harrowed by witnessing the struggle, the ferocity and carnage, of a human battle before my door.

Kirby and Spence tell us that the battles of ants have long been celebrated and the date of them recorded, though they say that Huber is the only modern author who appears to have witnessed them. “Aeneas Sylvius,” say they, “after giving a very circumstantial account of one contested with great obscurity by a great and small species on the trunk of a pear tree,” adds that “this action was fought in the pontificate of Eugenius the Fourth, in the presence of Nicholas Pistoriensis, an eminent lawyer, who related the whole history of the battle with the greatest fidelity.” A similar engagement between great and small ants is recorded by Olaus Magnus, in which the small ones, being victorious, are said to have buried the bodies of their own soldiers, but left those of their giant enemies a prey to the birds. This event happened previous to the expulsion of the tyrant Christien the Second from Sweden.” The battle which I witnessed took place in the Presidency of Polk, five years before the passage of Webster’s Fugitive Slave Bill.

5. Kirby and Spence were nineteenth-century American entomologists; François Huber (1750–1831) was a great Swiss entomologist.

6. Passed in 1851.

**Questions**

1. Thoreau uses the Latin word *bellum* to describe the battle of the ants and follows it with a reference to the Myrmidons, the soldiers of Achilles in Homer’s *Iliad*. Locate additional examples of this kind of allusion. How does it work? Why does Thoreau compare the ants to Greek soldiers?

2. Ordinarily we speak of accounts of natural events as “natural history” and accounts of human events as “history.” How does Thoreau, in this selection, blur the distinction? To what effect?

3. Look up a description of the behavior of ants in a book by one of the entomologists Thoreau refers to or in another scientific text. Compare the scientist’s style with Thoreau’s. Take another event in nature and describe it twice, once in scientific and once in allusive language. Or write an essay in which you describe and analyze the differences between the scientist’s style and Thoreau’s.

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**Barbara Tuchman** “This Is the End of the World”:
The Black Death

**IN OCTOBER 1347, TWO MONTHS AFTER THE FALL OF Calais, Genoese trading ships put into the harbor of Messina in Sicily with dead and dying men at the oars. The ships had come from the Black Sea port of Caffa (now Feodosiya) in the Crimea, where the Genoese maintained a trading post. The diseased sailors showed strange black swellings about the size of an egg or an apple in the armpits and groin. The swellings oozed blood and pus and were followed by spreading boils and black blotches on the skin from internal bleeding. The sick suffered severe pain and died quickly within five days of the first symptoms. As the disease spread, other symptoms of continuous fever and spitting of blood appeared instead of the swellings or buboes. These victims coughed and sweated heavily and died even more quickly, within three days or less, sometimes in 24 hours. In both types, everything that issued from the body—breath, sweat, blood from the buboes and lungs, bloody urine, and blood-blackened excrement—smelled foul. Depression and despair accompanied the physical symptoms, and before the end “death is seen seated on the face.”

The disease was bubonic plague, present in two forms: one that infected the armpits and groin, and was spread by contact; and a second, more virulent pneumonic type that infected the lungs and was spread by respiratory infection. The presence of both at once caused the high mortality and speed of contagion. So lethal was the disease that cases were known of persons going to bed well and dying before they woke, or doctors catching the illness at a bedside and dying before the patient. So rapidly did it spread from one to another that to a French physician, Simon de Covino, it seemed as if one sick person “could infect the whole world.” The malignity of the pestilence appeared more terrible because its victims knew no prevention and no remedy.

The physical suffering of the disease and its aspect of evil mystery were expressed in a strange Welsh lament which saw “death coming into our midst like black smoke, a plague which cuts off the young, a rootless phantom which has no mercy or fair countenance. Woe is me of the shilling in the armpit! It is seething, terrible . . . a head that gives pain and causes a loud cry . . . a painful angry knob . . . Great is its seething like a burning cinder . . . a grievous thing of ashy color.” Its eruption is ugly like the “seeds of black peas, broken fragments of brittle sea-coal . . . the early ornaments of black death.

from *A Distant Mirror: The Calamitous Fourteenth Century* (1978), in which Tuchman presents a vivid picture of life in medieval France and draws parallels between the disasters of that time and those in our own.

1: After a year-long siege, the French citizens of Calais surrendered to Edward III, king of England and self-declared king of France.
cinders of the peeling of the cockle weed, a mixed multitude, a black plague like halfpence, like berries..."

Rumors of a terrible plague supposedly arising in China and spreading through Tartary (Central Asia) to India and Persia, Mesopotamia, Syria, Egypt, and all of Asia Minor had reached Europe in 1346. They told of a death toll so devastating that all of India was said to be depopulated, whole territories covered by dead bodies, other areas with no one left alive. As added up by Pope Clement VI at Avignon, the total of reported dead reached 23,840,000. In the absence of a concept of contagion, no serious alarm was felt in Europe until the trading ships brought their black burden of pestilence into Messina while other infected ships from the Levant carried it to Genoa and Venice.

By January 1348 it penetrated France via Marseille, and North Africa via Tunis. Shipborne along coasts and navigable rivers, it spread westward from Marseille through the ports of Languedoc to Spain and northward up the Rhône to Avignon, where it arrived in March. It reached Narbonne, Montpellier, Carcassonne, and Toulouse between February and May, and at the same time in Italy spread to Rome and Florence and their hinterlands. Between June and August it reached Bordeaux, Lyon, and Paris, spread to Burgundy and Normandy, and crossed the Channel from Normandy into southern England. From Italy during the same summer it crossed the Alps into Switzerland and reached eastward to Hungary.

In a given area the plague accomplished its kill within four to six months and then faded, except in the larger cities, where, rooting into the close-quartered population, it abated during the winter, only to reappear in spring and rage for another six months.

In 1349 it resumed in Paris, spread to Picardy, Flanders, and the Low Countries, and from England to Scotland and Ireland as well as to Norway, where a ghost ship with a cargo of wool and a dead crew drifted offshore until it ran aground near Bergen. From there the plague passed into Sweden, Denmark, Prussia, Iceland, and as far as Greenland. Leaning a strange pocket of immunity in Bohemia, and Russia unattacked until 1351, it had passed from most of Europe by mid-1350. Although the mortality rate was erratic, ranging from one fifth in some places to nine tenths or almost total elimination in others, the overall estimate of modern demographers has settled—for the area extending from India to Iceland—around the same figure expressed in Froissart's casual words: "a third of the world died." His estimate, the common one at the time, was not an inspired guess but a borrowing of St. John's figure for mortality from plague in Revelation, the favorite guide to human affairs of the Middle Ages.

A third of Europe would have meant about 20 million deaths. No one knows in truth how many died. Contemporary reports were an awed impression, not an accurate count. In crowded Avignon, it was said, 400 died daily; 7,000 houses emptied by death were shut up; a single graveyard received 11,000 corpses in six weeks; half the city's inhabitants reportedly died, including 9 cardinals or one third of the total, and 70 lesser prelates. Watching the endlessly passing death carts, chroniclers let normal exaggeration take wings and put the Avignon death toll at 62,000 and even at 120,000, although the city's total population was probably less than 50,000.

When graveyards filled up, bodies at Avignon were thrown into the Rhône until mass burial pits were dug for dumping the corpses. In London in such
pits corpses piled up in layers until they overflowed. Everywhere reports speak of the sick dying too fast for the living to bury. Corpses were dragged out of homes and left in front of doorways. Morning light revealed new piles of bodies. In Florence the dead were gathered up by the Compagnia della Misericordia—founded in 1244 to care for the sick—whose members wore red robes and hoods masking the face except for the eyes. When their efforts failed, the dead lay putrid in the streets for days at a time. When no coffins were to be had, the bodies were laid on boards, two or three at once, to be carried to graveyards or common pits. Families dumped their own relatives into the pits, or burried them so hastily and thinly "that dogs dragged them forth and devoured their bodies."

Amid accumulating death and fear of contagion, people died without last rites and were buried without prayers, a prospect that terrified the last hours of the stricken. A bishop in England gave permission to laymen to make confession to each other as was done by the Apostles, "if no man is present then even to a woman," and if no priest could be found to administer extreme unction, "then faith must suffice."  Clem ent VI found it necessary to grant remissions of sin to all who died of the plague because so many were unattended by priests. "And no bells tolled," wrote a chronicler of Siena, "and nobody wept no matter what his loss because almost everyone expected death .... And people said and believed, 'This is the end of the world.'"

In Paris, where the plague lasted through 1349, the reported death rate was 800 a day, in Pisa 500, in Vienna 500 to 600. The total dead in Paris numbered 50,000 or half the population. Florence, weakened by the famine of 1347, lost three to four fifths of its citizens, Venice two thirds, Hamburg and Bremen, though smaller in size, about the same proportion. Cities, as centers of transportation, were more likely to be affected than villages, although once a village was infected, its death rate was equally high. At Givry, a prosperous village in Burgundy of 1,200 to 1,500 people, the parish register records 615 deaths in the space of fourteen weeks, compared to an average of thirty deaths a year in the previous decade. In three villages of Cambridgeshire, manorial records show a death rate of 47 percent, 57 percent, and in one case 70 percent. When the last survivors, too few to carry on, moved away, a deserted village sank back into the wilderness and disappeared from the map altogether, leaving only a grass-covered ghostly outline to show where mortals once had lived.

In enclosed places such as monasteries and prisons, the infection of one person usually meant that of all, as happened in the Franciscan convents of Carcassonne and Marseille, where every inmate without exception died. Of the 140 Dominicans at Montpellier only seven survived. Petrarch's2 brother Gherardo, member of a Carthusian monastery, buried the prior and 34 fellow monks one by one, sometimes three a day, until he was left alone with his dog and fled to look for a place that would take him in. Watching every caravan

2. Francesco Petrarch (1304–1374), Italian writer whose sonnets to "my lady Laura" influenced a tradition of European love poetry for centuries.

"This Is the End of the World": The Black Death
refused to come and make the wills of the dying;" reported a Franciscan friar of Pisa in Sicily, what was worse, "even the priests did not come to hear their confessions." A clerk of the Archdiocese of Canterbury reported the same of English priests who "turned away from the care of their benefices from fear of death." Cases of parents deserting children and children their parents were reported across Europe from Scotland to Russia. The calamity chilled the hearts of men, wrote Boccaccio in his famous account of the plague in Florence that serves as introduction to the Decameron. "One man shunned another ... kinsfolk held aloof, brother was forsaken by brother, oftentimes husband by wife; no, what is more, and scarcely to be believed, fathers and mothers were found to abandon their own children to their fate, unattended, unvisited as if they had been strangers." Exaggeration and literary pessimism were common in the 14th century, but the Pope's physician, Guy de Chaillac, was a sober, careful observer who reported the same phenomenon: "A father did not visit his son, nor the son his father. Charity was dead."

Yet not entirely. In Paris, according to the chronicler Jean de Venette, the nuns of theHôtel Dieu or municipal hospital, "having no fear of death, tended the sick with all sweetness and humility." New nuns repeatedly took the places of those who died, until the majority "many times renewed by death now rest in peace with Christ as we may piously believe."

When the plague entered northern France in July 1348, it settled first in Normandy and, checked by winter, gave Picardy a deceptive interim until the next summer. Either in mourning or warning, black flags were flown from church towers of the worst-stricken villages of Normandy. "And in that time," wrote a monk of the abbey of Fournier, "the mortality was so great among the people of Normandy that those of Picardy mocked them." The same unneighborly reaction was reported of the Scots, separated by a winter's immunity from the English. Delighted to hear of the disease that was scourging the southrons, "they gathered forces for an invasion, "laughing at their enemies." Before they could move, the savage mortality fell upon them too, scattering some in death and the rest in panic to spread the infection as they fled.

In Picardy in the summer of 1349 the pestilence penetrated the castle of Coucy to kill Enguerrand's mother, Catherine, and her new husband. Whether her nine-year-old son escaped by chance or was perhaps living elsewhere with one of his guardians is unrecorded. In nearby Amiens, tannery workers, responding quickly to losses in the labor force, combined to bargain for higher wages. In another place villagers were seen dancing to drums and trumpets, and on being asked the reason, answered that, seeing their neighbors die day by day while their village remained immune, they believed they could keep the plague from entering "by the jollity that is in us. That is why we

3. Giovanni Boccaccio (1313–1375), Italian writer best known for his collection of stories, The Decameron, in which seven young ladies and three young men flee from Florence to escape the Black Death and tell stories to while away the time.

4. Enguerrand de Coucy, a French nobleman, is the historical figure around whom Tuchman constructs her account of the fourteenth century.
turies, people felt, in Walsingham's words, that "the world could never again regain its former prosperity."

Though the death rate was higher among the anonymous poor, the known and the great died too. King Alfonso XI of Castile was the only reigning monarch killed by the pest, but his neighbor King Pedro of Aragon lost his wife, Queen Leonora, his daughter Marie, and a niece in the space of six months. John Cantacuzene, Emperor of Byzantium, lost his son. In France the lame Queen Jeanne and her daughter-in-law Bonne de Luxembourg, wife of the Dauphin, both died in 1349 in the same phase that took the life of Enguerrand's mother. Jeanne, Queen of Navarre, daughter of Louis X, was another victim. Edward III's second daughter, Joanna, who was on her way to marry Pedro, the heir of Castile, died in Bordeaux. Women appear to have been more vulnerable than men, perhaps because, being more housebound, they were more exposed to fleas. Rocca's mistress Flammetta, illegitimate daughter of the King of Naples, died, as did Laura, the beloved—whether real or fictional—of Petrarch. Reaching out to us in the future, Petrarch cried, "Oh happy posterity who will not experience such abysmal woe and who will look upon our testimony as a fable."

In Florence Giovanni Villani, the great historian of his time, died at 68 in the midst of an unfinished sentence: "... e dure questo pestilenza fino a ..." (in the midst of this pestilence there came to an end ... ). Siena's master painters, the brothers Ambrogio and Pietro Lorenzetti, whose names never appear after 1348, presumably perished in the plague, as did Andrea Pisano, architect and sculptor of Florence. William of Ockham and the English mystic Richard Rolle of Hampole both disappear from mention after 1349. Francisco Datini, merchant of Prato, lost both his parents and two siblings. Curious sweeps of mortality afflicted certain bodies of merchants in London. All eight wardens of the Company of Cutters, all six wardens of the Marters, and four wardens of the Goldsmiths died before July 1350. Sir John Putteney, master draper and four times Mayor of London, was a victim, likewise Sir John Montgomery, Governor of Calais.

Among the clergy and doctors the mortality was naturally high because of the nature of their professions. Out of 24 physicians in Venice, 20 were said to have lost their lives in the plague, although, according to another account, some were believed to have fled or to have shut themselves up in their houses. At Montpellier, site of the leading medieval medical school, the physician Simon de Covino reported that, despite the great number of doctors, "hardly one of them escaped." In Avignon, Guillaume Chauliac confessed that he performed his medical visits only because he dared not stay away for fear of infamy, but "I was in continual fear." He claimed to have contracted the disease but to have cured himself by his own treatment; if so, he was one of the few who recovered.

Clerical mortality varied with rank. Although the one-third toll of cardinals reflects the same proportion as the whole, this was probably due to their concentration in Avignon. In England, in strong and almost sinister procession, the Archbishop of Canterbury, John Stratford, died in August 1348, his appointed successor died in May 1349, and the next appointee three months later, all three within a year. Despite such weird vagaries, prelates in general managed to sustain a higher survival rate than the lesser clergy. Among bishops the deaths have been estimated at about one in twenty. The loss of priests, even if many avoided their fearful duty of attending the dying, was about the same as among the population as a whole.

Government officials, whose losses contributed to the general chaos, found, on the whole, no special shelter. In Siena four of the nine members of the governing oligarchy died, in France one third of the royal notaries, in Bristol 15 out of the 52 members of the Town Council or almost one third. Tax-collecting obviously suffered, with the result that Philip VI was unable to collect more than a fraction of the subsidy granted him by the Estates in the winter of 1347-48.

Lawlessness and debauchery accompanied the plague as they had during the great plague of Athens of 430 B.C., when according to Thucydides, men grew bold in the indulgence of pleasure: "For seeing how the rich died in a moment and those who had nothing immediately inherited their property, they reflected that life and riches were alike transitory and they resolved to enjoy themselves while they could." Human behavior is timeless. When St. John had his vision of plague in Revelation, he knew from some experience or race memory that those who survived "repented not of the work of their hands. ... Neither repented they of their murders, nor of their sacrileges, nor of their fornication, nor of their thefts."

Ignorance of the cause augmented the sense of horror. Of the real carriers, rats and fleas, the 14th century had no suspicion, perhaps because they were so familiar. Fleas, though a common household nuisance, are not once mentioned in contemporary plague writings, and rats only incidentally, although folklore commonly associated them with pestilence. The legend of the Pied Piper arose from an outbreak of 1284. The actual plague bacillus, Pasteurella pestis, remained undiscovered for another 500 years. Living alternately in the stomach of the flea and the bloodstream of the rat who was the flea's host, the bacillus in its bubonic form was transferred to humans and animals by the bite of either rat or flea. It traveled by virtue of Rattus rattus, the small medieval black rat that lived on ships, as well as by the heavier brown or sewer rat. What precipitated the turn of the bacillus from innocuous to virulent form is obviously lost, although folk lore was common that those who survived the great plague in 1348-50 were immune to future attacks; this now is known to be true. And the belief that such people were "magic men" or that the plague was "the end of the world" is not far from the facts. In Florence Giovanni Villani, the great historian of his time, died at 68 in the midst of an unfinished sentence: "... e dure questo pestilenza fino a ..." (in the midst of this pestilence there came to an end ...).
the infection to Europe "and now as some suspect it cometh round the seacoast." Accurate observation in this case could not make the mental jump to ships and rats because no idea of animal- or insect-borne contagion existed.

The earthquake was blamed for releasing sulfurous and foul fumes from the earth's interior, or as evidence of a titanic struggle of planets and oceans causing waters to rise and vaporize until fish died in masses and corrupted the air. All these explanations had in common a factor of poisoned air, of miasmas and thick, stinking mists traced to every kind of natural or imagined agency from stagnant lakes to malign conjunction of the planets, from the hand of the Evil One to the wrath of God. Medical thinking, trapped in the theory of astrological influences, stressed air as the communicator of disease, ignoring sanitation or visible carriers. The existence of two carriers confused the trail, the more so because the flea could live and travel independently of the rat for as long as a month and, if infected by the particularly virulent septicemic form of the bacillus, could infect humans without reinfesting itself from the rat. The simultaneous presence of the pneumatic form of the disease, which was indeed communicated through the air, blurred the problem further.

The mystery of the contagion was "the most terrible of all the terrors," as an anonymous Flemish cleric in Avignon wrote to a correspondent in Bruges. Plagues had been known before, from the plague of Athens (believed to have been typhus) to the prolonged epidemic of the 6th century A.D., to the recurrence of sporadic outbreaks in the 12th and 13th centuries, but they had left no accumulated store of understanding. That the infection came from contact with the sick or with their houses, clothes, or corpses was quickly observed but not comprehended. Gentile de Foligno, renowned physician of Perugia and doctor of medicine at the universities of Bologna and Padua, came close to respiratory infection when he surmised that poisonous material was "communicated by means of air breathed out and in." Having no idea of microscopic carriers, he had to assume that the air was corrupted by planetary influences. Plagues, however, could not explain the ongoing contagion. The agonized search for an answer gave rise to such theories as transference by sight. People fell ill, wrote Guy de Chauliac, not only by remaining with the sick but "even by looking at them." Three hundred years later Joshua Barnes, the 17th-century biographer of Edward III, could write that the power of infection had entered into beams of light and "dared death from the eyes."

Doctors struggling with the evidence could not break away from the terms of astrology, to which they believed all human physiology was subject. Medicine was the one aspect of medieval life, perhaps because of its links with the Arabs, not shaped by Christian doctrine. Classic astrologers, but could not dislodge its influence. Guy de Chauliac, physician to three popes in succession, practiced in obedience to the zodiac. While his Cirurgia was the major treatise on surgery of its time, while he understood the use of anesthesia made from the juice of opium, mandrake, or hemlock, he nevertheless prescribed bleeding and purgatives by the planets and divided chronic from acute diseases on the basis of one being under the rule of the sun and the other of the moon.

In October 1348 Philip VI asked the medical faculty of the University of...
79°

The apparent absence of earthly cause gave the plague a supernatural and sinister quality. Scandinavians believed that a Pest Maiden emerged from the mouth of the dead in the form of a blue flame and flew through the air to signify the people. "A black dog with a drawn sword in his paws appeared among them, gnashing his teeth and rushing upon them and breaking all the silver vessels and lamps and candlesticks on the altars and casting them hither and thither . . . so the people of Messina, terrified by this prodigious vision, were all strangely overcome by fear."

The Pope acknowledged it in a Bull of September 1348, speaking of the "pestilence with which God is afflicting the Christian people." To the Emperor John Cantacuzene it was manifest that a malady of such horrors, stenches, and agonies, and especially one bringing the dismal despair that settled upon its victims before they died, was not a plague "natural" to mankind but "a chastisement from Heaven." To Piers Plowman, "these pestilences were for pure sin."

The general acceptance of this view created an expanded sense of guilt, for if the plague were punishment there had to be terrible sin to have occasioned it. What sins were on the 14th century conscience? Primarily greed, the sin of avarice, followed by usury, worldliness, adulteries, blasphemy, falsehood, luxury, and religious. Giovanni Villani, attempting to account for the cascade of calamity that had fallen upon Florence, concluded that it was retribution for the sins of avarice and usury that oppressed the poor. Pity and anger about the condition of the poor, especially victimization of the peasantry in war, was often expressed by writers of the time and was certainly on the conscience of the century. Beneath it all was the daily condition of medieval life, in which hardly an act or thought, sexual, mercantile, or military, did not contravene the dictates of the Church. Mere failure to fast or attend mass was sin. The result was an underground lake of guilt in the soul that the plague now tapped.

That the mortality was accepted as God's punishment may explain in part the vacuum of comment that followed the Black Death. An investigator has noticed that in the archives of Perigord references to the war are innumerable, to the plague few. Froissart mentions the great death but once, Chaucer gives it barely a glance. Divine anger so great that it contemplated the extermination of man did not bear close examination.

5. The main character (and title) of a fourteenth-century poem by the English poet William Langland (c. 1330–c. 1386).

QUESTIONS

1. Why does Tuchman begin with the account of the Genoese trading ships?

2. What ways does Tuchman find to group related facts together—in other words, what categories does she develop? Suggest other categories that Tuchman might have used in arranging her facts. What would she have gained or lost by using such categories?

3. Can you determine a basis for Tuchman's decision sometimes to quote a source, sometimes to recount it in her own words?

4. Write a brief account of a modern disaster, based on research from several sources.