

Medicine in Stamps

Crawford Long (1815-1878): father of modern anaesthesiology

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It is difficult to imagine modern surgery without the benefit of anaesthesia. Prior to the advent of anaesthesia, surgeons resorted to crude means of relieving pain, such as concocted mixtures of herbs and plants like marijuana, opium and belladonna. Some employed hypnotism and mesmerism, and still others used nettles to create a counter-irritant effect to distract the patient from pain. Although alcohol was also a fairly standard option, the amount required to achieve sedation was usually accompanied by undesirable side effects. An anecdotal account described a well-placed blow to the jaw to render the patient unconscious. These techniques would soon become obsolete.

On March 30, 1842, Dr Crawford Long first used inhaled sulphuric ether to render a patient unconscious prior to removing two neck masses. The patient, a 26-year-old man named James M Venable, was instructed to inhale through an ether-soaked towel. Once the ether took effect, Dr Long set to work and quickly excised the tumours from the back of the patient's neck. Dr Long noted, *"the patient continued to inhale ether during the time of the operation, and seemed incredulous until the tumor was shown to him. He gave no evidence of pain during the operation and assured me after it was over that he did not experience the least degree of pain from its performance."*

Background: Crawford Williamson Long was born on November 1, 1815 in Danielsville, Georgia. His father, James Long, owned the first store in Danielsville, was its first postmaster and later became a State senator. At the age of 14 years, Long attended Franklin College, which is today, the University of Georgia. His peers nicknamed him "The Baby" due to his young age, and at just 19 years old, he graduated second in his class with a Master of Arts degree. Long then moved on to serve as an apprentice for Dr George R Grant in Jefferson, Georgia. After deciding to formally pursue a career in medicine

several months later, he enrolled in the Medical Department of Transylvania University in Lexington, Kentucky. He later transferred to the University of Pennsylvania, America's oldest medical school, and earned his medical degree in 1839. For the next 18 months, Long shadowed several leading doctors at various hospitals in New York, where he honed his skills as a surgeon. Described as a "considerate, high-bred, Christian gentleman," he returned to his home state of Georgia in 1841 and settled in the small town of Jefferson.

Ether Frolics: During his time in Philadelphia, it was fashionable among young socialites to inhale gases such as sulphuric ether and nitrous oxide to induce disorientation and disinhibition, leading to "hilarious antics" amidst laughter and oblivion in some participants and deep sleep in others. These recreational crazes became known as "ether frolics". At the time, there was no stigma associated with physicians participating in such activities and Long was known to occasionally supply the ether.

Crawford Long was himself an ether frolicker, but with a significant difference.

He was also a keen observer. He wrote that *"On several occasions I inhaled the ether for its exhilarating properties and would frequently at some short time subsequently discover bruises or painful spots on my person which I had no recollection of causing, and which I felt satisfied were received while under the influence of ether... Observing these facts I was led to believe that anaesthesia was produced by the inhalation of ether and that its use would be applicable in surgical operations."*

Finally In Print: Crawford Long did not advertise or publish his initial successful use of ether anaesthesia. In the months that followed, he performed a number of surgeries where, with the aid of ether, the patients felt little or no pain. It took Long some seven years before he finally published his findings in the



December 1849 issue of *The Southern Medical & Surgical Journal*. In it he described a number of “controlled experiments” to further prove the effectiveness of ether anaesthesia. In one patient, three tumours were removed, but ether was used in the excision of only one of the tumours. Without ether, the patient “suffered severely.” Similarly when a youngster underwent amputation of two fingers during separate operations, he experienced extreme pain during the one when he was awake, and was pain-free and insensible during the other.

Competing Quartet: During the seven-year gap between Long’s painless surgery and the actual publication of his work, three other men came forth to claim the discovery of general anaesthesia. Horace Wells and William Morton were dentists, and Charles Jackson was a chemist.

Wells was a Hartford dentist who had successfully used nitrous oxide, another anaesthetic agent, during tooth extractions. In January of 1845, he attempted a highly publicised demonstration of his methods at the Massachusetts General Hospital. Unfortunately, the patient, who was insufficiently anaesthetised with nitrous oxide, let out a sharp cry at the time of incision and Wells was driven from the amphitheatre under a shower of hissing and jeers. The sting of public humiliation never left him, and he gave up his dental practice three years later. Continuing to experiment with various inhaled anaesthetics, Wells eventually became addicted to chloroform. After assaulting a prostitute under the influence of chloroform, he was imprisoned and committed suicide soon thereafter at the age of 33 years.

Morton was a former student and dental partner of Wells. Under the guidance of Jackson, who was a noted Harvard chemist, Morton successfully demonstrated the use of ether anaesthesia on October 16, 1846 in a crowded amphitheatre at the Massachusetts General Hospital. He excised a congenital vascular malformation from the neck of a 20-year-old printer named Edward Gilbert Abbott. Although Morton succeeded where Wells had failed, his triumph was not without conflict. Attempting to profit from his newfound notoriety, Morton applied for a patent recognising him as the principal discoverer of ether as an anaesthetic. It was later estimated that Morton stood to collect \$355,000 in the 14 years before his patent would have expired. Unfortunately, the U.S. Patent Office later invalidated his patent application and he ended up receiving nothing. Morton died from a stroke at the age of 49 years, leaving behind a penniless wife and five children.

Jackson, Morton’s mentor, sought to gain recognition of his own. Jackson betrayed Morton by presenting an account of the successful operation to the French Academy

of Medicine, omitting Morton’s role altogether. The feud between Morton and Jackson intensified, but neither stood to profit from their work. Jackson too sustained a stroke that left him paralysed and with profound speech impairment. His debilitated state led to his institutionalisation at a mental asylum for the last seven years of his life until his death at the age of 75 years.

Long prevailed with his dignity preserved. He took over the medical practice of his early mentor Dr Grant and worked diligently as a practitioner “while cautiously experimenting with ether as cases occurred.” He treated patients at his clinic in Jefferson and made house calls, often trekking across lonely and treacherous terrain to reach his patients. While his rivals sought fame and fortune for their role in publicising the use of anaesthesia, Long’s only monetary reward for his contributions was the fee he charged for the surgery performed on his first patient, Venable, which amounted to two dollars for the tumour excision and twenty five cents for the sulphuric ether.

In the preface to his landmark article, Long defended his cautious approach stating that it was irresponsible “to present my claim to being the first to use ether as an anesthetic in surgical operations if I were not fully satisfied of my ability to establish its justice.” Nearly 40 years as a physician, Long died on June 16, 1878 at the age of 62 years after delivering the baby of the wife of Congressman HH Carlton. As he lay dying, his last words were to “care for the mother and child first.” To Crawford Williamson Long and to those he served, he was a simple and humble rural practitioner from Madison County, Georgia. Immortalised by a commemorative statue which stands in the National Capital’s Hall of Fame, he has come to be regarded as the father of modern anaesthesiology.

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