after he first used it in surgery. When he finally did publish his findings, it was in a paper printed in the *Southern Medical and Surgical Journal* in 1849, which detailed his many uses of ether, the earliest of which dated March 30, 1842. Before that, however, Long experimented with the inhalation of ether a number of times. James M. Venable, one of Long's patients, attests to the fact that "in the early part of the year [1842] the young men of Jefferson…were in the habit of inhaling ether, for its exhilarating powers…." Other young men also credit Long with administering ether as a social drug. In his own writings on his personal use of ether, Long notes, "my friends, while etherized, received falls and blows… [T]hey uniformly assured me that they did not feel the least pain from these accidents." The first patient to whom Long "administered ether in a surgical operation was the abovementioned Venable… He consented to have one tumor removed, and the operation was performed the same evening."

Both of these intrepid men found a way to use ether in different circumstances and for different reasons. It seems that ether was readily available to both from local druggists and chemists, and they were fascinated with the possibilities that came from the "ether frolics" that were popular at the time. Morton took time off from his practice to experiment on himself and animals before testing ether on other people. Long, on the other hand, noticed what happened to himself and with his comrades while they were under the influence of ether. Having noticed a decided lack of pain displayed by these men, he experimented, to great advantage on a man who wanted a superficial surgery. When Morton finally used ether as an anesthetic in his practice, he disguised its obvious scent with a bit of orange oil and called it letheon, after the River Lethe in Greek mythology. Long was much freer with the substance, letting his patients know exactly what was causing them not to feel pain.

The discovery of ether led to the Ether Controversy. It was the controversy itself that was often associated with ether, the anesthesia. The Ether Controversy involves a great number of men, but there are only a few who are central characters. These are, of course, Morton and Long, as well as Charles T. Jackson, a doctor involved in Morton's experimentations, and Horace Wells. These four men created great chaos in the medical and scientific realms with their claims to be the first to use ether as an anesthetic.

This reproduction of Morton's inhaler was a part of his experimentation in methods to administer ether.

Morton's first demonstration of his revolutionary ether anesthetic was well publicized, and is depicted in the image above. Surgeries of this caliber were frequently open to other doctors and medical students.

Two of the participants, Horace Wells and Charles Jackson, had little actual interaction with the drug in question. Wells, Morton's early partner, experimented more with nitrous oxide, or laughing gas, than ether. His demonstration with nitrous oxide, however, was deemed a failure and garnered ridicule from the medical community. Dr. Charles Jackson, a scientist and physician, with whom Morton had studied, gave Morton the idea of ether being used as a topical drug. Later he claimed that Jackson had given him nothing further than an apparatus to administer the drug, and "valuable information as to the kinds and preparations of ether."

It is difficult, however, to prove any of Morton's experimentation with ether before his debut in 1846 because he was the only person present for most of his experimentations. In an article published in the *Boston Medical and Surgical Journal*, Dr. Henry Jacob Bigelow gives a chronology of his own about the uses of ether and that of other doctors of the time, as well as a description of Morton's uses of the anesthetic. He describes in detail Morton's use of ether on a number of patients in the space of an hour. This and Morton's *Memoir to the Academy of Sciences at Paris* provide some evidence to Morton's experimentation in surgery, but there is little else available which proves that he did in fact experiment with ether.

Long's involvement with the Ether Controversy did not occur until long after these men had staked their claims as "discoverers," which was in late December 1849. Long even says that he knows "that my interests have suffered from not making an earlier publication," but he also notes that "I would not be persuaded…to present my claim to being the first to use ether as an anaesthetic in surgical operations, if I were not fully satisfied of my ability to establish its justice." In his letter to the *Southern Medical and Surgical Journal*, Long provides a number of witness testimonies to having been under the influence of ether administered by Long or witnessing one of his surgeries which involved its use. The first of these surgeries occurred on March 30, 1842, more than four years before Morton first demonstrated in Boston; and in this period of time Long has records of no less than five surgeries performed with ether, and claims that there were more which are not stated therein. All of these proofs are notarized by witnesses and formally placed within his account of his uses. His account is therefore much more believable.

Research shows that anesthesia and its use in surgery during the Civil War spreadas many as 90% of the surgeries during the war were performed under anesthesia. Still, prescribing the appropriate dosage was a problem for some time. The war, however, eventually limited the ability of both sides, especially the Confederacy, in obtaining supplies necessary to manufacture or administer the drug. Without further research, the exact method of use is impossible to judge.

Following the war ether anesthesia as well as chloroform and nitrous oxide were used in surgery. Through the war and after it, tragedy struck as patients died of the use of anesthesia, though it is impossible to say whether or not it was an overdose of the drug or complications of its use. By the 1870s, however, nearly all surgery was performed under some kind of anesthesia.

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