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## DNA, anthrax and a Mountain Meadows Massacre murder mystery

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The coffin with the remains of Proctor Robison is sealed inside a concrete box. (Ugo Perego)

FILLMORE, Utah — The first clue was a spider bite.

The Fancher-Baker party of emigrants were wending their way toward a tragic destiny at Mountain Meadows in 1857. But before the Arkansas wagon train reached Utah territory, a member of their party named Peter Huff was bitten in his sleep by a tarantula and died after intense suffering.

The second clue was poison.

Proctor Hancock Robison, a 14-year-old boy in Fillmore, Utah Territory, was skinning one of several cattle that died shortly after the Fancher-Baker party passed through the town. The boy scratched a sore on his nose while he was working on the hide and the poison entered his body. His face swelled beyond recognition. Death soon ended his misery.

In 1857 the two incidents did not seem related. The first death was blamed on a spider. The other was blamed on the emigrants — who were believed to have poisoned a spring that not only killed cattle and Robison, but several Native Americans as well.

But modern science and historical inquiry have uncovered a possible connection between the two incidents. Huff from the Fancher-Baker party and 14-year-old



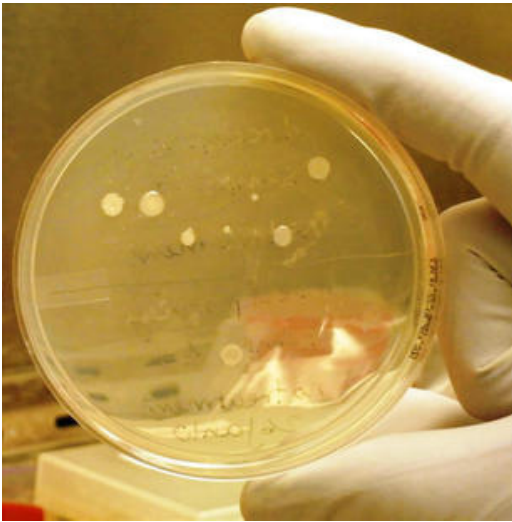
Proctor Robison most likely were not the victims of a spider and poison. Spider bites

Original tombstone found underground. (Ugo Perego)

and a poisoned water source simply don't cause the horrible symptoms the victims experienced.

"The settlers assumed it was the poison," historian Ronald W. Walker said. "But that didn't make a lot of sense."

In the book "[Massacre at Mountain Meadows](#)," Walker and co-authors Richard E. Turley and Glen M. Leonard argued the real culprit was the bacteria *Bacillus anthracis*, which causes the disease known as anthrax. Anthrax causes skin lesions and swelling that match the descriptions of the deaths. It is transmitted cattle to cattle, and cattle to people, but not person to person.



Petri dish with bacterial growth. (Erin Price)

Anthrax was common in 1857 but was not yet a recognized disease. And because it was unknown, people often blamed other causes — such as water sources poisoned by enemies.

"The settlers assumed the worst about the wagon train," Walker said. The accusation of poisoned water turned some Mormons in Southern Utah against the emigrants - although the stories probably didn't spread fast enough to play a part in the infamous massacre of all the party's adults and older children on Sept. 11, 1857. The rumors did, however, become a convenient after-the-fact justification for the killings — albeit a weak one.

Turley spoke with Ugo Perego, who was a geneticist at Sorenson Molecular Genealogy Foundation in Salt Lake City about the deaths. He wanted to know if it were possible to scientifically verify if anthrax had killed Proctor Robison.

It was. If *Bacillus anthracis* spores were still in the dirt around Robison's bones, they could be grown in a culture and identified.

But it wouldn't be easy.

Descendants of Robison's family spearheaded efforts to exhume the boy's grave in Fillmore. The paperwork took years. Perego assembled the various experts needed to test the theory. "It was a small project on a relatively small historical question, but it was a major endeavor," he said. "It took a lot of people working together."

Perego helped at the gravesite. The headstone was recent and with a burial conducted in 1857, nobody could be sure it was in the right place. Perego would use DNA to identify the body.

After some digging, they discovered an older tombstone with the name "Proctor Hancock Robison" engraved on it. About five feet from the surface, they found bones. The skeleton was together except the skull had shifted about 1 and 1/2 feet away from the body.

The goal was to find anthrax spores in the dirt surrounding the body. They took 65 soil samples and small segments of bone from the femur, ribs and teeth.

"It was very emotional for me," Perego said. "To think about this 14-year-old boy living his life — planning to have a life like everybody else. It was terrible. All he did was to touch an infected animal. The experience for me was very emotional. This was a real person, not just a science experiment."

DNA was successfully extracted from the bone samples and compared with Robison family descendants. The DNA matched. The bones were the remains of the boy.

Other experts at the Center for Microbial Genetics and Genomics in Arizona examined the soil samples. Various tests involving heating, water, extraction and growing bacterial cultures were attempted.

Some parts of the bone fragments were also tested and even some wood from the few remaining coffin bits was tested.

None of the bacteria cultures grown from the samples were *Bacillus anthracis*.

Perego said the conditions in the soil were "less than ideal," but he hasn't given up yet.

The symptoms described from the historical records were spot on for anthrax, Perego said, but even without the physical confirmation, the diagnosis is pretty certain. "Although we didn't find what we were hoping for — and truthfully, it would have been a big surprise if we had recovered any anthrax spores after so many years — but the efforts gave us a chance to look at this closely from a medical and historical point of view," he said.

Other tests by a lab that specializes in extracting bacteria from bones are underway and may yet find physical proof.

But for now the image of the boy's skeleton stays in Perego's mind. "He was in the fetal position," he said. "He probably died in his sleep in severe pain."

After the exhumation, Perego said Proctor's bones were carefully placed in a new coffin with a white lining. The coffin was put in a cement box and sealed with a lid before being put back into the ground and covered again with earth.



New tombstone at Proctor Robison gravesite. (Raymon Carling)

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