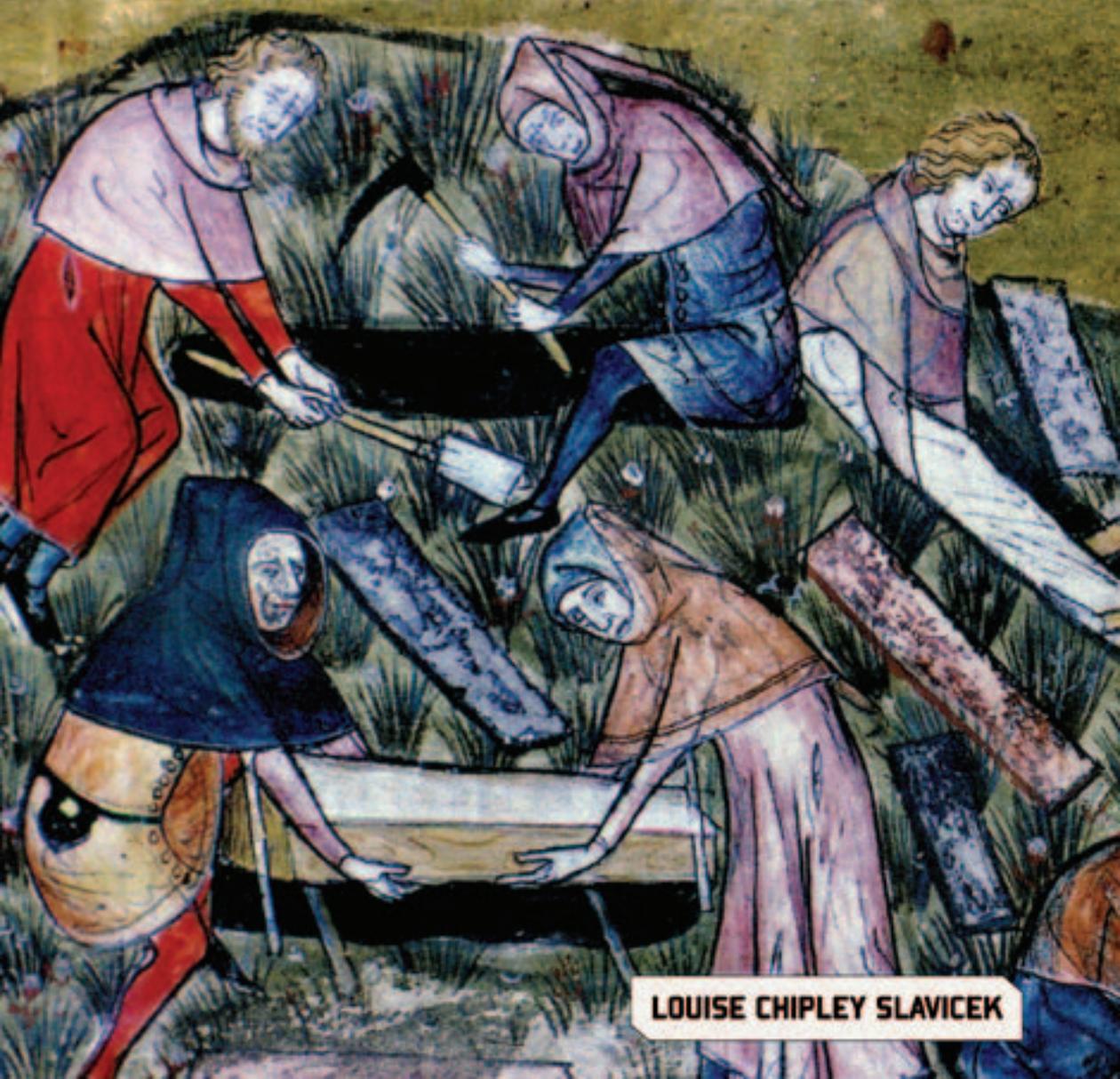


GREAT HISTORIC DISASTERS

THE BLACK DEATH



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The Path of the Black Death

The exact point of origin of the Black Death has been a matter of debate among historians and scientists for years. Among the places that have been suggested by scholars over the centuries are China, India, and southern Russia. The most recent research, however, points to the remote steppes, or arid grasslands, of central Asia as the source of the disastrous pandemic. Located to the east of the Caspian Sea, a large saltwater lake that separates southeastern Europe from southwestern Asia, the central Asiatic steppes extend through the present-day countries of Turkmenistan, Uzbekistan, Kazakhstan, and Kyrgyzstan.

THE STEPPES OF CENTRAL ASIA: A VAST PLAGUE RESERVOIR

Scientists have identified the vast grasslands of central Asia as one of the world's major plague reservoirs. That means that *Y. pestis*, the bacillus that causes bubonic, pneumonic, and septicemic plague, occurs naturally within the region's large wild rodent population, including among the tarabagan. The tarabagan is a burrowing, squirrel-like rodent that happens to

be a favorite host of the plague-carrying oriental rat flea, or *X. cheopis*. Although it has become a relatively rare disease in modern times, even today people occasionally catch bubonic plague in the central Asiatic steppes.

Assuming that central Asia was indeed the cradle of the pandemic that devastated medieval Europe, just when and how the plague leapt from the local rodent population and their flea parasites to the region's human population remains a mystery. Although there were occasional flare-ups of the disease in East Asia over the centuries, Asia and Europe had been spared major outbreaks of bubonic plague since the 500s, when the Plague of Justinian swept through the Middle East and the Mediterranean area. Scholars speculate that a significant environmental disturbance—possibly an earthquake or severe drought—occurred during the early 1300s that destroyed rodent food supplies. In the wake of this natural calamity, scientists believe, hordes of *Y. pestis*-carrying rodents fled their traditional habitat and migrated toward central Asia's human communities, where food—and colonies of black or house rats (*R. rattus*) ripe for infection—was plentiful.

To date, several ancient gravestones are the only archaeological evidence linking the bubonic plague with the steppe's human inhabitants during the years leading up to the Black Death. Archaeologists discovered the simple stone markers near Issyk Kul Lake in present-day Kyrgyzstan, close to a known plague reservoir. Like numerous other medieval headstones in the area, the gravestones are inscribed with the dates 1338 and 1339. Clearly, some catastrophe must have struck Issyk Kul during those years, less than a decade before the Black Death appeared in Europe. According to the three gravestones from 1338 and 1339 that provide a cause of death, that catastrophe was a severe and highly contagious disease, an illness that many historians assume was the bubonic plague. "This is the grave of Kutluk," reads one of the markers. "He

died of the plague [also translated as “pestilence”] with his wife Magnu-Kelka.”

THE PLAGUE MOVES OUT OF CENTRAL ASIA

By the late 1330s and early 1340s, the pandemic that would later come to be known as the Black Death had begun to trickle out of central Asia, scholars believe. It seems to have headed eastward toward China first, probably by means of the Silk Road, the famous network of trade routes that once linked



Bubonic plague is believed to have originated in Central Asia, a region where the bacterium for the illness is thought to occur naturally in the rodents who inhabit the area. After migrating east, these rodents and their fleas passed the plague to the black rat (*above*), whose close proximity to people resulted in human infections.

the Mediterranean region and central Asia to the Far East. From China, the plague appears to have moved southward and westward on merchant vessels to India. Bacteria-carrying black rats were able to transport the plague for hundreds of miles by stowing away on merchant ships, which the rodents did in such large numbers during the Middle Ages that they were given the nickname of “ship rats.” The oriental rat fleas that pass the *Y. pestis* bacillus directly to humans through bites were also capable of conveying the plague over vast distances. Able to survive for six weeks without a host, the tiny parasites are thought to have traveled hundreds of miles in cloth, grain, and other trade items commonly carried on medieval ships and overland caravans.

By the mid-1340s, the plague was journeying westward as well as eastward out of the steppes, moving relentlessly toward the Middle East and southeastern Europe by land and sea. Once again, merchants—and the infected rats and fleas that they unwittingly carried with them—were probably the chief transporters of the plague from its central Asian point of origin. In the case of the bubonic plague’s highly lethal relation, the pneumonic plague, infected traders traveling by overland routes could transmit the disease directly to people they encountered on the way, who in turn spread the illness to their own families and communities.

In 1346, a reliable Russian source placed the plague on the western side of the Caspian Sea. According to the eyewitness, the deadly disease attacked several cities and towns bordering the large saltwater lake, including Sarai, near the modern-day Russian city of Volgograd. Sarai was not only a busy trading center but also the capital city of the Golden Horde, a Mongol group who ruled Russia for more than two centuries during the Middle Ages. Natives of the central Asiatic steppes, the Mongols were exceptionally accomplished horsemen and warriors. Under the leadership of the famous Genghis (or

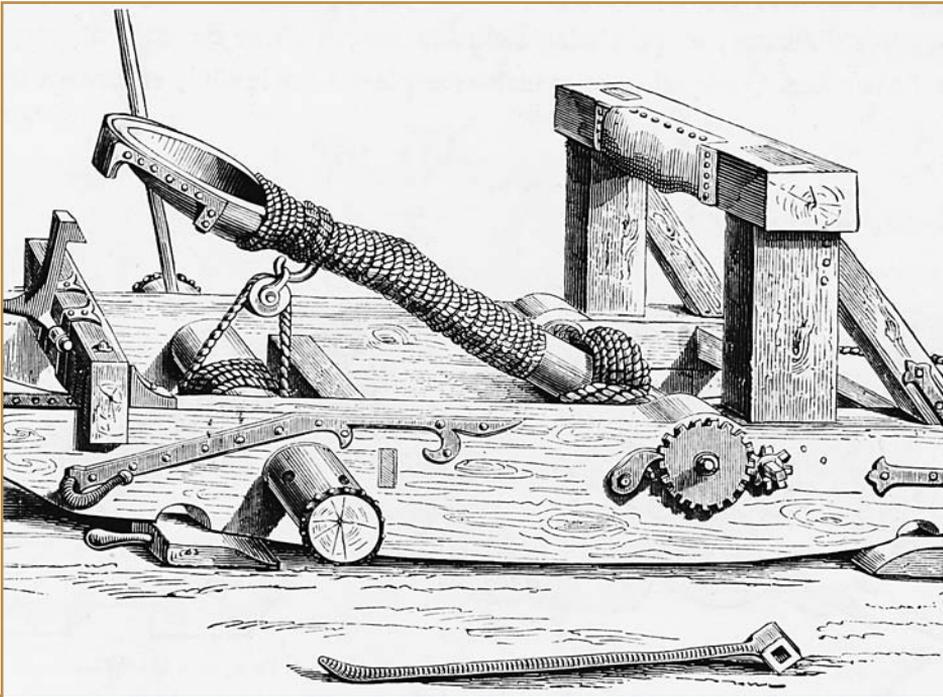
Chingis) Khan, they founded a vast transcontinental empire during the thirteenth century. By the end of the 1200s, Mongol territories stretched all the way from China in the east to Hungary in the west. As it turned out, Russia's Mongol occupiers were to play a vital role in bringing the Black Death into the heart of Europe.

THE MONGOLS AND THE PLAGUE

Just three years before the plague reached Sarai, the Mongol army began a siege of the Italian-controlled Black Sea port of Kaffa (also spelled Caffa) on the Crimean Peninsula. Technically, the Golden Horde ruled all of the Crimea, including Kaffa, today the Ukrainian city of Feodosiya. Nonetheless, eager to encourage trade within their far-flung empire, the Mongols permitted merchants from the great Italian commercial center of Genoa to take charge of the busy port city.

Relations between the Genoese traders and their Mongol hosts were frequently strained, chiefly because of religious differences: The Italians were staunch Catholics, whereas the Mongols had enthusiastically adopted the Islamic faith during the 1200s. In 1343, decades of Genoese-Mongol tension in southern Russia finally erupted into violence. Several Italian merchants got into a bloody brawl with local Muslims in the Crimean town of Tana, and one Muslim was killed. Determined to defend the honor of Islam, the Mongols threatened to execute the slain Muslim's Christian assailants. With the Mongol army in hot pursuit, the terrified merchants fled Tana for nearby Kaffa. To the traders' enormous relief, the city's Italian-Catholic authorities immediately offered the men refuge behind Kaffa's high walls. Arriving at Kaffa's gates a short while later, the Mongols discovered that the Genoese had locked them out. Enraged by the Italians' audacity, the Mongols vowed to force the Genoese into submission by laying siege to the walled city.

By the end of 1346, the pestilence that had already devastated Sarai reached Kaffa's Mongol besiegers, who had massed directly outside the city's walls. According to a contemporary account of the siege by an Italian notary (legal scribe), Gabriel de Mussis, the stricken soldiers quickly discovered that "all medical advice and attention was useless. The Tartars [Mongols] died as soon as the signs of disease appeared on their bodies: swellings in the armpit or groin caused by coagulating



The plague was so deadly that it even was used as a military tactic. While besieging the walled city of Kaffa on the Black Sea, the Mongol army was stricken with the bubonic plague. As soldier after soldier fell, the Mongols began to use a catapult (*above*) to fling corpses over the protective walls, hoping to infect Kaffa's population, weaken the city's defenses, and invade.

humors [thickening bodily fluids], followed by a putrid fever.” So many of the besiegers died that the survivors, utterly overwhelmed by the number of corpses in need of burial, began stacking dead bodies like firewood against the thick walls that surrounded Kaffa.

Then the Mongols came up with an ingenious—and gruesome—plan. If they loaded the infected corpses onto catapults and hurled them over the city walls at the Italians, perhaps Kaffa’s defenders would also fall ill and die, they reasoned. According to de Mussis, the Golden Horde’s early experiment with biological warfare was highly effective. “What seemed like mountains of dead were thrown into the city,” reported de Mussis. “And the Christians could not hide or flee or escape from them, although they dumped as many of the bodies as they could in the sea. And soon the rotting corpses tainted the air . . . [and] poisoned the water supply, and the stench was so overwhelming that hardly one man in several thousand was in a position to flee the remains of the Tartar army. No one knew, or could discover, a means of defense.”

Many modern scholars insist that de Mussis’s version of how the plague spread to the Italian defenders of Kaffa is untenable, arguing that the disease cannot be caught merely through contact with infected corpses. They believe that the illness probably made its way into Kaffa when *Y. pestis*-bearing rats slipped through cracks in the city’s walls. According to microbiologist Mark Wheelis in his article “Biological Warfare at the 1346 Siege of Caffa,” however, de Mussis’s account of how the plague traveled from the Mongol encampment into the Italian-held city is entirely plausible. The Golden Horde’s gory strategy of launching *Y. pestis*-infected cadavers over Kaffa’s walls could “easily have transmitted the plague” to those unfortunate Genoese who were allotted the task of disposing of the mangled bodies, noted Wheelis:

Contact with infected material [from a bubo] is a known mechanism of transmission; for instance, among 284 cases of plague in the United States in 1970–1995 for which a mechanism of transmission could be reasonably inferred, 20 percent were thought to be by direct contact. Such transmission would have been especially likely at Caffa, where cadavers would have been badly mangled by being hurled, and many of the defenders probably had cut or abraded [scraped] hands from coping with the bombardment.

TO THE MEDITERRANEAN SEA

Desperate to get out of the plague-stricken city, sometime during the late summer or early autumn of 1347, the Genoese finally gave up their stubborn stand against the Mongols and fled Kaffa on their trading ships. Their destination was the Mediterranean Sea and their Italian homeland. Yet with the unwitting Genoese merchants traveled the horrific disease they sought to escape.

In October 1347, 12 Genoese galleys drifted into the harbor of Messina, Sicily, just off the southern tip of the Italian Peninsula. Just how many of the ships' passengers and crews had fallen sick and died before reaching the Mediterranean island is unknown. Yet there can be no doubt that the lethal *Y. pestis* bacillus was on board. According to eyewitnesses, about a week or so after the vessels docked, the people of Messina began to develop the characteristic swellings and high fever of the bubonic plague. As rats and fleas from the ships spread the microorganism to the port's rodent colonies and human inhabitants and more and more Messinians died, the survivors panicked. Hundreds fled their native town for other parts of Sicily, taking the disease with them wherever they went.

Within months, the Black Death had reached a number of major port cities on the Italian mainland, including Genoa, Venice, and Pisa, probably having been transported there by

merchant ships from infected Crimean and Middle Eastern ports. By the winter of 1348, the plague was in the beautiful and cosmopolitan city of Florence, where it killed an

Messina Confronts the Plague

Sometime in late 1347, the Black Death struck the port city of Messina in northeastern Sicily, a large island in the Mediterranean Sea off the coast of southern Italy. According to eyewitness Michael da Piazza, a member of the Roman Catholic religious order the Franciscans, the people of Messina were utterly terrified by the mysterious and rapidly spreading illness, which they believed could be contracted from even the slightest exposure to the stricken:

Soon men hated each other so much that, if a son was attacked by the disease, his father would not care for him. . . . As the number of deaths increased in Messina, many wished to confess their sins to the priests and to draw up their last will and testament. But ecclesiastics [clergymen], lawyers and attorneys refused to enter the houses of the diseased. . . .

Soon the corpses were lying forsaken in the houses. No ecclesiastic, no son, no father and no relation dared to enter, but they paid servants high wages to bury the dead. The houses of the deceased remained open, with all their valuables, with gold and jewels; anyone who decided to enter met with no impediment, for the plague raged with such vehemence that soon there was a shortage of servants and finally none were left at all.

estimated 60,000 people, about half the city's population. In his famous book, *The Decameron*, Florentine native Giovanni Boccaccio described the terrible toll that *Y. pestis* took on his beloved hometown: "Many died by day or by night in the public streets: the departure of many others, who died at home, was hardly observed by their neighbors until the stench of their putrefying bodies carried the tidings; and what with their corpses and the corpses of others who died on every hand the whole place was a sepulchre [burial vault]."

THE BLACK DEATH SWEEPS THROUGH WESTERN AND CENTRAL EUROPE

About the same time that the Great Mortality was assaulting Florence, the plague was also hammering Marseille, a bustling

A Nursery Rhyme and the Black Death

*Ring-a-ring a rosie,
A pocket full of posies,
A-tishoo, a-tishoo,
All fall down.
Ring around the rosie,
A pocket full of posies,
Ashes, ashes,
All fall down.*

During the mid-twentieth century, some people began to suggest that the popular folk rhyme "Ring Around the Rosie" dated back to the Black Death era in England and was, in fact,

French port on the Mediterranean Sea. From this major commercial hub, the disease fanned out in all directions, spreading southward into Spain and westward and northward through France. By the summer of 1348, the pandemic had reached Paris, where it raged on for months. “The multitude of people who died . . . was so great that nothing like it was ever heard, read of, or witnessed in past ages,” one French commentator noted in awe. In some parts of the city, he claimed, “two did not remain alive out of every twenty.”

During the second half of 1348, the Black Death all but engulfed western and central Europe, traveling “with the speed of a fire racing through dry or oil substances that happened to be placed within its reach,” wrote Boccaccio in his introduction to *The Decameron*. Moving out of northeastern

inspired by the lethal pandemic. The word *rosie*, the theory’s supporters claimed, referred to a rash that some plague victims developed, while the phrase *pocket full of posies* referred to the flower petals that people often carried around with them during the pandemic because the fragrant blossoms were thought to ward off illness. “Ashes, ashes” was said to refer to the cremation, or burning, of infected corpses (although most plague victims seem to have been buried in mass graves), and the phrase *all fall down* to the fact that most people who contracted the sickness died from it. Some scholars, however, remain unconvinced by the supposed relationship between the popular children’s rhyme and the Black Death. They contend that there is no absolutely evidence that the rhyme dates as far back as the 1300s, pointing out that “Ring Around the Rosie” did not even appear in print until 1881.

Italy, it traversed the Alps, entering Switzerland, Austria, and southern Germany. In central Europe, Hungary was hit hard. From the trading centers of northern and western France, the plague made its way to Flanders (modern Belgium) and the Netherlands and crossed the English Channel, attacking Britain with a vengeance. By the end of 1349, Ireland had also been invaded by what one British priest dubbed the “dreadful pestilence,” and London had lost an estimated 20,000 people, or 40 percent of the city’s total population.

NORTHERN AND EASTERN EUROPE ARE STRICKEN

The year 1349 saw the Great Mortality move into Scandinavia, first attacking Denmark, which had an extensive sea trade with England, then menacing Sweden, Norway, and Iceland. The plague also invaded Scotland in 1349, probably brought northward from England by Scottish soldiers. The following year, the Black Death made its way all the way northward to the Arctic Circle via Scandinavian supply ships, where it wiped out entire Icelandic and Norwegian colonies on the remote island of Greenland. In 1350, the plague also visited eastern Europe for the first time. The devastation that the disease wrought there was not as widespread as in other parts of the continent, perhaps because eastern Europe was sparsely settled and had few outside trading contacts. Significant portions of Poland and Bohemia (which roughly corresponds to today’s Czech Republic) seem to have been spared altogether. In late 1351, the pestilence finally reached northwestern Russia for the first time, invading Moscow sometime in 1352.

By the time it entered Moscow in 1352, the pandemic had run its course throughout most of the rest of Europe. By the end of the year, it had petered out altogether on the continent. Historians can only guess how many people perished during the Great Mortality. Most modern scholars place mortality

rates for the Black Death anywhere from 33 percent to a staggering 60 percent of Europe's population—an estimated 25 million to 45 million persons. Bewildered and terrified by the deadly scourge, Europeans struggled to come to terms with what has been described as the worst natural disaster in the continent's history.