

THE BLACK DEATH

Beginning in 1347, a terrible disease wiped out a third of Europe's population. Could a killer epidemic happen today?

This 16th-century painting by Pieter Bruegel, *The Triumph of Death*, depicts the upheaval the plague caused.

For centuries, scientists have pondered a mystery: What made the Black Death, an **epidemic** that wiped out 25 million Europeans in the 14th century, so devastating? Now researchers may be close to unlocking the mystery: They have reconstructed the DNA of the bacterium that caused all that suffering.

The DNA was painstakingly extracted from millions of tiny fragments in the teeth of four victims buried in a mass grave in London, England. The researchers, from Canada and Germany, confirmed a

long-held belief that the bacterium *Yersinia pestis* was the source of the epidemic, later identified as bubonic plague. The next step, they say, is to re-create and study the microbe to understand what made the outbreak so deadly.

It Started in China

For victims of this scourge of the Middle Ages, illness started with a headache, followed by fever, chills, and pain. Lymph nodes in the armpits, neck, and groin would swell as big as apples. The swellings—called buboes (*BYOO-bohs*)—grew hard, oozed blood and pus, and eventually burst. Most of the time, death quickly followed.

What was this strange disease? When it appeared in Europe in 1347, some people called it the Black Death because of the dark blotches that appeared on victims'

skin where blood clots formed.

Scientists believe that *Y. pestis* originated in China. Strains of the disease may have traveled to Europe along the Silk Road (see map), a group of ancient trade routes that brought silk, spices, and other wonders from Asia. Sick merchants or soldiers returning from abroad to European cities such as the Italian port of Genoa may have been among the carriers.

The Black Death raced across the continent, striking cities and the countryside alike. In just two years, the plague killed a third of Europe's people. In London, half the population died.

Community life all but disappeared. Men rushed through the streets, their faces covered by handkerchiefs. Women held bouquets of flowers to their noses to mask the stench of death. Children watched

Word to Know

- **epidemic** (*n*): an outbreak of a contagious disease that spreads rapidly

in horror while loved ones died.

As families crumbled, so did the structure of European society. People lived in fear and panic.

"The fact was that one citizen avoided another, that almost no one cared for his neighbor" wrote the poet Giovanni Boccaccio, who lived through the plague as it ravaged Italy in 1348. "This disaster struck such fear into the hearts of men and women that brother abandoned brother, and very often wife abandoned husband, and—even worse, almost unbelievable—fathers and mothers [abandoned] their children."

Rituals for burying the dead were abandoned too. Corpses were tossed into mass graves or left in the streets. With so many people dying so quickly, agriculture came to a halt. Crops withered, and prices skyrocketed because of the resulting shortage of food. Law and order gave way to chaos.

Many medieval Europeans thought that God was punishing them for their sins.

"People honestly

thought it was the end of the world," says Kirsten Bos of McMaster University in Ontario, Canada, whose team is studying the DNA.

Should We Worry?

Europe was a different place after the plague, which had a few unintended benefits. For one thing, labor shortages meant higher wages for the survivors. The upheaval also opened the Europe of the Middle Ages to new ways of thinking—about art, science, and life. A period of great questioning and learning known as the Renaissance, which began in the 14th century, gradually changed the continent.

Could such a devastating epidemic strike today? *Y. pestis* is still with us. But scientists say that modern antibiotics make a global outbreak like the Black Death unlikely. As Nils Christian Stenseth of the University of Oslo in Norway told *Geotimes*, "There's no reason to suggest we'll see another Black Death."

—Mary Harvey & Suzanne McCabe



The plague probably started in China. It may have traveled along the Silk Road to Europe.

Other Killers

Here are three of history's most notorious diseases.

MALARIA

A disease possibly as old as human history, malaria is caused by parasites that are spread by bites from infected mosquitoes.

It still claims almost 1 million lives each year, mostly in Africa and Asia.



SMALLPOX

European explorers brought this deadly disease to the Americas, where it devastated the native population. British physician Edward Jenner developed a vaccine in 1796, but smallpox was not eradicated worldwide until 1980.



HIV/AIDS

AIDS is the last stage of infection by the human immunodeficiency virus (HIV), which attacks the immune system. First detected in 1983, AIDS has killed more than 25 million people. Tens of millions are now infected with HIV, with Africa the hardest hit.

