

This 1562 painting, "The Triumph of Death," by Pieter Bruegel the Elder, illustrates the deep impression left on the European imagination by the epidemics and wars that ravaged society.

ORNOZ/ALBUM





THE ORIGINS OF THE EPIDEMIC

The Arab author Ibn al-Wardi suggests that the plague originated in the “Land of Darkness”—in modern-day Uzbekistan, then part of the Mongolian khanate of the Golden Horde.

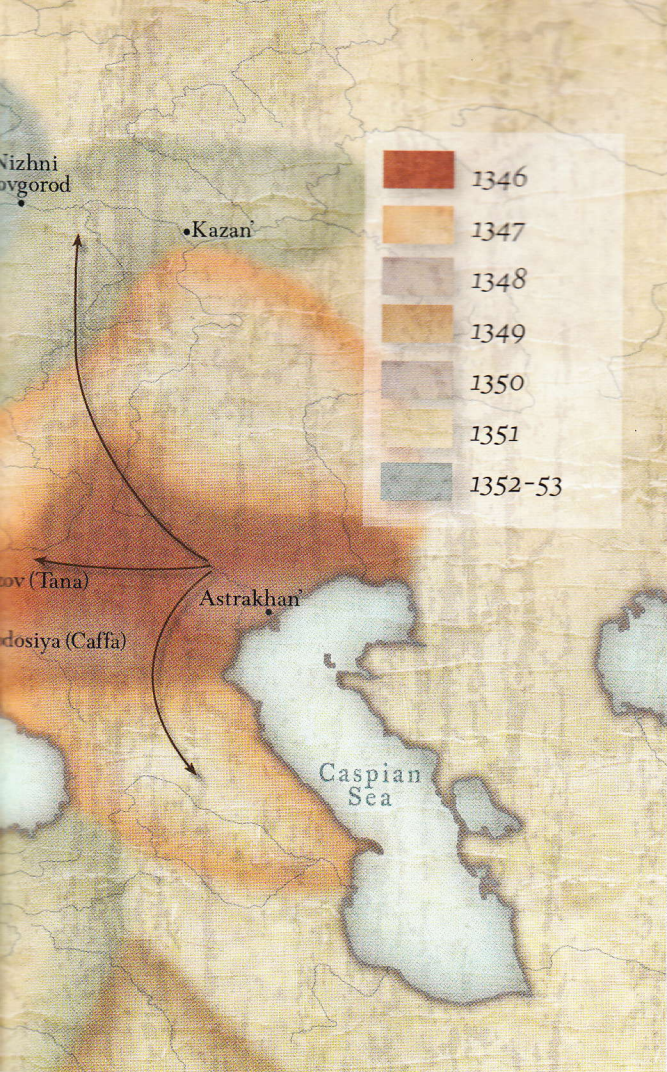
S ometime in 1347 a sailing ship moored in a Mediterranean port unwittingly unleashed one of the most destructive pathogens in history. Unloaded with its cargo and passengers were some deadly stowaways: flea-ridden black rats carrying the bubonic plague. It was a scenario played out many times in ports all around Europe, and the results were always the same: Sickness, suffering, and death on what seemed a cataclysmic scale. The years 1347-1353 saw Europe in the terrifying grip of the worst pandemic it had ever suffered: At least one-third of Europe’s population died from what became known as the Black Death.

Most historians agree that it was bubonic plague, a bacterial disease that periodically flared up in Asia and Europe. The plague had devastated the Byzantine Empire in the sixth century, killing an estimated 25 million people, and it continued to exterminate large numbers of Europeans until the last major outbreak at the start of the late 19th century. However, during its peak years, the plague’s terrifying virulence

spread faster, farther, and with deadlier effect than ever before or since. Its impact fundamentally altered the social, economic, and religious lives of those who survived, scarring the collective consciousness of the entire continent.

Medieval Europe was at the mercy of many infectious diseases, including dysentery, influenza, measles, and much feared leprosy. But it was the plague that struck the highest note of terror into people’s hearts. Outbreaks seemed to strike from nowhere: It seized victims with alarming speed and its horrific ravages were incurable. None were safe as the plague cut down peasants and princes alike, its leveling of social distinctions resonating in the written accounts of the time. It is little wonder that its medieval chroniclers often assume an extravagant and even apocalyptic tone.

Many explanations of the plague were proposed, most wrapped up in religious or superstitious assumptions. Those closest to scientific reality were based on classical Greek medicine, attributing the sickness to miasmas: The invisible corruption in the air emanating



MAP: EOSGIS

from decomposing matter and supposedly absorbed by the body either by breathing or through skin contact. Some accounts suggested astrological causes, blaming the plague on the conjunction of certain planets, eclipses, or the sighting of a comet. Others cited natural phenomena: volcanic eruptions and seismic tremors releasing deadly gases. But even these explanations were widely believed to have an underlying cause: divine wrath at the sinfulness of humankind.

Of Rats and Men

It was only in the 19th century that the plague's supernatural origins were definitively discarded. An outbreak in the Far East prompted fears of a worldwide pandemic. Researchers rushed to identify the pathogen causing the disease, and in 1894 two bacteriologists—Japan's Kitasato Shibasaburo and France's Alexandre Yersin—simultaneously discovered the plague's bacillus, or rod-shaped bacteria. Later named *Yersinia pestis*, the bacteria was carried by fleas living as parasites on rats and other small rodents. The

The Deadly Path of the Plague Across Europe

Spreading rapidly inland from ports, the pestilence from Asia soon reached nearly all corners of Europe. Poor hygiene, diet, and medical knowledge helped it establish a deadly grip on the continent.



ALLEGORY OF THE PLAGUE, DETAIL FROM *LE MIROIR HISTORIAL*, BY VINCENT DE BEAUVAIS, 15TH-CENTURY TRANSLATION

1347

The epidemic arrives in Constantinople and from there spreads to Greece, Sicily, and coastal cities in Italy and France.

1348

The plague rampages through the Balkans, Italy, and France, across northern Spain and Portugal, and to southern England.

1349

The plague arrives in central Europe, parts of Poland and Scandinavia, central England, and the southern area of Spain and Portugal.

1351-53

Spreading east through Germany and Poland, the deadly pestilence reaches Moscow and its surrounding areas.

1346

Soldiers in the Mongol army besieging Caffa, in the Crimea, are infected with plague. The disease enters the city and spreads rapidly via trade routes.



AN ANGEL AND SAINT ROCH, PROTECTOR OF PLAGUE VICTIMS, IN A 16TH-CENTURY SCULPTURE

1348-49

A truce is called in the Hundred Years War, as the plague is rife in the contested regions and ravaging the armies of both sides.

1350

The Netherlands, most of Germany, Denmark, the Polish coast, the south of Sweden, and Scotland all succumb to the Black Death.

RATS DEVOUR THE CORPSE OF A PLAGUE VICTIM IN *LE MIROIR HISTORIAL*

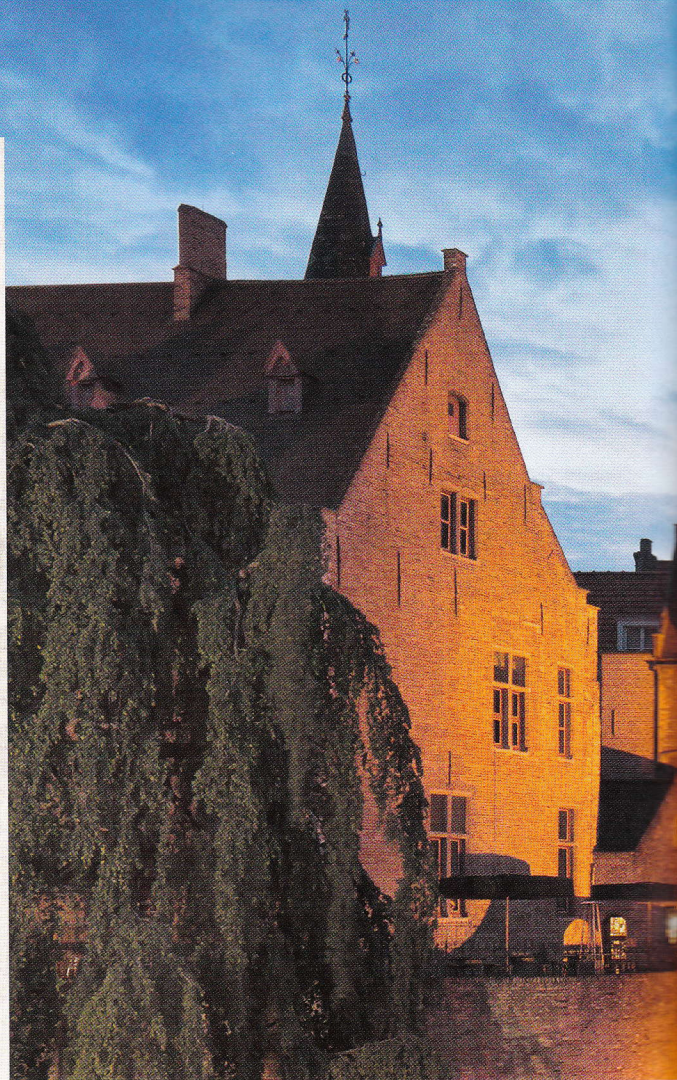


FROM TOP: BRIDGEMAN/ACI; ERICH LESSING/ALBUM; BRIDGEMAN/ACI

Was the Black Death Bubonic Plague?

Not all historians and epidemiologists agree that the pestilence that devastated Europe was bubonic plague. Instead, some of today's most feared diseases have been suggested, including a virulent pulmonary anthrax and the Ebola virus.

CRITICS OF the mainstream on whether the bubonic bubonic plague theory point plague could spread with out that it needs high tem- such high speed, levels of peratures and damp condi- infection, and rates of mor- tions to develop. These are tality. Some argue that the are not the conditions typically appearance of rashes, boils, and abscesses across the associated with the north- victim's body are not the ern regions of Europe, where usual symptoms of bubonic some of the most deeply af- ic plague, of which a single fected areas were located. Nor is it clear that countries swelling is more typical. like England had sufficiently The mystery continues to high infestations of rats and perplex scientists and his- fleas to spread the disease. torians alike, but most agree Doubts have also been cast that it was bubonic plague.



bacilli multiply in the gut of the flea. When it bites, it regurgitates the bacilli into the body, infecting it. Normally this takes place in a closed cycle between fleas and rodents. But under the right conditions the bacteria spreads at such a rate as to kill off its rodent hosts, forcing the fleas to find alternatives—humans. As such, the plague is a zoonosis, an illness that passes from animals to humans. Infection spread easily because the rats were drawn to human activity, especially the food supplies kept in barns, mills, and homes.

The bacteria could be present in people's homes for between 16 and 23 days before the first symptoms of illness emerged. Death came three to five days later. It was perhaps another week before a community became fully aware of the danger, and by that time it was too late. The nodules of a patient's lymphatic system became infected, showing as swellings in the groin and armpit. These were accompanied by vomiting, headaches, and a very high fever that caused sufferers to shiver violently, double up with cramps, and become delirious.



The inflamed lymph gland was widely known as a bubo, giving rise to the term bubonic plague. But this was only the most common form of the Black Death—two other variants of plague were also at work. Septicemic plague infected the victim's blood, causing visibly black patches beneath the skin, perhaps what gave the Black Death its name. Pneumonic plague affected the respiratory system, making the sufferer cough—the perfect mechanism for airborne infection. In the medieval world both septicemic and pneumonic plague had a 100 percent mortality rate.

A Swiftly Paced Plague

In Europe the Black Death first appeared in the Mediterranean basin and spread to most of the corners of the continent in just a few years. But the initial outbreak is thought to have been in the Black Sea port of Caffa, now Feodosiya, on the Crimean Peninsula. In 1346 Caffa was an important commercial trading post run by Genoese merchants. That year it was besieged by the Mongol army, among whose ranks were

a growing number of plague sufferers. As the disease spread, one story has it, the Mongols deliberately hurled infested corpses over the walls—siege warfare was rarely chivalrous. Even more likely is that the bacteria entered the city in fleas carried by the rats scampering between the siege lines. However it arrived, once the city realized it faced a plague epidemic, the Genoese merchants panicked and fled, carrying the bacillus with them to Italy.

Historians and scientists have puzzled about how the Black Death took such a firm hold over such a vast area in such a short time. Some have suggested that the main plague variant was pneumonic rather than bubonic because airborne transmission seems to support its rapid spread. However, pneumonic plague kills so quickly—in a few hours—that it actually spreads slowly because the host rarely lives long enough to infect many people. Most evidence points to the Black Death being the main bubonic strain of plague, spread far and wide by flea-ridden rats on boats and fleas on the bodies and clothes of travelers. In an age of

THE ROUTES OF COMMERCE AND DEATH

Close commercial links between the Baltic and the North Sea brought huge numbers of boats to ports such as Bruges (above). Many of these vessels carried the plague.

GÜNTER KIRSCH/AGE FOTOSTOCK

FROM EARTHLY PLEASURES TO

Before the epidemic arrived, a fresco depicting the Last Judgment was painted in Pisa. Its



1 Pious hermits go about their daily work at a small remote sanctuary—reinforcing the idea of retreat from the world. One milks a goat, one reads, while another prays. Their indifference to death highlights their complete confidence in eternal salvation, a reward for devotion and piety.

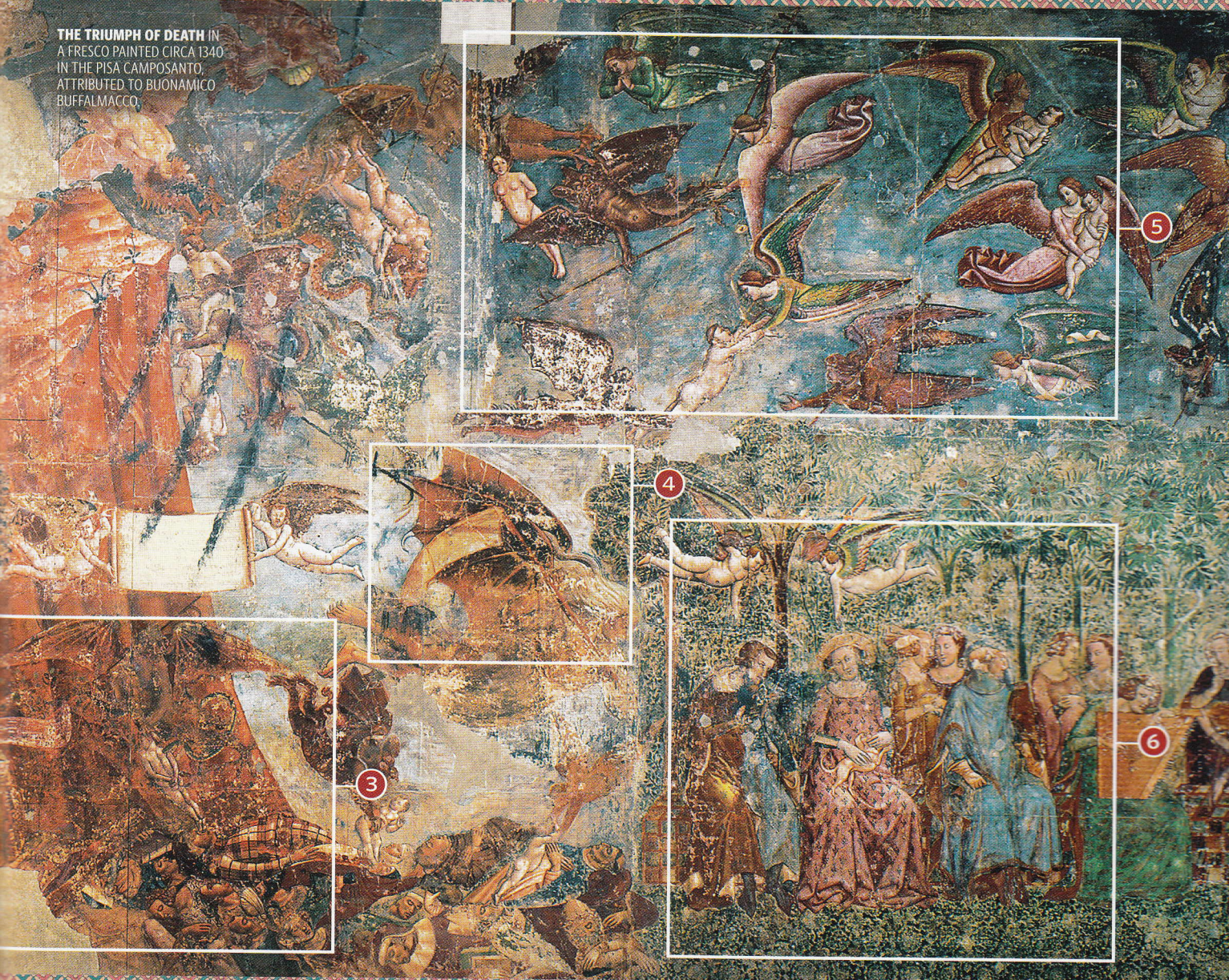
2 A king and his retinue are reveling in their carefree day, enjoying a hunt, when they stumble on three corpses in various stages of decomposition. The king covers his nose against the stench, but he cannot escape this reminder of the transience of life and its fleeting pleasures.

3 The dead are heaped together in a pile. Death is the leveler through which all become equal. Pontiffs, kings, princes, and peasants all fall under the inevitable sweep of Death's scythe. A swarm of demons swoops down to take away the souls of those who sinned in life.

ETERNAL DAMNATION

vivid images resonated even more when the Black Death devastated the Italian city.

THE TRIUMPH OF DEATH IN A FRESCO PAINTED CIRCA 1340 IN THE PISA, CAMPOSANTO. ATTRIBUTED TO BUONAMICO BUFFALMACCO.



4 *The scythe-wielding* figure of Death dominates the center of the fresco. It hovers over its macabre kingdom, the pile of bodies that have succumbed to it. Damage to the fresco means that this figure does not immediately catch the eye as much as it would have originally.

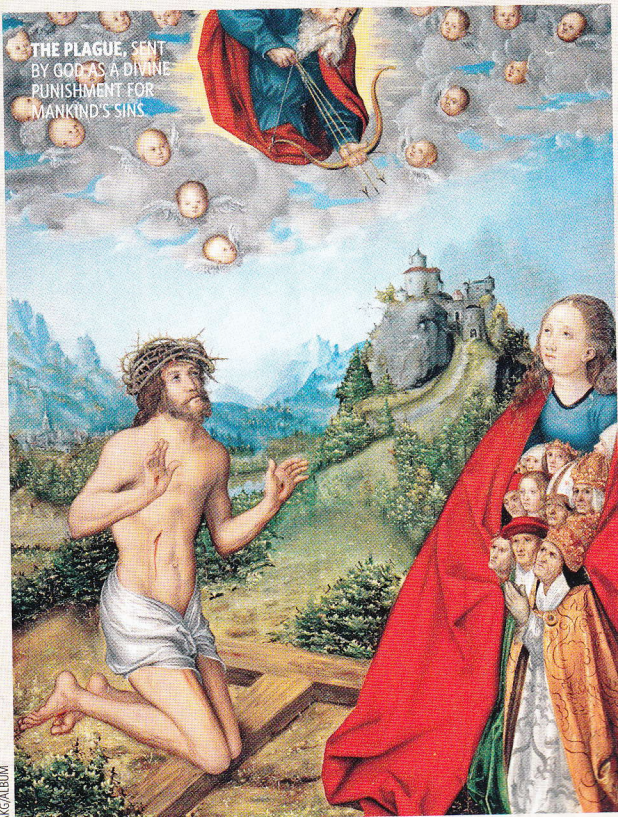
5 *Angels and demons* fight for the souls of the dead, shown as children flying from the mouths of the deceased. This formidable moment of terror is captured in the Requiem mass: "Lo, the book, exactly worded / Wherein all hath been recorded / Thence shall judgment be awarded."

6 *Young boys and girls* converse in a representation of courtly love. They sit beneath luxuriant trees in a garden covered with bright flowers. Death seems very distant—for now. But the implication is that it will all too soon bring an end to youth, beauty, and earthly delight.

The Plague from Above . . . or Below?

In 2006 Mike Baillie, professor of paleoecology at Queen's University, Belfast, published *New Light on the Black Death: The Cosmic Connection*. In it he proposed a radical new idea on the origins of the medieval pandemic.

BAILLIE DETECTED a marked downturn in tree ring growth during two of the plague epidemics in Europe—the sixth century's and the Black Death—that coincided with unusually high concentrations of ammonium in Greenland ice samples from the same periods. But no natural processes on Earth produce so much ammonia. Baillie suspects that atmospheric detonations or earthquake-triggering ground impacts of cometary meteorites is one possibility. Contemporary accounts cited numerous phenomena: fiery rain, shooting stars, comets, and aerial explosions, as well as a pungent smoke in the air. Was Earth struck by a meteorite, its disintegration releasing ammonia? Or did impact release poisonous gases from underground? And did such noxious fumes play a part in the death of millions? Scientists are still debating these questions.



ANGELBURN



growing maritime trade, food and goods were carried ever longer distances from country to country, and the rats and their bacteria traveled with them—at an estimated 24 miles a day. The unceasing flow of sea, river, and road traffic between commercial centers spread the plague across huge distances in what is known as a “metastatic leap.” Big commercial cities were infected first, and from there the plague radiated to nearby towns and villages, from where it would spread into the countryside. The plague was also carried down the well-trodden paths of medieval pilgrims; holy sites became additional epicenters of regional, national, and international propagation.

Even without such help the plague is estimated to have moved inland more than a mile a day in the right conditions. In very cold and dry areas it slowed to a stop, explaining why Iceland and Finland were among the few places to escape its ravages. A popular refrain in cities of the time ran: “Get out soon, quick and far, and the later you return, the better.” It was advice heeded by many who could afford to flee to the



countryside. Yet this brought disastrous consequences. Evacuation did not necessarily save those fleeing, as some were already infected or traveling with plague carriers. However, it did help to spread the disease to new and ever more remote places as evacuees sought the safety of uninfected villages.

The Death Toll

Calculations of the fatalities caused by the Black Death make shocking reading. In absolute terms, the population of Europe was estimated to be around 75 million people before the plague: It plummeted to just 50 million in the six years between 1347 and 1353. The sharp decline was a result of both the disease itself and the widespread social breakdown it set in motion—not least that the deaths left fields and animals untended and family members uncared for. Even after the Black Death burned itself out, flare-ups continued to disrupt Europe's demographic recovery. Not until around the 16th century did Europe's population growth start to strengthen.

The effects of the catastrophe were apparent in every area of life. In the decades following the pandemic, wages soared because of the huge shortage of workers. Vast tracts of once productive farmland turned to pasture, and even whole villages lay abandoned—around a thousand in England alone. There was a major migration from the countryside to the cities, which recovered relatively quickly and were reinvigorated with commercial energy. The peasants who remained in the countryside were often able to take their pick of unused land, increasing the power of the landed peasantry and boosting the rural economy.

Indeed, historians have argued that the Black Death paved the way for a new wave of opportunity, creativity, and wealth from which would flourish the art, culture, and ideas of the Renaissance, and the beginnings of a recognizably modern Europe. ■

THE PLAGUE IN EASTERN EUROPE

The city of Prague (above) was the capital of the kingdom of Bohemia, where, it is believed, the deadly infection arrived overland from the German region of Bavaria, its southern neighbor.

RAINER MIRAU/AGE FOTOSTOCK

ANTONI VIRGILI
VIRGILI IS A SPECIALIST IN THE MIDDLE AGES.

CHANGING EUROPE

In March 1348 Guillem Bassa died on the island of Mallorca, the first documented victim of the plague in what is now Spain. By June 300 people a day were dying in the city of Valencia. The epidemic drastically changed people's behavior, transforming the economy and the society.



SAINT ROCH,
PROTECTOR OF THE
PLAGUE-STRICKEN,
IN A 16TH-CENTURY
PAINTING



ALFONSO XI IN A
MINIATURE, FROM
THE GREAT SPANISH
CHRONICLE

I Death of a King

Royalty could not escape the pestilence. On October 30, 1348, the Black Death carried off Leonora of Portugal, the wife of the King of Aragon. On March 26, 1350, the plague raging through Andalusia killed King Alfonso XI of Castile while he was besieging the fortress of Gibraltar. He was the only European monarch to die of the disease.



A JEW THREATENED
BY CHRISTIANS IN
THE 13TH-CENTURY
CANTIGAS DE SANTA
MARIA

II Blame the Jews

On May 14, 1348, a religious procession in Barcelona ended with an attack on the Jewish ghetto in which many were killed. The massacre was incited by priests who accused Jews of having poisoned water and food sources thought to be causing the deaths. The plague stirred often violent anti-Semitism across Europe.



MEDIEVAL BROTHEL.
MINIATURE CIRCA 1450

III Seize the Day

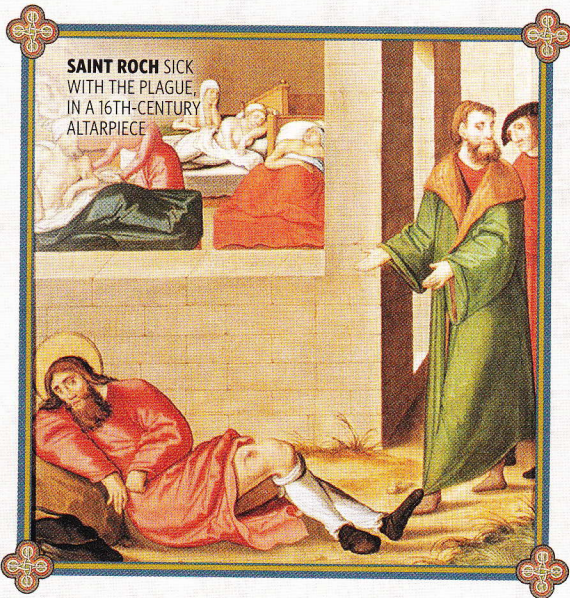
The plague killed families and friendships, leaving many without financial security. This caused an increase in extramarital affairs and prostitution. In 1351 the chronicles of the Spanish city of Valladolid scandalously reported, "Concubines of clergymen . . . brazenly walking around . . . wearing rich cloth . . . adorned with silver and gold."

Pugere cito,
longe,
et tarde revert

Advice to avoid the plague:
"Get out soon, quick and far,
and the later you return, the
better."



AN ANGEL POINTS AT A SINNER WHO HAS BEEN THE VICTIM (NOT PICTURED) OF THE PLAGUE IN A 15TH-CENTURY PAINTING.



SAINT ROCH SICK
WITH THE PLAGUE,
IN A 16TH-CENTURY
ALTARPIECE

II Plague and Piety

The fear of eternal damnation in the flames of hell prompted many to change their wills in favor of churches. These attempts to placate God's wrath greatly enriched church coffers. The epidemic also enhanced the cults of Saint Roch and Saint Sebastian, both seen as powerful protectors of the plague-stricken.



PEASANTS IN THE
BIBLE OF ST. LOUIS
FROM THE 13TH
CENTURY

I Empty Countryside

The plague took a heavy toll on Europe's peasantry. Land that was once worked for crops was now left for grazing. The booming wool trade of England and other countries was a direct consequence of the plague's devastation. A scarcity of labor allowed survivors to demand higher pay and threatened Europe's feudal system.