DAWN OF THE BLACK DEATH:
THE EVE OF EUROPE'S GREAT MORTALITY 1347-1351

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The Black Death was a cataclysmic depopulation event that marked a low ebb in the turbulent Late Middle Ages. The virulence of the Black Death wiped out entire towns in some cases and destabilized Europe's social, political, and economic structure. So lasting were its effects that it lives on in popular culture today, most notably in the "Ring Around the Rosie" nursery rhyme. The Mongol conquests of the 1200s and early-1300s facilitated a high volume period of transcontinental trade along the Silk Road between Europe and the East. *Yersinia pestis*, the bacillus most likely responsible for the Black Death, traveled through rat colonies on the steppes via fleas to unsuspecting merchants and travelers on the Silk Road. Periodic famine, nearly constant warfare, and economic problems battered Europe before the plague's arrival, and deplorable living conditions allowed an abundant population of rats to sustain the Black Death during its westward spread. Europe was ripe for catastrophe, and the Black Death exploited the triumphs and tragedies of the Late Middle Ages to deliver one of the worst catastrophes in human history.

Guy de Chauliac, a physician and surgeon in fourteenth-century France, wrote about the Black Death, "It began in the East, and like shooting arrows it passed through us on its way west."[1] His statement sums up the ferociousness and the rapidity with which the pestilence spread. However, although he was a physician, Guy and others who lived through the Black Death had very little understanding of what afflicted them or the origin of the sickness. His medical training helped him identify the symptoms, but what it was that afflicted him remained a mystery. Many believed that the Black Death was God's punishment for the sins of humanity. Others blamed the conjunction of the planets or contaminated air from earthquakes or Jews. Guy

[1] Gui de Chauliac, *Great Surgery*, in *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*, ed. John Aberth (Boston: Bedford/St. Martin's, 2005), 64.

acknowledged that some Europeans believed that Jews had poisoned the air and/or the water supply, making the Jews a target for retribution.[2] Little did Guy and other chroniclers of the time know that the Black Death was in the belly of the fleas that fed on the rats in their homes and in the lungs of their coughing relatives and neighbors.

The first recorded use of the term "Black Death" ("swarta döden") came from Sweden in 1555.[3] The name may have been come from a mythical black comet or from images of personified Pestilence on a black horse. However, historian Philip Ziegler contends that the "superior dreadfulness" of the disease is the most likely derivation of the term.[4] After all, the color black has often been associated with terror and dread, perhaps stemming from humanity's instinctive fear of the dark, eg. black magic, black cats, villainous cowboys with black hats, and Darth Vader. The terms "Black Death" and "Great Mortality" are used by historians today to identify the particular outbreak of disease that ravaged Europe between 1347-1351. This particular outbreak was the most virulent of those that struck in the Late Middle Ages, killing perhaps 30-50 percent of the total European population and much higher percentages in some communities.[5] While disease outbreaks were fairly commonplace during the Late Middle Ages, this particular outbreak was uniquely dreadful, garnering it the ominous name "Black Death."

Historians, archaeologists, dentists, clinical microbiologists, DNA experts, and other specialists have cooperated to identify the Black Death as the "plague" bacterium *Yersinia pestis*,

[2] Ibid.
[3] Philip Ziegler, *The Black Death* (New York: John Day Co., 1969), 17.
[4] Ibid., 18.
[5] Sharon N. DeWitte, "Mortality Risk and Survival in the Aftermath of the Medieval Black Death," PLoS *One* 9, no. 5 (2014): 1, *ProQuest*, http://search.proquest.com.ezproxy1.apus.edu/docview/1522140671/fulltext?accountid=8289 (accessed November 28, 2015).

which can manifest in humans as bubonic, septicemic, and pneumonic forms of plague.[6] Recent DNA studies link the Black Death with the sixth-century Justinianic Plague that devastated the Eastern Roman Empire under Emperor Justinian. In both the Justinianic Plague and the Black Death, the origin of the *Yersinia pestis* can be traced to northwestern China, probably the Xinjiang region.[7] Skeletal remains from a sixth-century cemetery at Ascheim in Bavaria, Germany[8] and from the fourteenth-century Black Death cemetery at East Smithfield in London[9] both indicate the presence of *Yersinia pestis*, creating a link between the two devastating plague outbreaks that occurred near the beginning and the end of the Middle Ages. However, it is worth noting that DNA evidence alone is inconclusive. It merely indicates the presence of whatever disease was present in the studied sample. Other diseases were also present in the samples. This indicates that there may have been a number of diseases, in addition to *Yersinia pestis*, that joined forces in an unholy alliance to create the epidemiological disaster we now call the Black Death.[10] Other diseases common during the Middle Ages, eg. anthrax, influenza, typhus, hemorrhagic fever, Q fever, and tularemia, may also have been at work during the Black Death, exacerbating the problems caused by *Yersinia pestis* and creating a "plague of plagues."[11]

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[6] John Theilmann and Frances Cate, "A Plague of Plagues: The Problem of Plague Diagnosis in Medieval England," *The Journal of Interdisciplinary History* 37, no. 3 (Winter, 2007): 371, http://www.jstor.org/stable/4139605 (accessed October 29, 2015).

[7] Michaela Harbeck et al., "Yersinia pestis DNA from Skeletal Remains from the 6th Century AD Reveals Insights into Justinianic Plague," *PLoS Pathogens* 9, no. 5 (May 2, 2013): 5, http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1003349 (accessed October 28, 2015).

[8] David M. Wagner et al., "Yersinia pestis and the Plague of Justinian 541-543 AD: A Genomic Analysis," *The Lancet Infectious Diseases* 14, no. 4 (April, 2014): 323, http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(13)70323-2/fulltext (accessed October 28, 2015).

[9] E. J. Kendall et al., "Mobility, Mortality, and the Middle Ages: Identification of Migrant Individuals in a 14th Century Black Death Cemetery Population," *American Journal of Physical Anthropology* 150, no. 2 (2013): 211, *MEDLINE Complete*, EBSCO*host* (accessed October 28, 2015).

[10] Theilmann and Cate, 389.

[11] Ibid., 390.

Because the most recent DNA studies identify *Yersinia pestis* as the primary culprit of the Black Death, it is apropos here to focus on its attributes. *Yersinia pestis* bacteria prefers the blood of rats. Rat fleas, such as *Xenopsylla cheopis*, feed on the tainted blood and regurgitate it into other victims.[12] These other victims, typically other rats but sometimes humans or other animals, either die from the disease or become carriers of it. Human fleas, *Pulex irritans*, can also carry *Yersinia pestis* in the same way, facilitating the spread of the disease from rats to humans and from humans to other humans.[13] The most common form of *Yersinia pestis* is bubonic plague, so named from the growths or "buboes" that form in the armpits and groins of its victims. This most common form of plague, which resides in the lymphatic system, is also to least lethal. Between 60-90 percent of the victims of bubonic plague during the Black Death died from the disease due to the lack of adequate medical care, such as modern antibiotics.[14]

The two other forms of *Yersinia pestis*, known as septicemic and pneumonic plague, are both rarer and deadlier than bubonic plague. As with bubonic plague, septicemic plague is also spread by fleas and the tainted blood they regurgitate into their victims. Septicemic plague causes the skin and other tissues to turn black and die, especially on fingers, toes, and the nose. Septicemic plague can occur as the first symptom of plague, or may develop from untreated bubonic plague.[15] Pneumonic plague resides in the lungs, which allows it to spread from victim to victim through the air. This form of plague is the most serious of the three because of its extremely high death rate and because it can be spread from person to person without the assistance of fleas. Because pneumonic plague shows no symptoms during the one to three-day

[12] Ibid., 377.
[13] Ibid.
[14] John Aberth, *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents* (Boston: Bedford/St. Martin's, 2005), 23.
[15] Centers for Disease Control and Prevention, "Symptoms," Plague, http://www.cdc.gov/plague/symptoms/index.html (accessed December 23, 2015).

incubation period, people felt well enough to travel, further spreading the disease.[16] During the Black Death, pneumonic plague killed nearly 100 percent of its victims in two to three days.[17]

From its suspected origin in China, *Yersinia pestis* spread throughout the Old World in the bloodstream of infected rats and in the bellies of fleas who hitchhiked along with land caravans and on merchant sailing vessels. Before it left China, however, it may have played a major role in the decimation of the China's population, which was reduced by half between 1200-1393.[18] Certainly other factors, such as the Mongol conquests, may certainly have played a role in China's depopulation, but the timing of the Black Death makes it likely that disease played a role as well. As for the Mongols, the fall of the Yuan Dynasty in China and the fizzling out of the Mongol conquests across Asia occurred with striking coincidence to the timing of the Black Death's outbreak. The Mongol Empire began its fragmentation long before the arrival of the Black Death; however, the Black Death may have hastened its demise by preventing the Mongols from exerting effective control over their domains, allowing rebellion and fragmentation.[19] One piece of evidence to support this possibility comes from the writings of Italian chronicler Gabriele de Mussis. He wrote about the first plague contact between Asia and Europe, which involved a Mongol siege of Genoese merchants at Caffa (Feodosia) in the Crimea in 1346. According to Mussis's account, infected Mongol soldiers catapulted their fallen comrades over Caffa's city walls, infecting the residents inside.[20] If true, Mussis's story provides some evidence that the Mongols felt the impact of the Black Death, probably with the same devastating effects Europe endured.

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[16] Theilmann and Cate, 383.
[17] Aberth, 23.
[18] William H. McNeill, *Plagues and Peoples* (New York: Anchor Books, 1976), 168.
[19] Janet L. Abu-Lughod, *Before European Hegemony: The World System A.D. 1250-1350* (Oxford: Oxford University Press, 1989), 183.
[20] Aberth, 13-14.

Caffa may have served as a launching point for the Black Death's entry into Europe and Northern Africa. Merchants from Genoa and other Italian city-states used agents in Caffa, Tana (Tanais), and other cities on the Crimean Peninsula to facilitate trade in grain, alum, slaves, animal furs, and other goods.[21] If the Mongols did indeed spread the Black Death to the Genoese at Caffa, it was thus inevitable that such accomplished merchants would spread the disease far and wide very quickly. The Florentine chronicler Giovanni Villani blamed the Genoese for spreading the disease. According to Villani, eight Genoese galleys left the Black Sea for Genoa, but only four arrived. These galleys were full of sick, dying, or dead sailors. He wrote, "All of those who reached Genoa were nearly dead, and upon their arrival they corrupted the air that they breathed, so much that whoever offered them refuge would soon die."[22] Villani, who died of the Black Death in 1348, also noted that the pestilence quickly spread to Mesopotamia, Syria, Cyprus, Sicily, Corsica, Bologna, Avignon, and numerous other places throughout Europe, Asia, and Africa.

Almost immediately, the Byzantine Empire felt the wrath of the Black Death. As it entered Constantinople in 1347, massive depopulation pounded an empire already reeling from several years of civil war. This played into the hands of Constantinople's enemies. The Byzantine Empire swiftly lost territory in western Greece to the Serbian conqueror Stefan Dušan who took advantage of the "anarchy and disruption" caused by the Black Death.[23] The Muslim chronicler Abū Ḥafs 'Umar ibn al-Wardī wrote about the Black Death's arrival in Palestine in 1348, as well as descriptions of the plague's attack on Egypt, India, Syria, Lebanon, and other

[21] Ibid.
[22] Giovanni Villani, *Chronicle*, in *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*, ed. John Aberth (Boston: Bedford/St. Martin's, 2005), 20.
[23] Costas Tsiamis et al., "Epidemic Waves of the Black Death in the Byzantine Empire (1347-1453 AD)," *Le Infezioni In Medicina: Rivista Periodica Di Eziologia, Epidemiologia, Diagnostica, Clinica E Terapia Delle Patologie Infettive* 19, no. 3 (2011): 195, *MEDLINE Complete*, EBSCO*host* (accessed October 28, 2015).

areas under Muslim control. In an account similar to those of European chroniclers, al-Wardī wrote, "How amazingly does it pursue the people of each house! One of them spits blood, and everyone in the household is certain of death. It brings the entire family to their graves after two or three nights."[24]

Some historians are quick to blame the Mongols and Italian merchants for spreading the Black Death to Europe. Certainly, Mussis's account of the Mongol siege of Genoese merchants at Caffa and Villani's account of the Genoese plague ships add fuel to the fire in that regard. However, it is important to keep in mind that the Mongol conquests placed Mongols in the Crimea well over a century before the siege of Caffa in 1346. In addition, transcontinental trade that stretched from the Iberian Peninsula to China had been a feature of the Silk Road as far back as the Roman Empire. According to historian William H. McNeill, any "epidemiological adjustments" would have worked themselves out centuries before the Black Death.[25] Marco Polo, a prime example of Silk Road transcontinental trade, made his historic journey from Italy to China and back again between the years 1271-1293, publishing his book *The Travels of Marco Polo* in c. 1300, nearly fifty years before the arrival of the Black Death in Europe. Traffic along the Silk Road certainly intensified during the *Pax Mongolica,* the period of stabilization that followed the Mongol conquests, but the Silk Road was quite active long before the arrival of the Black Death. Clearly, something changed after the turn of the fourteenth century, upsetting the status quo.

According to many researchers, the origin of the Black Death may be found in the disruption of colonies of wild rodents on the steppes. According to McNeill, the northward

[24] Abū Ḥafs 'Umar ibn al-Wardī, *Essay on the Report of the Pestilence*, in *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*, ed. John Aberth (Boston: Bedford/St. Martin's, 2005), 18.
[25] McNeill, 132.

extension of caravan trade brought wild rodents, primarily rats, in contact with diseases such as *Yersinia pestis*.[26] While certainly possible, the DNA studies noted above (Harbeck et al., 2013 and Wagner et al., 2014) indicate that the rodent populations may have harbored the bacillus long before the Late Middle Ages. The studies indicate that *Yersinia pestis* from infected rodents in the steppe lands of China likely caused the Justinianic Plague nearly 700 years before the Black Death. If true, the rats must have sustained the disease within their own colonies over those centuries, indicating that the disease was not virulent enough at that time to kill off its host rat population. Perhaps the disease mutated into a more virulent form after the turn of the fourteenth century. Another possibility is that the rats moved from remote locations of the steppes to more heavily traveled regions due to overpopulation, environmental disruptions, or climactic disturbances such as floods or droughts.[27] The transition from the Medieval Warm Period to the Little Ice Age may have exacerbated such climactic events.[28] Earthquakes or other seismic anomalies may also have been to blame.[29] Whatever the reason, caravan travelers became the perfect vehicle for infected rats and their fleas to travel westward with devastating consequences.

Rats do not travel very far during their lifetime, so their fleas played a crucial role in the rapid spread of the disease. The human flea, *Pulex irritans*, does not need a rat as an intermediary to transmit diseases to humans. Thus, stowaway fleas could have helped spread the disease from one group of travelers to another or from one rat colony to another. The rat flea, *Xenopsylla cheopis*, can live for a month without a rat host, allowing an infected flea to travel

[26] McNeill, 134.
[27] Aberth, 26.
[28] Kendall et al., 211.
[29] Michael McCormick, "Rats, Communications, and Plague: Toward an Ecological History," *The Journal of Interdisciplinary History* 34, no. 1 (Summer, 2003): 19, http://www.jstor.org/stable/3656705 (accessed October 29, 2015).

hundreds of miles with a cargo of grain or in a bale of cloth.[30] This could allow the Black Death to jump from rat colony to rat colony before it could die out by killing off all its potential hosts. Thus, the rat colony infrastructure and the bustling caravan and maritime trade on the Silk Road combined with *Yersinia pestis* to allow the Black Death to spread for Asia to Europe like a raging wildfire.[31]

Before the Genoese plague ships returned home from Caffa, carrying their cargo of plague-infected rats and fleas, Europe was already vulnerable to disease due to its major rat problem.[32] As historian Michael McCormick notes, even with advanced rat-control programs today, modern large cities are "rat paradises."[33] Certainly, European cities of the Late Middle Ages were far worse with regard to their rat populations, as well as to their susceptibility to rat flea disease outbreaks. During times of prosperity, such as during the High Middle Ages, sanitation was generally good and rat populations were low.[34] The Late Middle Ages was a more turbulent time, which led to larger rat populations. Endemic warfare, such as the Hundred Years' War and various regional conflicts throughout Europe, led to sieges that kept residents cooped up in their cities for long periods of time. As Ziegler points out, few places are so vulnerable to disease as a besieged city.[35] As a means of preparation to withstand an impending siege, city residents would have engaged in food hoarding and the hasty construction of communal food storage facilities.[36] In addition, sanitation was understandably poor during times of siege, creating large amounts of waste and trash. The food stores and trash piles of besieged cities provided golden opportunities for rats to multiply.

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[30] Aberth, 27.
[31] McCormick, 14.
[32] Ziegler, 27.
[33] McCormick, 16.
[34] Ibid., 17.
[35] Ziegler, 16.
[36] McCormick, 19.

Even in cities not under siege, the standard of living was poor during the Late Middle Ages, encouraging the growth of massive rat populations. Some historians, such as Ziegler and McCormick, contend that Europe was uncomfortably overcrowded following the "golden age" boom of the High Middle Ages.[37] Towns with a few hundred residents had grown into cities of several thousand. Population increase led to the clearing of forests and the loss of the rat's natural predators, such as owls, foxes, and weasels.[38] According to Ziegler, "Put in the simplest terms, Europe had outgrown its strength and was now suffering the physical and mental malaise which inevitably follows so intemperate a progress."[39] This is not to say, however, that Ziegler blames the Black Death's spread on an overcrowded Europe. On the contrary, Ziegler notes that population decline had already begun before the Black Death's arrival.[40] The Great Famine of 1315-1318, as well as less severe famines that struck Europe during the thirteenth century, decreased the population of the continent. These famines were so severe that some Europeans were forced to eat cats and dogs, and, in some cases, cannibalize each other.[41] According to E. J. Kendall et al., as many as 10-25 percent of Europe's population fell to famine in the early-1300s, encouraging further urbanization as people sought the greater financial and charitable resources available in cities.[42] Certainly, such extreme episodes of famine would have decreased the rat population along with the human population. However, rats breed much more quickly than humans (a 22-day gestation period for black rats, compared to approximately 270 days for humans), so rats were better able than humans to take advantage of the reprieves from famine to

[37] Ziegler, 30-31.
[38] McCormick, 22.
[39] Ziegler, 33.
[40] Ibid.
[41] Ibid., 32.
[42] Kendall et al., 211.

rebuild their colonies. The periods of destabilization caused by famine greatly harmed the human population, yet it helped the rats.

In addition to famine, Europe endured additional problems before the arrival of the Black Death. Economic decline and political factionalism, for example, gripped many Italian city-states in the early 1300s. Public works expenditures and the tax revenue that supported them peaked in Italy during the 1330s and 1340s, creating substantial public debt. Additionally, Florentine banking houses controlled by the Peruzzi and Bardi families went bankrupt in the mid-1340s.[43] Edward III of England's massive loan default may have directly caused the bankruptcies, but the timing suggests that the Black Death's impending arrival may also have weakened the banks to the point that they could not survive the loan default. Many Italian merchants no doubt experienced a loss of business as the Black Death moved westward from China, ravaging the customers of Italian merchants along the way.[44] The Italian economy, and the rest of the European economy, may have felt the wrath of the Black Death before the plague's physical arrival. These economic problems combined with Europe's other major problems, namely periodic famine and endemic warfare, to further degrade living conditions and allow rat populations to increase.

According to historian John Aberth, very few medieval chroniclers mentioned rats in their accounts of the plague. He cites Nicephorus Gregoras, Giovanni Villani, and Fritsche Closener as three examples of chroniclers who mentioned rats.[45] Since the history of the Black Death is so closely intertwined with rats, many historians have questioned why so few medieval chroniclers wrote about rats.[46] Perhaps, as John Theilmann and Frances Cate contend, rats may

[43] Abu-Lughod, 127.
[44] Ibid., 174-175.
[45] Aberth, 26.
[46] For examples of these historians see Ziegler, 27; McCormick, 4; Theilmann and Cate, 388.

not have been observed as having a connection with the spread of the disease. Human fleas (independent of rats) can spread bubonic plague, and pneumonic plague is spread through the air. Both of these methods of transmission would have led people to blame something other than rats, such as contaminated air, for the spread of the Black Death.[47] Discussing the 2,200-mile journey from Caffa to Genoa, Aberth writes that the bacillus could easily have survived the long journey, despite killing off its hosts. He states that rat fleas can survive up to eighty days without a host, and *Yersinia pestis* itself can survive up to five weeks in the fleas' feces.[48] Therefore, it is not surprising that medieval chroniclers ignored rats in their accounts of the Black Death.

Another explanation for the lack of mention of rats in medieval chronicles is that rats were so commonplace that they probably did not merit mention. Deleterious living conditions made rats ubiquitous, as routine as pesky houseflies today. Even as rats died off in droves during the Black Death's assault, their bodies littering streets and buildings, chroniclers would have paid little attention to them compared to the dead human bodies that also littered the same streets and buildings.[49] The presence of dead and dying rats would have been a rather low-priority news event under the circumstances. Even long after the Black Death, historians and archaeologists neglected to focus on rats, making it difficult to understand the spread of the pestilence. Some historians questioned whether Europe actually had a rat problem. McCormick contends that the rats were present all along, but historians and archaeologists were simply not looking for them. Archaeologists today, using sieving and meshing techniques, find that the tiny rat bones from medieval rat populations are virtually everywhere.[50]

[47] Theilmann and Cate, 388.
[48] Aberth, 13.
[49] Ziegler, 27.
[50] McCormick, 6.

The same conditions that helped rat populations in Europe thrive caused great physiological and psychological stress to Europeans at the dawn of the Black Death. According to biological anthropologist Sharon DeWitte, Europeans who were older or had previous physiological stressors had a greater risk of dying from the Black Death than younger and healthier people.[51] The number and severity of the stressors that Europeans faced before the Black Death's arrival may help partially explain the rapid spread of the pestilence and its high rate of mortality compared to previous outbreaks. In addition, poor medical knowledge and a lack of understanding about the plague's biology often placed blame for the pestilence on contaminated air, poisoned water, Jews, or the wrath of God. In such circumstances, doctors and clerics spread the Black Death to their own friends and family members after attempting to care for or minister to infected patients. According to Joseph Jean De Smet's *Breve Chronicon*, "Anyone who is infected by it dies, all who see him in his sickness, or visit him, or do any business with him, or even carry him to the grave, quickly follow him thither, and there is no known means of protection."[52] Fear and guilt gripped Europe at the dawn of the Black Death. According to Ziegler, "Lechery, avarice, the decadence of the church, the irreverence of the knightly class, the greed of kings, the drunkenness of the peasants; each vice was condemned according to the prejudices of the preacher and presented as the last straw which had broken the back of God's patience."[53] Stress in Europe may have been high before the Black Death's arrival, but it understandably skyrocketed at the dawn of the Black Death.

The calamities and stresses Europeans faced did not cause all of them to lock themselves away to ride out their troubles. On the contrary, many Europeans at the dawn of the Black Death

[51] DeWitte, 1.
[52] Ziegler, 22.
[53] Ibid., 36.

were mobile, perhaps assisting the plague in its spread. Strontium and oxygen isotope samples taken from victims at London's East Smithfield plague cemetery show evidence that merchants were not the only mobile travelers leading up to the outbreak of the Black Death. Contradicting conventional belief about the limited travel habits of medieval people, the data indicates that trips of ten to twenty miles were commonplace for peasants.[54] Such movement set the stage for the Black Death to spread well beyond the major trade routes, enabling it to penetrate into remote locations with small populations. Little Red Riding Hood's trip through the woods to Grandma's house illustrates just such a trip. The Black Death in the belly of a flea nestled in her hood or in the bacillus in the young girl's lungs could easily spread to Grandma, the woodsman, and the wolf. The woodsman would no doubt take the disease home to his own family, spreading the disease further. Compounding the problem of mobility as a means of disease transmission, many chose to flee into the countryside as the pestilence arrived in an effort to avoid infection, only to spread it to those who might not have encountered the disease otherwise.[55] With omnipresent rats and fleas, a disease that could be spread through the air as well as by flea bite, little or no understanding of how the disease spread, and frequent travel, it is no surprise that the Black Death spread so quickly throughout Europe.

Thanks to the Mongols and the *Pax Mongolica*, a high volume of transcontinental trade and travel linked Europe and China. *Yersinia pestis* spread from rat fleas to travelers along the Silk Road, allowing the disease to spread from person to person and from rat colony to rat colony. The disease had adequate hosts to spread to Caffa on the Black Sea and to Constantinople, where it quickly attacked Europe at multiple locations in quick succession. Europeans were sitting ducks for the plague because of the poor living conditions that gripped

[54] Kendall et al., 211.
[55] Ibid.

the continent in the early-1300s. Periodic famine, nearly constant warfare, and economic problems left Europe vulnerable. According to L. A. J. Michon's *Documents Inédits sur la Grande Peste de 1348*, the pestilence killed more people than previous outbreaks of disease "because of the conditions of suffering and servitude in which it surprised its victims."[56] Many Europeans lived as serfs under oppressive lords or as peasants under oppressive kings, creating immense physiological and psychological stressors. The lingering ramifications of the Crusades, the tragedies of the Hundred Years' War, the violent rivalries between wealthy city-states, and various other regional and local conflicts also created great stress and deteriorated living conditions. Famines caused malnutrition and death, heaping additional woe on Europeans. Meanwhile, rats multiplied allowed infection to spread. At the dawn of the Black Death, Europeans struggled to weather such a perfect storm of miseries. The coup de grâce came in the form of a disease that wiped out at least one-third of the continent's population, at least twenty million people.

Europeans believed they felt the wrath of God in the Black Death, but they also could take comfort in a powerful Church that could provide stability and solace in those turbulent times. Europe would survive the Black Death, and it would rise triumphantly out of the ashes. Innovations in art and architecture, advances in literature, new medicines and medical techniques, and improved technology helped Europe rebound. Some locations rebounded more quickly than others, but the worst was over, and those who survived sought out whatever opportunities existed for them in post-Black Death Europe. The balance of power between commoners, nobles, and clergy was shaken. In some cases, the balance was forever upset and the Middle Ages came to a swift end. In other cases, changes were more fleeting, prolonging the

[56] Ziegler, 30.

status quo. Through it all, the most important aspects of European civilization survived the ravages of the Black Death, helping to pave the way for what would eventually become today's Europe.

Bibliography

Aberth, John. *The Black Death: The Great Mortality of 1348-1350: A Brief History with Documents*. Boston: Bedford/St. Martin's, 2005.

Abu-Lughod, Janet L. *Before European Hegemony: The World System A.D. 1250-1350*. Oxford: Oxford University Press, 1989.

Centers for Disease Control and Prevention. "Symptoms." Plague. http://www.cdc.gov/plague/symptoms/index.html (accessed December 23, 2015).

DeWitte, Sharon N. "Mortality Risk and Survival in the Aftermath of the Medieval Black Death." PLoS *One* 9, no. 5 (2014): 1-8. *ProQuest*. http://search.proquest.com.ezproxy1.apus.edu/docview/1522140671/fulltext?accountid=8289 (accessed October 28, 2015).

Harbeck, Michaela, Lisa Seifert, Stephanie Hänsch, David M. Wagner, Dawn Birdsell, Katy L. Parise, Ingrid Wiechmann, Gisela Grupe, Astrid Thomas, Paul Keim, Lothar Zöller, Barbara Bramanti, Julia M. Riehm, Holger C. Scholz. "Yersinia pestis DNA from Skeletal Remains from the 6th Century AD Reveals Insights into Justinianic Plague." *PLoS Pathogens* 9, no. 5 (May 2, 2013): 1-8. http://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1003349 (accessed October 28, 2015).

Kendall, E. J., J. Montgomery, J. A. Evans, C. Stantis, and V. Mueller. "Mobility, Mortality, and the Middle Ages: Identification of Migrant Individuals in a 14th Century Black Death Cemetery Population." *American Journal of Physical Anthropology* 150, no. 2 (2013): 210-222. *MEDLINE Complete*, EBSCO*host* (accessed October 28, 2015).

McCormick, Michael. "Rats, Communications, and Plague: Toward an Ecological History." *The Journal of Interdisciplinary History* 34, no. 1 (Summer, 2003): 1–25. http://www.jstor.org/stable/3656705 (accessed October 29, 2015).

McNeill, William H. *Plagues and Peoples*. New York: Anchor Books, 1976.

Theilmann, John and Frances Cate. "A Plague of Plagues: The Problem of Plague Diagnosis in Medieval England." *The Journal of Interdisciplinary History* 37, no. 3 (Winter, 2007): 371-393. http://www.jstor.org/stable/4139605 (accessed October 29, 2015).

Tsiamis, Costas, Effie Poulakou-Rebelakou, Athanassios Tsakris, and Eleni Petridou. "Epidemic Waves of the Black Death in the Byzantine Empire (1347-1453 AD)." *Le Infezioni In Medicina: Rivista Periodica Di Eziologia, Epidemiologia, Diagnostica, Clinica E Terapia Delle Patologie Infettive* 19, no. 3 (2011): 194-201. *MEDLINE Complete*, EBSCO*host* (accessed October 28, 2015).

Wagner, David M., Jennifer Klunk, Michaela Harbeck, Alison Devault, Nicholas Waglechner, Jason W. Sahl, Jacob Enk, Dawn N. Birdsell, Melanie Kuch, Candice Lumibao, Debi Poinar, Talima Pearson, Mathieu Fourment, Brian Golding, Julia M. Riehm, David J. D. Earn, Sharon DeWitte, Jean-Marie Rouillard, Gisela Grupe, Ingrid Wiechmann, James B. Bliska, Paul S. Keim, Holger C. Scholz, Edward C. Holmes, Hendrik Poinar. "Yersinia pestis and the Plague of Justinian 541-543 AD: A Genomic Analysis." *The Lancet Infectious Diseases* 14, no. 4 (April, 2014): 319-326. http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(13)70323-2/fulltext (accessed October 28, 2015).

Ziegler, Philip. *The Black Death*. New York: John Day Co., 1969.