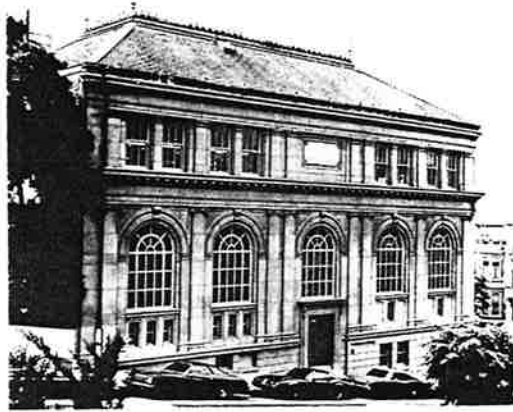


Arthur E. Guedel Memorial Anesthesia Center



The Guedel Center

Anesthesia in Early California

By Selma Harrison Calmes, M.D.

October 16, 1996, marked the 150th anniversary of the first successful demonstration of surgical anesthesia at the Massachusetts General Hospital in Boston. Many events are celebrating the ether demonstration which marks the beginning of our specialty. To add to the celebration, this article reports what was happening in California around the time of the ether demonstration, especially how the news of anesthesia might have gotten to California after the demonstration in Boston. It is useful to look at four time periods: before 1846, 1846 to the Gold Rush of 1849, 1849-1856, when the state's first medical journal began publication and we have the first definite information on anesthesia, and 1856-1897, when the first California physician specialized in anesthesiology.

Before 1846

As was the case throughout the world, California's native people did some surgery, such as trephining of skulls and repair of eviscerations from battle wounds. Pain relief for operations was attempted with plant preparations

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such as Jimson weed, which has a high concentration of belladonna alkaloids. Explorers from several countries visited the state beginning in the 16th century. The first physician, Pedro Prat, came in 1769 when Spain began to colonize California by founding a chain of missions along the coast. He was the first of a series of Spanish Surgeons General. Surgeons General were stationed at the Presidio at Monterey and were the only physicians in the state, except for occasional visiting ship physicians. There were few of these visiting physicians because Spain banned trade with other countries. The mission padres were sent to their posts with simple medical kits and gave most medical care in California. The padres even performed two Cesarean sections, in 1805 and 1825. Both mothers and babies died.



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Mexico became independent from Spain in 1821, and California came under Mexican rule. The missions were secularized, and ship trade increased. The geographic border of the United States was only about half way across the continent at this time. To illustrate this, Michigan was considered "the West" in the 1840s, a strange concept to us in today's West. Some overland travel to California began after 1841. The U.S. became interested in California when it discovered that England was attempting to annex California. The U.S. began the Mexican American War in May 1846. One purpose of that war was to acquire California. California finally surrendered to the U.S. in January 1847, two months after the ether demonstration in Boston. So, California was not even a part of the U.S., either geographically or politically, at the time of the ether demonstration.

1846-1849

From Boston, the news of anesthesia spread quickly throughout the world. The news spread by reports written in letters between physicians and in mailed medical journals. Within six weeks after the Boston demonstration, ether was being used in Europe. Within a year, the news had reached the world's major cities. When did the news get to California? Much later! This was because there was little reason and no easy way for the news to get to the state. Between 1846-1849, there were only five

trained physicians and two army surgeons in California. There was no hospital, no pharmacy, no medical school, no medical society, and no medical journal. Travel was also very difficult. It took a minimum of six months, if all went well, to get to California, either by the overland route or by the usual method, ship travel around the Horn. There was no regular mail service, either with the U.S. or within the state. Although the earliest the news could have reached California from Boston would have been April 1847, records of the army surgeons' work in the state reveal that anesthetics were not ordered or used. Medical supplies for the army surgeons came from Hawaii, another example of how geographically isolated the state was then.

1849-1856

California's geographic isolation changed in 1849. Gold was discovered in January 1848, near Sacramento. This exciting news took time to get to the

The following was inadvertently omitted from Dr. Larry Silver's article "Volunteering in Eritrea, Africa" which appeared in the *CSA Bulletin* (Vol. 45, No. 4-July-August 1996).

"I would like to thank Health Volunteers Overseas and the Stanford Anesthesia Department for making my trip possible, and Ronald Katz, M.D., of Research and Education for Anesthesia and Pain for generously donating transportation costs."

East. It finally arrived in September and was not widely known until December 1848. Then, the world rushed in. The "forty-niners" included an estimated 1,200 to 1,500 physicians seeking to "strike it rich." Most did not succeed, however, and many ended up practicing medicine later. It also became easier to travel to California. The sea route was shortened from six months to six weeks by crossing Central America at the Isthmus of Panama or at Nicaragua. The overland route still took six months. Both routes were still highly fatal to travelers,

with cholera, scurvy, malaria and accidents ever present. With improved travel, medical communication improved, and medical journals arrived from the East Coast and Europe.

There is no precise evidence of use of anesthetics during this period. One Scottish physician in the tiny Gold Rush town of Placerville advertised "sets bones, draws teeth painlessly." A graduate of the University of Edinburgh, he was no doubt familiar with anesthesia and might have brought anesthetics

with him. We do know he also brought a stethoscope and microscope. Other evidence is negative. There was no operating room in the state's first hospital. There was no charge for administering anesthesia in the 1859 Fee Bill (like our present ASA Relative Value Guide) for Los Angeles physicians, the first Fee Bill in the state. Most importantly, California of this time was primarily a male society. When anesthesia was first introduced, anesthesia was often used selectively, usually for women and children and the wealthy. Men were thought to be strong and to not need anesthesia as much as more "sensitive" women and children, and the poor were thought to not be deserving of pain relief.

By 1856, California had changed markedly. The Gold Rush was over, there were families, agriculture was established, and there was mail service with the U.S. and within the state. Physicians got a way to communicate in 1856, when the state's first medical journal began. Anesthesia was in use, and two anesthetic deaths were reported on the first page of the first issue. The volume reported 13 operations. There was no mention of anesthesia for four of these. Chloroform was used in six and ether in three. Two laboring patients received chloroform, one because the patient demanded it. So, chloroform was the most commonly used agent in California ten years after the ether demonstration.

1856-1897

This was a period of slow growth for anesthesia, both in the state and nationally. The state's first medical journal only lasted one year; a second began in 1858 and had pharmacy advertisements for preparations made in the state. An 1874 article on "stealing" children to sleep was the first English language article on that technique. (There was controversy at the time about whether anesthesia could be induced when the patient was already sleeping. This article was published to report that it could be done.) That year also brought the first mention of charges for anesthesia services, in the Alameda County Medical Society Fee Bill. Anesthetics "in any case" were \$5 to \$25. Operations were \$100 to \$500 for major cases, \$25 to \$100 for secondary operations, and \$5 to \$25 for minor procedures. Anesthetic mortality was estimated in 1883 to be one in every 2,800 anesthetics. The article ended with a plea for professional anesthetists: "When the administration of anesthetics becomes an isolated profession, and shall become the business of men who shall do nothing else (an example of which is the celebrated Dr. Clover in London), then it is probable that the mortality will fall much under that above."

It was not until 1897, however, that a California physician devoted her practice solely to anesthetics. This was Dr. Mary Botsford of San Francisco, an 1896 graduate of the University of California. Unhappy with the excessive nausea, vomiting and somnolence resulting from the current use of ether for operations (chloroform had become less popular by then, due to its higher mortality), she declared herself a specialist in anesthesia in 1897. She practiced initially at the Children's Hospital of San Francisco, one of nine hospitals founded by women physicians in the U.S. to provide practice opportunities for women physicians. She was later the first head of anesthesia at the University of California San Francisco and the first full professor of anesthesia there. She was the first president of the Section on Anesthesia of the California Medical Society, which later became the California Society of Anesthesiologists. She also served in 1930 as president of the Associated Anesthetists of the U.S. and Canada, the national professional anesthesia society of the time. She was directly responsible for a state law passed in 1920 requiring that all medical students study anesthesia. This was an attempt to increase physician interest in the specialty; California was the only state to have such a law. She published many papers on anesthesia techniques and professional standards, helping shape the practice of anesthesia in the state and the professionalization of anesthesiology.



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These events form the base on which modern, truly professional anesthesiology developed in the state. Over the next year, additional articles on subsequent events in the history of anesthesia in the state will appear in the Guedel column.

For more information and references, see Calmes SH. "Anaesthesia in Early California" in Atkinson RS and TB Boulton, eds. *The History of Anaesthesia*. (Royal Society of Medicine, London). 1989, pp 129-133. For more information and references on Mary Botsford, see Calmes SH. "The Women Physician Anaesthetists of San Francisco, 1897-1940: The Legacy of Dr. Mary E. Botsford." *op cit*, pp 547-550.