

# Scientists act like detectives to solve a mystery about two plagues

By Los Angeles Times, adapted by Newsela Staff

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Miniature out of the Toggenburg Bible (Switzerland) of 1411. The disease is widely believed to be the plague. The location of bumps or blisters, however, is more consistent with smallpox (as the bubonic plague normally causes them only in the groin and in the armpits).

About 1,500 years ago, a disease called the Justinian Plague killed up to 50 million people. It swept across Asia, Africa and Europe. Experts say the type, or strain, of bacteria that caused the disease can no longer be found. It may be wiped out.

We will likely never see it again, says a new study. The study explores the mystery of the missing strain of bacteria. This strain jumped from rodents to humans. It killed millions of people for centuries. Then it just disappeared. New and just as deadly strains could appear just as mysteriously, the study said.

“Fortunately, we now have antibiotics that could effectively be used to treat plague,” said Dave Wagner. He helped write the study. An antibiotic is medicine used to fight off tiny organisms that cause illness.

The victims of the Justinian Plague and the Black Plague had similar physical signs. The Black Plague happened 800 years after the Justinian Plague. And it killed up to 200 million people.

Did the same type of bacteria cause both diseases?

## From Burial Ground To Laboratory

A team of scientists from around the world set out to answer that question. They took DNA from the teeth of two plague victims. DNA holds information about how you look and how your body will work. The plague victims were buried in Germany around the time of the Justinian Plague outbreak. The scientists first rebuilt the germ that killed both victims. Then they compared it with other types of bacteria from the same family. These bacteria are found worldwide in animals and humans.

What did the scientists discover? The type of bacteria that caused the Justinian Plague is from the same family of bacteria as the Black Plague. Still, the bacteria type that caused the Black Plague is different from the one that caused the Justinian Plague. In fact, the type that caused the Justinian Plague was even deadlier.

The scientists believe the type of bacteria that caused the Justinian Plague no longer exists. If it survived, scientists have yet to discover it.

So what became of this type of bacteria after it killed so many people? Scientists can only guess. Humans may have built up defenses against it. Also, many climate changes happened during the plague outbreak. It's possible those changes killed the bacteria.

There is evidence for the climate-change theory. There was unusually heavy rainfall before the Justinian Plague, the Black Plague, and another plague that came much later. Climate change marked those periods as well.