

# Bubonic Plague and the Black Death

Don Nardo



HISTORIC PANDEMICS  
AND PLAGUES



#### About the Author

Classical historian and award-winning author Don Nardo has written numerous volumes about historical, scientific, and medical topics, including *Migrant Mother* (nominated for eight best book of the year awards), *Tycho Brahe* (winner of the National Science Teaching Association's best book of the year), *Deadliest Dinosaurs*, *The History of Pandemics*, and *The History of Science*. Nardo, who also composes and arranges orchestral music, lives with his wife, Christine, in Massachusetts.

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# Important Events During the Black Death

**ca. 1331**

An outbreak of bubonic plague occurs in southwestern China and soon spreads to Mongolia and other parts of Asia.



**October 1347**

Another ship from Kaffa reaches Sicily, where the disease kills half the population.

**May 1347**

The siege of Kaffa ends and European sailors carry the plague to Constantinople, located on the Black Sea's southern rim.

1330

1345

1346

1347

**1345**

The Mongols, some of them infected with plague, lay siege to Kaffa, on the Crimean peninsula, and spread the disease to the town.

**November 1347**

The Black Death reaches France and swiftly spreads through the countryside.



# CHAPTER ONE

## The Black Death Assaults Europe

Giovanni Boccaccio and the other fourteenth-century chroniclers of the Black Death were overcome by “horror and disbelief at the number of deaths they saw around them,” writes Rosemary Horrox, the foremost modern expert on that medieval pandemic. Singling out the region that was perhaps most devastated by the disease, she points out that “nearly half the population of England died in something like 18 months.” Not every European nation suffered that badly, she adds, yet most produced enormous death tolls in the span of a mere two years. “The Black Death,” she states, was unarguably “a human disaster of appalling magnitude.”<sup>5</sup>

One reason why the bubonic plague managed to kill so many Europeans between 1347 and 1350 was because no one knew what caused it, so there was no cure. Another factor was that no one was prepared for such a massive and lethal onset of disease. For several centuries prior to the Black Death’s arrival during the 1300s, disease epidemics had been relatively few—isolated to widely separated regions—and fairly small-scale outbreaks. Among the worst of those ailments was ergotism (then called St. Anthony’s fire), caused by a fungus that infests rye and other grains.

Also prevalent in some areas was leprosy, a chronic infection that can badly disfigure the face and limbs. Still, leprosy was not very contagious. And, unlike bubonic plague, it was usually not fatal.

Another reason why the Black Death killed so many Europeans during the fourteenth century was because, at that moment in history, their numbers were larger than they had ever been. Europe's population had grown by more than 300 percent between the late 900s and the early 1300s. By the mid-1300s, therefore, the continent had at least 75 million people, constituting a lot of potential victims. Furthermore, a large proportion of them dwelled in close quarters in cities, which made the spread of any highly infectious disease inevitable. All of these factors contributed to the frighteningly high death toll during the disease's late 1340s assault.

## Where Did It Originate?

Despite the fact that Europeans of that era had no idea what caused the plague and were unprepared for it, they did manage to roughly determine its origins. Numerous writers of that era, including Gabriele de Mussis, reported that the disease came from the "East," the general European designation for the Middle East, India, and central Asia.

Modern historians have verified that hypothesis. Evidence suggests that during the 1200s and early 1300s the disease took hold in north-central Asia in a local population of marmots—small rodents similar to prairie dogs. These creatures interacted with rats, which carried the bacteria to nearby human habitations, and in about 1331 the plague erupted in an unknown number of Chinese villages and towns. According to the late, great American historian William H. McNeill, after at least several million people died, the disease moved westward along the famous trade route known as the Silk Road. That merchant highway consisted of hundreds of *caravanserais*, or trading posts. "What probably happened between 1331 and 1346," McNeill postulated in his classic book *Plagues and Peoples*, was that the Black Death "spread from

*caravanserai* to *caravanserai* across Asia and eastern Europe, and moved thence into adjacent human cities wherever they existed.”<sup>6</sup>

Supporting this thesis of relentless westward expansion is both archaeological and literary evidence of plague outbreaks along that trade corridor. During the early 1340s, for example, the disease appeared just south of the Silk Road in northern India. During the same period, it passed south of the Caspian Sea and reached into southern Russia, north of the Black Sea, claiming millions of victims along the way.

Among those victims were large numbers of Mongols who were in the midst of conquering large tracts of western Asia. Beginning in the winter of 1345, the invaders moved southward from the vast, grassy steppes lying above the Black Sea into the Crimean peninsula; there, they laid siege to the Genoese colony of Kaffa. (The Genoese, native to the independent Italian nation of Genoa, were active traders who established colonies along the Black Sea coasts.)

*One reason that the plague spread so quickly was that large numbers of Europeans lived in close quarters in towns and cities, as shown in this 1948 book illustration depicting a medieval French town.*



The Mongol besiegers decided to take advantage of the fact that the plague was killing many in their ranks by using the victims' corpses as weapons. According to de Mussy, the Mongol commander ordered the bodies

to be placed in catapults and lobbed into the city in the hope that the intolerable stench would kill everyone inside. What seemed like mountains of dead were thrown into the city, and the Christians could not hide or flee or escape from them. . . . One infected man could carry the poison to others, and infect people and places with the disease by look alone. No one knew, or could discover, a means of defense.<sup>7</sup>

## Bacterial Journeys

Finally convinced that Kaffa would shortly fall to the invaders, a number of the Genoese boarded what ships they still had and sped southward. Eventually they reached the Aegean Sea and then the greater Mediterranean Sea beyond. The escapees had no inkling that an invisible cargo of death lurked in their vessels' holds.

Indeed, beneath the humans' feet, three lesser species were already interacting in a lethal biological progression. The tiniest of the three were the plague germs, which were members of a species of bacteria now called *Yersinia pestis*. Those microbes flourished in the blood of infected rats, which constituted the second species. The third species consisted of fleas that dwelled in the rodents' fur. When the fleas bit the rats to feast on their blood, they consumed the germs infesting that fluid. Some of the infected insects later jumped onto either other rats or human hosts, and when the fleas bit those hosts, the disease's treacherous journey from rat blood to human bodies was complete.

The second crucial journey the plague bacteria undertook happened within the human host and helped to account for the

pandemic's enormous death toll. Having made it into the human bloodstream, the microscopic invaders swiftly moved to the lymph nodes in the underarms and lower abdomen. There, they rapidly formed colonies that grew into egg-shaped lumps that came to be known as *bubo*es. Calling them "early ornaments of black death," Ieuan Gethin, a popular Welsh poet, vividly described those black sores, which he saw firsthand in 1349:

Woe is me of the shilling in the arm-pit; it is seething, terrible, wherever it may come, a head that gives pain and causes a loud cry, a burden carried under the arms, a painful angry knob [that] is of the form of an apple, like the head of an onion, a small boil that spares no-one. Great is its seething, like a burning cinder, a grievous thing of an ashy color. It is an ugly eruption that comes with unseemly haste.<sup>8</sup>

**"[A plague bubo is]  
a burden carried  
under the arms, a  
painful angry knob  
[that] is of the form  
of an apple, like the  
head of an onion."**<sup>8</sup>

—Fourteenth-century  
Welsh poet Ieuan Gethin

Not long after the *bubo*es appeared, some victims saw those sores begin to shrink, and they slowly recovered. But for at least a third of those infected, the bacteria's second journey continued with a vengeance; the germs then attacked the vital organs, in particular the lungs and spleen. At that point, recovery was no longer a realistic option. The victims began bleeding from the anus and/or the skin, and death fairly quickly ensued.

## Like an Unstoppable Tsunami

Some of these alarming symptoms were already apparent among several of the passengers of the Genoese ships that passed from the Black Sea into the Aegean and Mediterranean in 1346 and 1347. Along the way, most of those vessels stopped briefly in Constantinople, the great port city situated on the Black Sea's southern rim. There, rats scurried from boat to boat, transfer-

## A Third of the Human Race Killed?

As the plague headed westward through Europe, it reached England and eventually Scotland. There, a local writer, John of Fordun, penned a tract describing the disease's onslaught in 1350:

There was a great pestilence and mortality of men in the kingdom of Scotland, and this pestilence also raged for many years before and after in various parts of the world. So great a plague has never been heard of from the beginning of the world to the present day, or been recorded in books. For this plague vented its spite so thoroughly that fully a third of the human race was killed. At God's command, moreover, the damage was done by an extraordinary and novel form of death. Those who fell sick of a kind of gross swelling of the flesh lasted for barely two days. This sickness befell people everywhere, but especially the middling and lower classes. . . . It generated such horror that children did not dare to visit their dying parents, nor parents their children, but fled for fear of contagion as if from leprosy or a serpent.

Quoted in Martha Carlin, "The Black Death in the British Isles," Department of History, University of Wisconsin-Milwaukee. <https://sites.uwm.edu/carlin>.

ring the plague germs to hundreds of ships bound for Syria, Egypt, Libya, Greece, Italy, France, and Spain. Reacting to the subsequent outbreaks in those places, a Byzantine chronicler remarked, "A plague attacked almost all the seacoasts of the world and killed most of the people."<sup>9</sup>

That writer did not exaggerate by much. The death rate from the disease in the Mediterranean's coastal regions was usually at least 30 percent and soared much higher in some areas. This incredible degree of lethality caught the eye of Baldassarre Buonaiuti, a contemporary businessman and historian native to Florence. When the disease "caught hold in a household," he wrote, "it often happened that not a single person escaped death. And it wasn't just men and women. Even sentient animals such as dogs and cats, hens, oxen, donkeys,

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