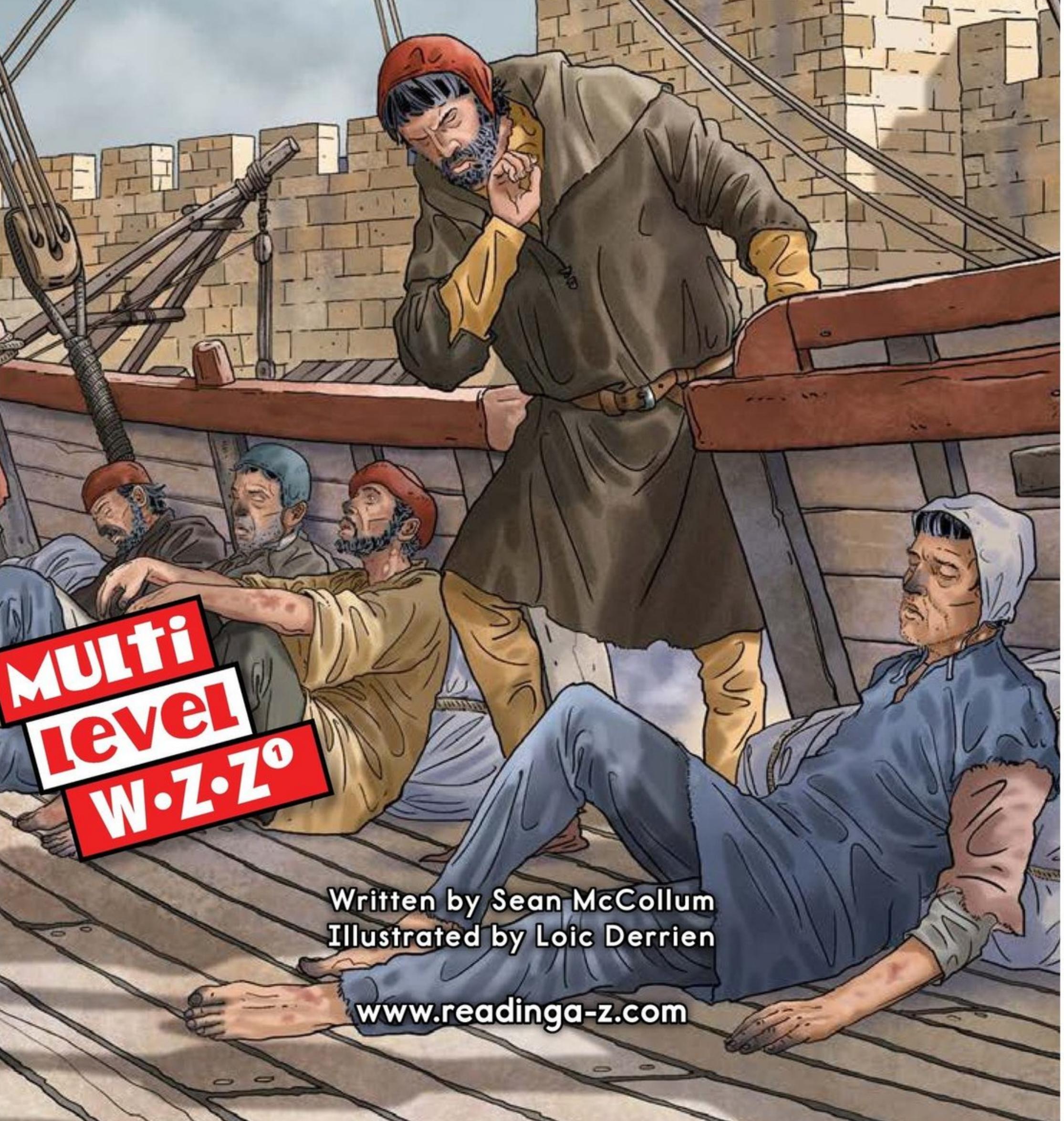


LEVELED BOOK • W

The Plague!



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Written by Sean McCollum
Illustrated by Loic Derrien

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Focus Question

What was the impact of the Black Death on Europe's history?

Words to Know

bacteria

boils

immune system

incense

infected

outbreak

pus

sanitation

starvation

supernatural

symptoms

viruses

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Correlation

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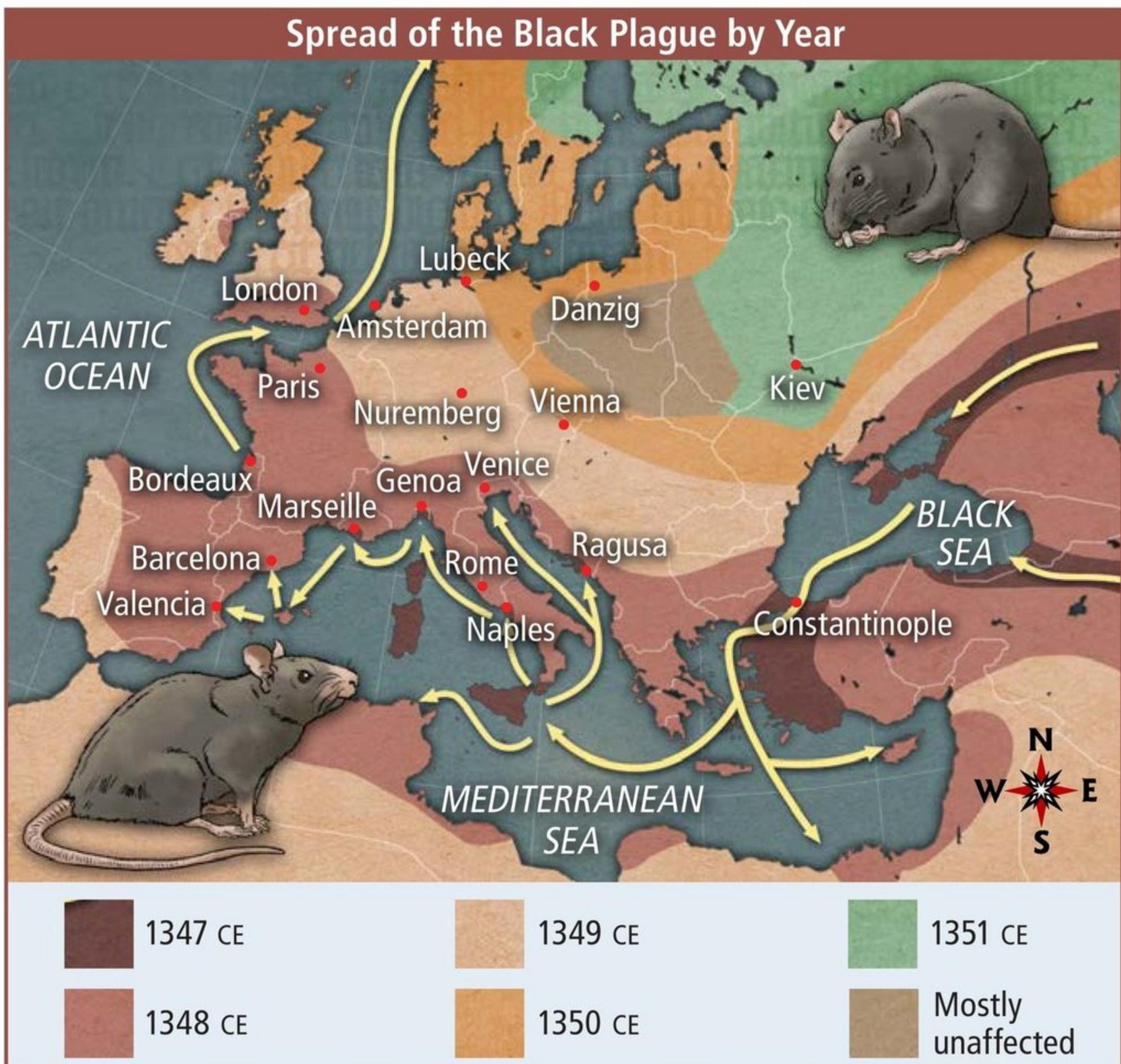
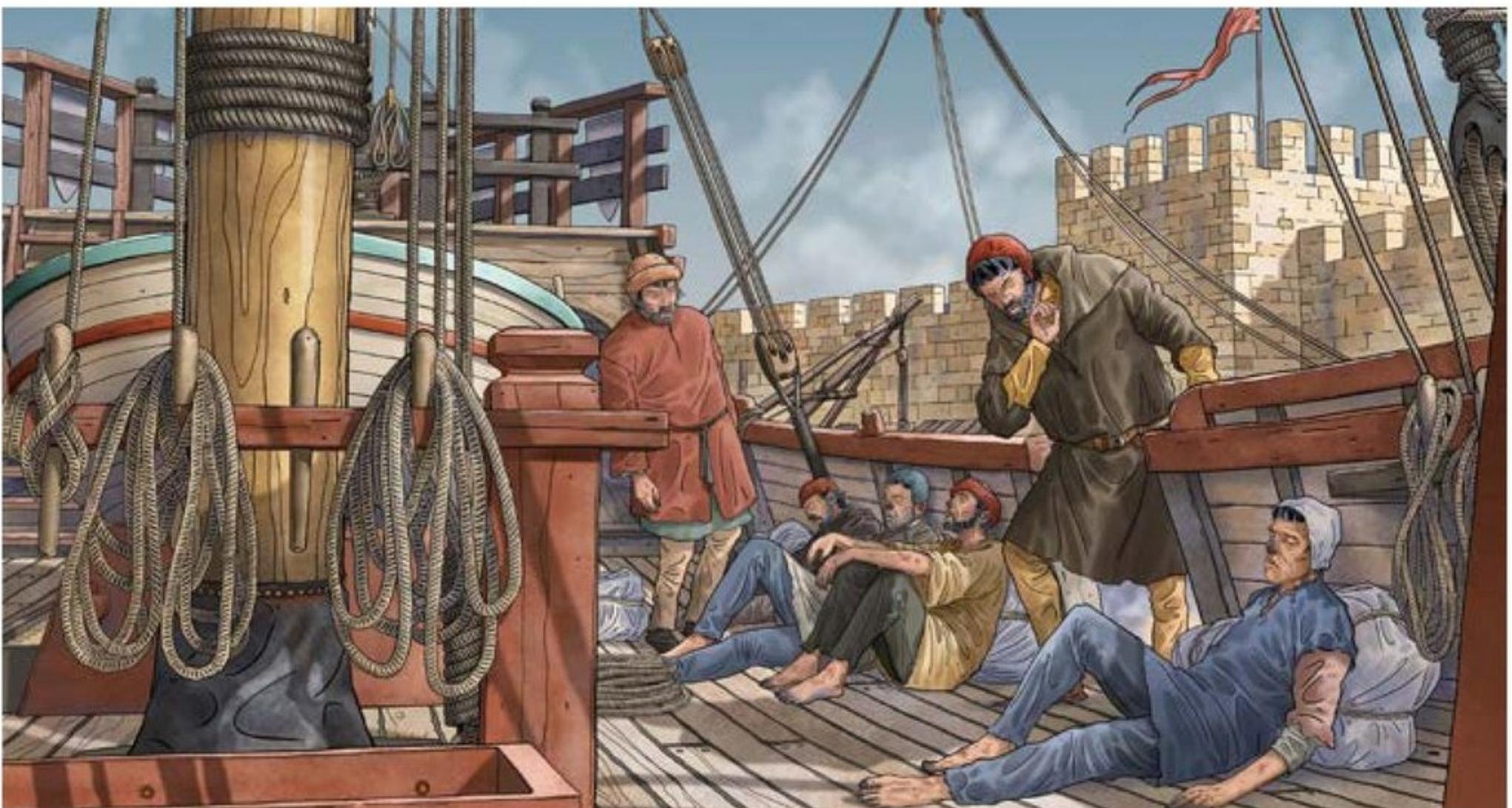


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The Plague Ships

The scene and smell must have been terrible. In October 1347, a dozen trading ships sailed into the port of Messina, Sicily—part of Italy today. The vessels had made the long voyage across the Black Sea. The arrival of the ships likely caused excitement around the docks. Such ships often carried news and goods from faraway lands.

Those who met them, though, got the shock of their lives and perhaps also the cause of their deaths. Most of the crew on the ships were already dead. The sailors working the ropes and sails were dying. Their skin oozed with open sores. People in Europe had heard rumors of a terrible disease in Asia. These ships and sailors now had brought the disease—the plague—to Europe. Later, it would be called the Black Death, the worst **outbreak** of disease Europe has ever experienced.



The Fleas of Disease

In the 1300s, no one had yet made the connection between germs and illness. The idea that **bacteria** or **viruses** could cause a cold, the flu, or other sickness was unknown.

Many people at that time saw disease as a **supernatural** event. Some people blamed the plague on how the planets lined up. One doctor described how it could spread if a healthy person looked into an **infected** person's eyes.

People also hadn't made the connection between the plague and the fleas that were actually spreading the disease. These fleas most certainly had stowed away on the ships that docked at Messina. It was not until 1894—almost 550 years later—that scientists found the type of bacteria that caused the plague. These bacteria get into the gut of a type of flea that normally feeds on the blood of rats.

The bacteria killed off the groups of rats they normally lived with. The fleas were then forced to go looking for other animals to feed on, including people.

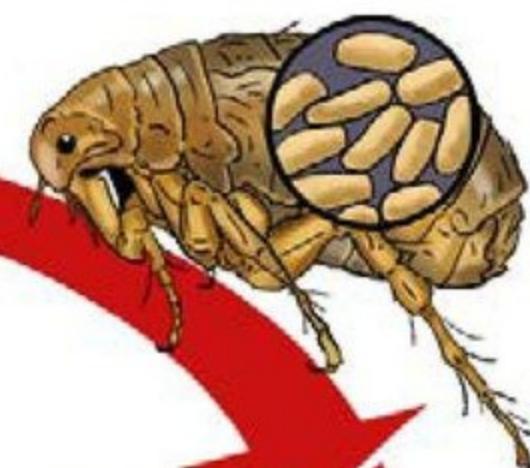
How Rats and Fleas Helped Spread the Plague

1 Rodent is infected



2 Flea bites rodent

3 Plague bacteria multiply in flea's gut



5 Person is infected



4 Flea bites a person



Filthy people and cities did not help. In the 1300s, human waste and garbage were often dumped in the streets of overcrowded cities. Bugs were regular houseguests. Getting bitten by fleas and other pests was an unpleasant fact of life.

Not all investigators are convinced that fleas were the only source of the Black Death. Other diseases could also cause deadly outbreaks. However, the bacterium in the fleas remains the leading suspect, based on the kinds of illness that people reported.

What seems clear is that humans began passing this deadly disease to one another. A person's **pus**, blood, or spit could infect others. In other words, a simple cough could give the sickness to the next victim. At that point, the plague became all but unstoppable.



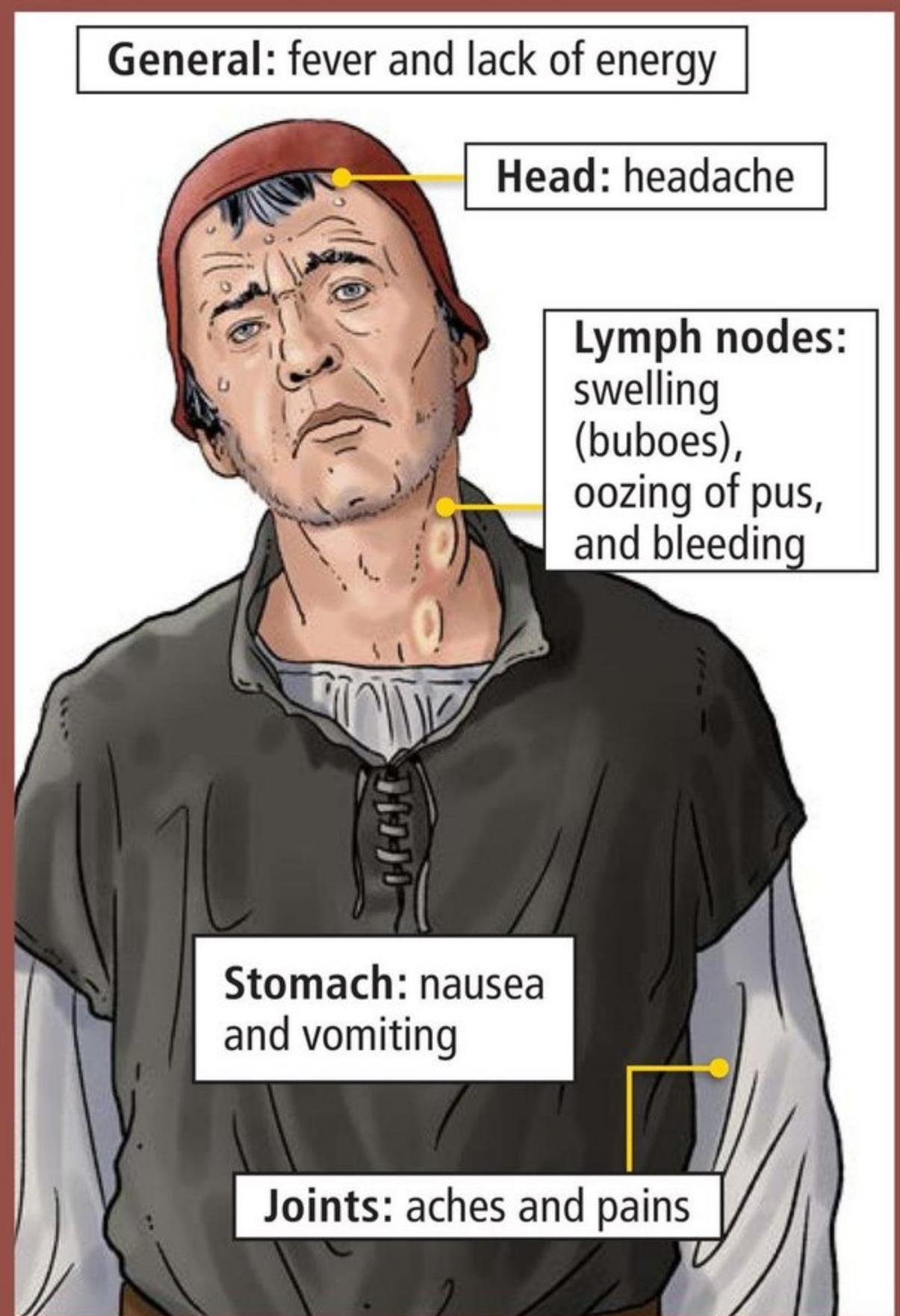
Death Stalks Europe

By 1348 the Black Death was spreading across Europe. Travelers and traders carried it to new areas. It often took weeks before an infected area knew something was horribly wrong. By then, it was too late to do anything about it.

At the time, there was no treatment for such a serious disease. As the illness showed itself, victims experienced fever, vomiting, swelling, and strong pain. They might die quickly or live a few days. Historians think only one in five people who got the **symptoms** survived.

Bubonic Plague Symptoms

The word *bubonic* comes from *buboës*, which are painful swellings of the lymph nodes in the neck, armpits, and groin. In plague victims, buboes can blow up to the size of a chicken egg and can even burst through the skin. Other forms of plague could attack the lungs, causing a bloody cough, or the blood, causing areas on the face, hands, and feet to turn black.



Bubonic plague bacteria start by attacking the lymph nodes in the neck, groin, and underarms. Lymph nodes are important organs of the **immune system**. They help the body fight disease. With plague, lymph nodes swell and blacken with poisoned blood and pus. They become **boils** called *buboës*. Plague can also infect the lungs, causing them to bleed.

The disease soon reached France and England, spreading in every direction. By 1351, there was hardly a spot in Europe it had not reached.



Panic and a Prayer

Once people realized that plague had come to their community, many panicked. Frightened families abandoned sick loved ones. Doctors and priests fled the places and people they served. City folk left for the countryside, thinking it would be safer there. By fleeing, though, they often helped spread the disease.

Few people had good ideas about how to stop the disease. Desperate people tried useless cures. Many burned **incense** or wore flowers to cleanse the air. If nothing else, the smoke and flowers may have covered up the awful smells around them.

Many people turned to their faith in hope of rescue. Bands of Christians walked from town to town, hitting their own backs with spiked whips. They prayed that they would be forgiven for their sins and spared. In some areas, Christian groups wrongly blamed Jews for causing the plague. Many Jewish communities were attacked and their people driven off or killed.

A few cities instead used common sense to try to control the disease. Port cities soon realized that visiting ships were one of its sources. They began to block ships that came from plague-infected areas. A forty-day waiting period was used to confirm that the ship's crew were plague-free. Only then could they come ashore.

Officials in some areas also figured out that stopping the movement of people slowed the spread of disease. Infected families were blocked from leaving their houses. Officials set limits on travel and trade to and from their cities. Work crews buried victims as soon as possible for fear that their bodies could infect others. In some areas, though, public order had broken down. This made it difficult to force people to follow such rules.

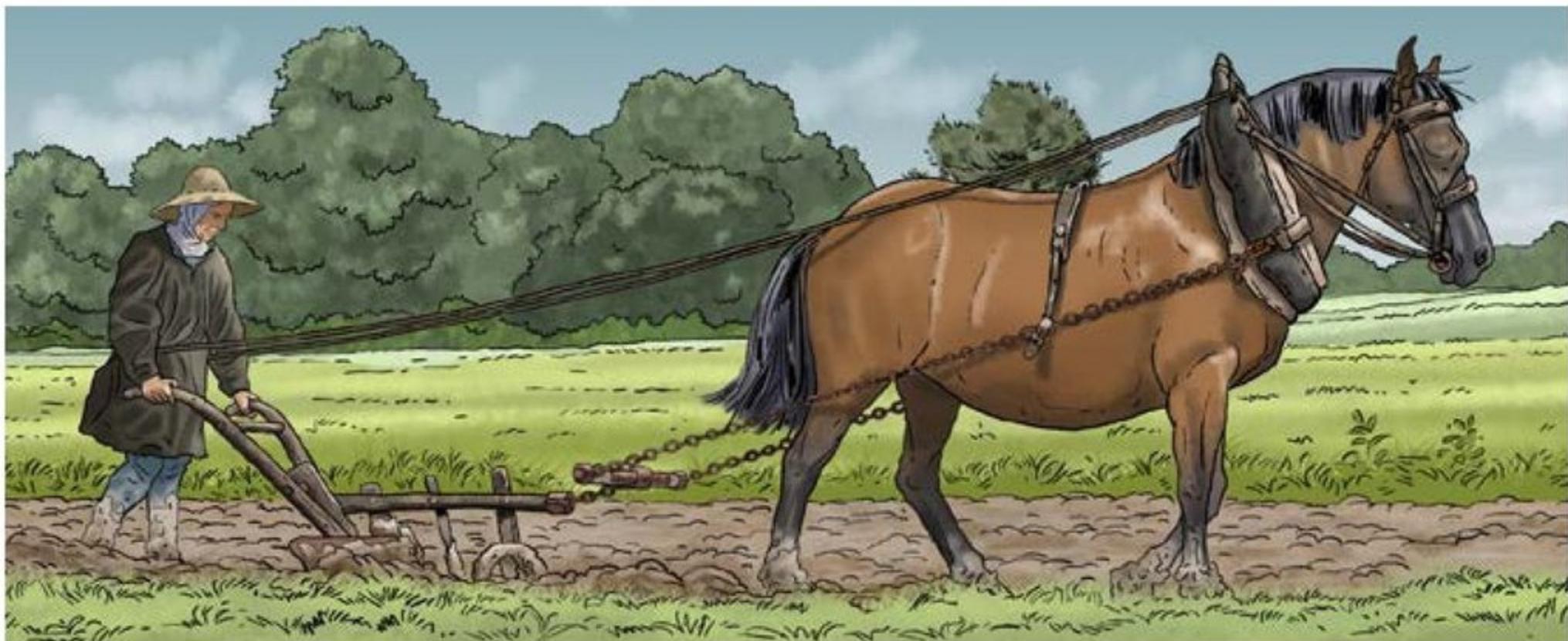
The Aftermath

Imagine half the people of your city gone. The shops are empty of food and other goods. That was the experience of many people who survived the worst period of the Black Death.

Historians can only guess at the death count. There were about eighty million Europeans before the Black Death struck. Experts think that 40 to 60 percent of those people died, though the death rate varied greatly by location. Cities were usually the hardest hit. The disease spread easily in crowded, dirty neighborhoods. Nearly 60 percent of Londoners died, along with half the people of Paris.

After 1351, the plague slowed for reasons researchers are still trying to understand. Survivors may have built up resistance to the disease. The bacteria may also have changed to a less deadly form. Plague outbreaks happened again and again for the next five hundred years. None, though, ever matched the deadliness of the Black Death.

After the plague, Europe was left a very different place. There was a huge shortage of workers. The lack of skilled craftspeople and laborers caused big problems. Workers were able to demand better pay and treatment.



The invention of the heavy plow helped end food shortages following the plague years. It allowed farmers to till fields much faster by using horses rather than oxen to pull the plow.

Fields were left unplanted or unharvested without peasants to work them. Farm animals died from a lack of tending. Because of this, Europeans suffered food shortages and **starvation**.

Survivors' views about society and the meaning of life changed, too. Many began to question their belief in the church. Some challenged their rulers. The authority of these powerful individuals had proven useless in protecting the people they controlled.

There were many examples of progress afterward. Farmers tried new practices to grow more food with fewer hands. Public health and medicine also saw changes for the better. More communities understood the importance of **sanitation** and cleanliness. They also put in place better ways to handle disease outbreaks.

Rebirth

Modern medicine has made another outbreak of the Black Death all but impossible. Modern medicines can quickly cure most cases of plague. Better public sanitation and health programs also help control the spread of most forms of disease.



Antibiotics: The Miracle Drug

Antibiotics are a recent development in human history. Before the mid-1800s, some healers recognized that certain plant molds and other fungi attacked bacteria. In the 1800s, more research led to a better understanding of the link between microbes and disease. Then in the 1920s, Scottish biologist Alexander Fleming accidentally discovered a plant mold that destroyed a dangerous form of bacteria. Out of his research came the wonder drug penicillin, which is capable of killing many forms of bacterial infection. Fleming was awarded the Nobel Prize in Medicine in 1945 for his breakthrough work.

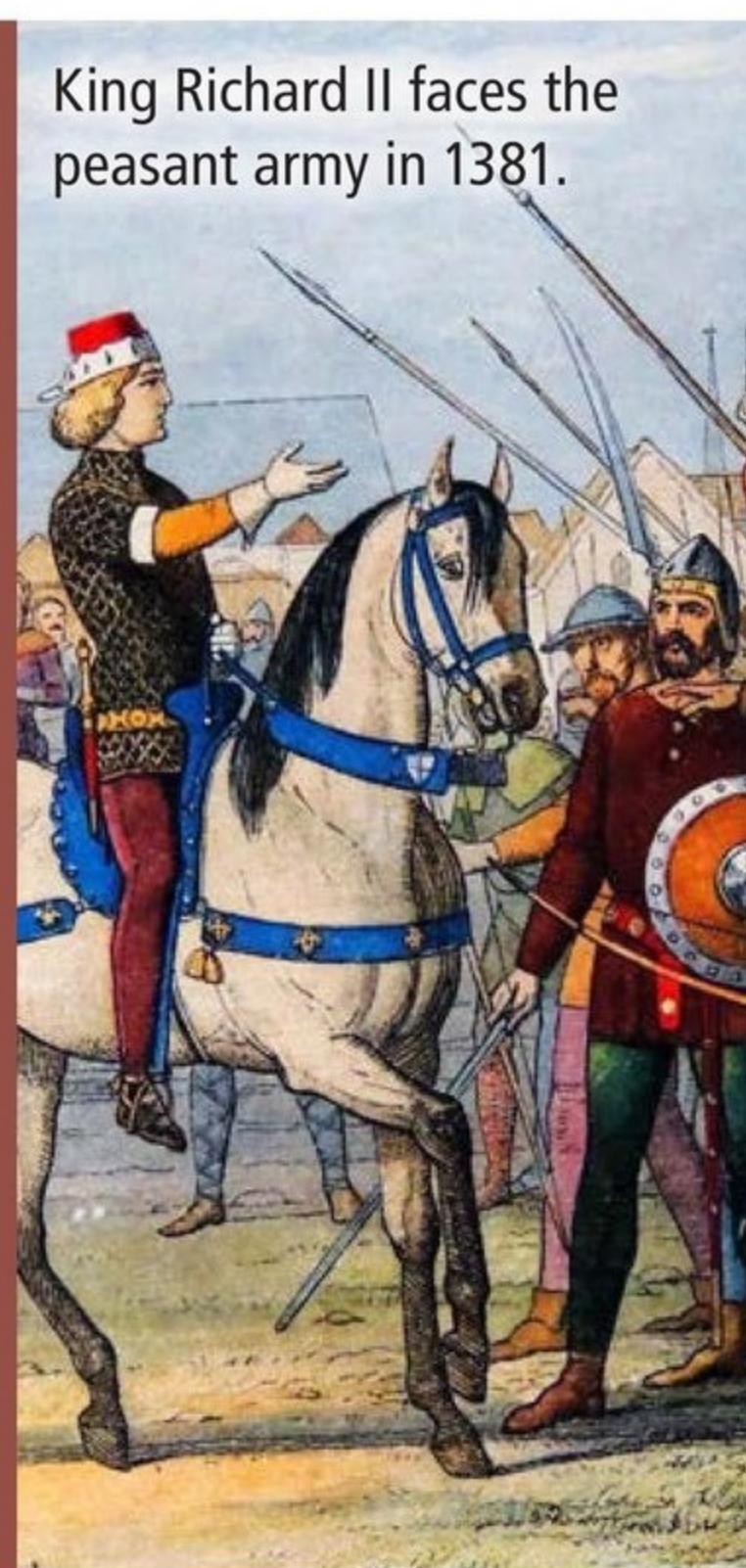
In the mid-1300s, the mystery and horror of the Black Death terrified Europe. Many people who lived through the Black Death believed it was the end of the world. In terms of death rates, it remains the most destructive event in European history.

At the same time, some historians link the disaster to helpful changes that followed. From the late 1300s until the 1600s, Europe underwent big changes. This period, known as the Renaissance, was a time of great improvements in medicine, science, and art. *Renaissance* means “rebirth” in French. After the Black Death, a period of rebirth was exactly what Europe needed.

The Peasants' Revolt

England went through a period of economic shock in the aftermath of the Black Plague. Farmers and laborers were in such great demand that they saw their wages rise up to 40 percent from the 1340s to the 1380s. This big social shift so alarmed the upper classes and nobility that royal officials passed a law attempting to fix wages for peasants at the levels they had been before the Black Death. They passed another law to prevent peasants from leaving their home villages in search of better jobs. These crackdowns led to a major uprising known as the Peasants' Revolt in 1381.

King Richard II faces the peasant army in 1381.



Glossary

bacteria (<i>n.</i>)	small one-celled organisms that sometimes cause infections and disease (p. 5)
boils (<i>n.</i>)	red, sore spots on the skin that are infected (p. 9)
immune system (<i>n.</i>)	a system that moves antibodies through the body to fight infection (p. 9)
incense (<i>n.</i>)	a substance that releases a pleasant smell when burned (p. 10)
infected (<i>adj.</i>)	sickened by a disease-causing organism or substance (p. 5)
outbreak (<i>n.</i>)	the sudden spread of something unwelcome, such as fighting or a disease (p. 4)
pus (<i>n.</i>)	a thick, usually yellowish-white liquid that is produced in infected tissue (p. 7)
sanitation (<i>n.</i>)	the act, process, or facilities used to keep a place clean or remove waste (p. 13)
starvation (<i>n.</i>)	a state of extreme hunger or dying because of a lack of food (p. 13)
supernatural (<i>adj.</i>)	of or relating to something that can't be explained by science or the laws of nature (p. 5)
symptoms (<i>n.</i>)	specific signs of illness or injury (p. 8)
viruses (<i>n.</i>)	microscopic organisms that infect the body; diseases caused by a virus (p. 5)

The Plague!

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Word Count: 1,358

Connections

Writing

Research to learn more about Alexander Fleming or another scientist who discovered a medicine that helped stop the spread of disease. Write a biography to share with your class.

Social Studies

Research to learn more about the Renaissance and the rebirth of Europe after the plague. Design a poster to share your findings with your class.

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