THE CONQUEST OF PAIN

Freedom from pain is probably the single most important criterion for happiness. An intense toothache, for example, makes us forget about everything else. Election results are of no interest and we couldn't care less about the vagaries of the stock market. Just get rid of that pain! So off we go to the dentist who administers an anesthetic of some kind and proceeds to fix the problem by drilling, cutting or pulling. Life is worth living again.

Can you imagine having this done without the benefit of a pain killer? Worse than that, can you imagine having a leg amputated or a gallstone removed without anesthesia? Yet this is exactly what patients had to endure prior to 1846, a pivotal year in the history of science. Alcohol was of course available, but no matter how drunk a patient was, he tended to notice when his leg was being sawed off.

But around the middle of the nineteenth century, chemistry came to the rescue. Joseph Priestley, the brilliant self-educated British chemist, described how he had made a novel "air" by carefully heating ammonium nitrate. Carefully, was important, because ammonium nitrate can explode. This "air" which turned out to be nitrous oxide came to the attention of young Humphrey Davy, who as a 17 year old, had begun experimenting with it and noted its intoxicating effects; it made people giggle and laugh!

Davy became a noted scientist and eventually described his observations in a book published in 1800, even mentioning how the gas relieved his headaches. Soon the word was out and "laughing gas" parties became a form of entertainment, particularly among students and intellectuals. But nitrous oxide was not the only intoxicating vapor that fueled these parties.

Ether had been made by the Prussian botanist Valerius Cordus in 1540 by reacting sulfuric acid with alcohol. By 1818 an anonymous note, generally attributed to Davy's protege, Michael Faraday, had appeared in the Quarterly Journal of Science and the Arts pointing out that ether "produces effects similar to nitrous oxide." Ether "frolics" and nitrous oxide parties became quite the rage!

Itinerant "professors" amused audiences with demonstrations of the effects of nitrous oxide on volunteers. At such a public performance in Hartford, Connecticut, Horace Wells, a dentist in attendance, noted that a volunteer who had accidentally gashed his leg appeared to feel no pain. He purchased some laughing gas from "Professor Colton" and had one of his own teeth pulled out by an assistant. He felt no pain!

Wells realized that this breakthrough in pain control had scope far beyond dentistry. He asked a former partner, William Morton, who had moved to Boston, to arrange a demonstration of nitrous oxide as a surgical anesthetic. Morton had been dabbling in such matters himself and had learned about ether from Professor Charles Jackson who had been privately tutoring Morton in chemistry. He had actually tried to desensitize patients with ether but his results were inconsistent. He was quite willing to see what he
could learn from Wells since he had been thinking about the vast potential financial profits of anesthesia.

The demonstration was arranged at Massachusetts General but turned out to be a fiasco. The student volunteer who was to have a tooth extracted began to scream from pain. Wells, in his eagerness, had not administered enough laughing gas! He was disgraced, gave up dentistry and eventually committed suicide.

Morton became even more dedicated to solving the problem and focussed his attention on ether because he realized that the chief surgeon at Massachusetts general, John Collins Warren, would never agree to another nitrous oxide demonstration. Nevertheless, Morton managed to convince Warren that he had a "new and improved" anesthetic.

This time the experiment was successful. A tumor was removed from a patient's jaw under ether anesthesia and on October 16, 1846 the era of painless surgery made its debut. Within weeks, surgeons around the world were putting ether to use in surgery.

The public also learned about ether, from a most unusual source. Robert Houdin, the most famous magician at the time incorporated the new discovery into his act. He had designed a "suspension" illusion whereby his son appeared to float in the air, defying gravity. Houdin had the idea of wafting ether fumes over the audience while the illusion was being performed, implying that the ether vapors were responsible for the levitation.

Thousands learned about the existence of ether in this fashion. There was even a practical benefit to this stage illusion besides its entertainment value. If a patient in a hospital was told that ether would be used, there would be no fear. At worst, remembering Houdin's stage effect, they might float right off the operating table!

The years following the introduction of ether saw a bitter battle between Wells, Jackson and Morton over who was the rightful discoverer of anesthesia. The truth is, that it was actually none of these bickerers. The discoverer of anesthesia was most likely Crawford Long, a well trained rural Georgia physician!

When the U.S. Congress was trying to decide who among Wells, Jackson or Morton should get a $100,000 award for the discovery that had so dramatically alleviated human suffering, it received a well-documented letter from Long describing how he had used ether to remove cysts and even amputate toes at least four years before Morton's classic demonstration in Boston. But being a country doctor, outside the mainstream of academia, he had never bothered to publish the results!

Because of the confusion, the prize was never awarded. Wells committed suicide two years later, Morton died of a stroke just after one of his petitions to Congress was rejected, and Jackson ended up in an insane asylum after he chanced upon Morton's grave in a Boston cemetery and noted the inscription that he was the "Inventor of Anesthetic Inhalation." As for Long, he outlived the others and had a long career, dying of a stroke while attending to an etherized lady painlessly giving birth. A statue of Crawford Long now stands in the U.S. Capital Building as a tribute to perhaps the greatest medical discovery of all time.