

Final Essay
“Black Death, Agitator to the Renaissance”

Russell J Lowke, May 17th, 1999.

An underestimated factor in the cause of the Renaissance is the Black Death, not primarily because of reformations created to combat plague, but rather through disruption caused by plague to the existing feudal system. “Black Death” referring to the instance of plague occurring in Europe between 1347 and 1352.¹ Plague affected the whole population, not just a small elite, stirring the social and economic situation and allowing new order to filter in over the next 200 years. The calamity of the Black Death by itself did not directly cause the Renaissance, quite the opposite, the chaos that raged was extensive and psychologically shattering to the population. Reforms to combat plague sometimes resulting in further disruption rather than alleviating damage. One thousand years passed since the end of the classical era before Europe could emerge out of what became known as the Middle Ages and into the Renaissance. This all occurred relatively soon after the cleansing effects of the Black Death.

The focus of this essay revolves around six main compositions, the instigator of which is a piece by Barbara Tuchman, called “This is the end of the World - The Black Death,” published in “Fields of Reading.” Tuchman describes in graphic detail the Black Death and traces the plagues progress through Europe.² Two of the six selected articles emerged during times of potentially reemerging disease: “Responses to Plague in Early Modern Europe,” by Paul Slack,³ was prompted by the A.I.D.S. virus and “The History and Geographic Distribution of Bubonic

¹ Rene Skelton, “The great plague,” *National Geographic World*, 253.3, (1999): 19. A sister publication of the very successful magazine National Geographic, specializing on a younger audience. This article contains a very helpful chronology of plagues.

² Barbara Tuchman, “This is the end of the World,” *Fields of Reading, 5th Ed*, (New York: St Martins Press, 1998): 219-227.

³ Paul Slack, “Responses to Plague in Early Modern Europe,” *Social Research*, 55.3, (Autumn 1988): 433-453. Part of a number of articles on epidemics that appeared in the Autumn 1988 edition of “Social Research.” This edition was called “In time of Plague” and had been inspired by the prevalence of the A.I.D.S. virus with its looming threat of a new epidemic.

Plague,” by George M Sternburg, dated March 1900, was triggered by a fear of plague arriving in the United States.⁴ The other three sources are: “The Great Plague” by Renee Skelton, a recent article printed March 1999. It’s good to see that knowledge of plague is still of some interest.⁵

“History of Western Civilization” by Dr E. L. Skip Knox, a text used by Boise State University, it includes a chapter devoted to Black Death,⁶ and “Plague in England” by Anne Roberts, published in “History Today.”⁷ England of all the European countries, appears to have the most detailed surviving accounts of Plague.

The Black Death represents a low point between the classical era of Rome and Europe's ascent into the Renaissance. The end of the classical era is thought to be the fall of the Western Roman empire, marked by the Visigoth sacking of Rome in AD 410. After this, Western Europe entered the Middle or Dark Ages, an era characterized by barbarian invasions from the Eurasian steppe. These invasions had an enormous impact in the west, as much of the technological advances of the classical era were lost. Secular education died out altogether and this period was marked by constant warfare. It was only through the Eastern half of the empire, known as the Byzantine Empire, that classical knowledge was sustained. The Byzantine empire fell to the Ottoman Turks when its capitol, Constantinople, fell in May 1453, marking the end of one of history's longest

⁴ George M. Sternberg, “History and Geographic Distribution of Bubonic Plague,” *National Geographic Magazine*, (March 1900): 97. At the time of this article Bubonic plague had aroused considerable apprehension as it had been appearing on U.S owned islands and also in Portugal and Brazil. More than one vessel had arrived at the port of New York with cases of the disease on board and at the time it was thought that bubonic plague had never prevailed within the United States.

⁵ Rene Skelton, 16-20.

⁶ E. L. Skip Knox, “The Black Death,” *History of Western Civilization*, (Boise State University, 1995): <<http://history.idbsu.edu/westciv/plague/>> [cited April 12th, 1999]. Dr Knox describes the Middle Ages as “characterized as a period of crisis and trouble.”

⁷ Ann Roberts, “Plague in England,” *History Today*, Vol 30, (April 1980): 29-33.

standing empires. The Byzantine exiles fled west to Italy, bringing with them their knowledge, particularly of classical Greek and heralding the onset of the Renaissance.⁸

Traditional historical thinking has so intertwined the fall of Constantinople with the Renaissance that sometimes it's actually used to define the beginning of the Renaissance. A good example of this can be seen in the first lines of "The New Cambridge Modern History - The Renaissance."⁹ Contemporary thinking has variously placed the Renaissance as beginning in the thirteenth, fourteenth or fifteenth century, depending on the region of Europe and other factors.¹⁰

The Renaissance is said to have begun early in Italy, particularly in Florence where it was thought to have begun in 1402 with the advent of proposals and designs for new architecture.¹¹ This had occurred some 50 years after Black Death abated in 1352. It is known that Sicily and Italy were of the first countries hit by the Black Death in Central Europe, and in Florence the plague was so bad that it is noted that "Unfinished cathedrals dotted the countryside... Many cathedrals would not be finished for a hundred years or more as the stone cutters, artisans and laborers were all dead."¹²

Many of these buildings were finished in the Renaissance era.

When looking at disease it is important to know that there are three accepted levels:

Endemic, a disease that exists in an area permanently, at normal levels of occurrence. Epidemic, the

⁸ Kenneth M Setton, "The Byzantine background to the Italian Renaissance," *Proceedings of the American Philosophical Society*, 100, no.1, (1956): 1-76.

⁹ G.R. Potter, *New Cambridge Modern History, The Renaissance 1493-1520*, (Cambridge University Press, 1957): 1.

¹⁰ "Middle Ages", *Encyclopædia Britannica Online*, <<http://www.eb.com:180/bol/topic?eu=53849&sctn=1>>, [cited April 12th, 1999].

¹¹ "Architecture, history of Western," *Encyclopædia Britannica Online*, <<http://www.eb.com:180/bol/topic?eu=119565&sctn=2>>, [cited April 12th, 1999].

¹² Margaret Dimond, "Black Death," *Discovery Channel Online*, <<http://www.discovery.com/stories/history/blackdeath/blackdeath.html>>, [cited April 12th, 1999].

outbreak of a disease among many people at the same time, above normal levels, spreading rapidly during epidemics. Pandemic, a widespread - often worldwide - outbreak of disease.¹³ The Black Death was not merely an epidemic but a pandemic, and to understand why the Black Death was so virulent, leaving such a great void in the population of Europe, we need to examine plague itself.

Plague is “an acute, often fatal, and potentially epidemic disease caused by infection with the bacillus *Yersinia pestis*,”¹⁴ more recently referred to as the “Bubonic Plague”. Transmitted by the rat flea and primarily a disease of rodents, epidemics in humans originate from contact with the fleas of infected rodents. The disease in man has three clinical forms: Bubonic, the most common form, appears to be the most widespread form during the Black Death and is characterized by swelling of the lymph nodes that bulge and form dark pustular buboes, hence our colloquial term boo-boo, used to describe childhood injuries.¹⁵ Pneumonic, the most dangerous form, is extremely fatal where the lungs are the primary seat of the infection. Typically there are no buboes, but the cases are marked at the outset by a profound depression of the vital powers, by violent vomiting of blood, cadaveric paleness, a rapidly failing pulse, and death within a few hours.¹⁶ Lung lesions develop and break down, so that the suffering coughs blood-stained sputum teeming with plague making them a dangerous source of airborne infection. Some authorities believe that plague is more likely to take the pneumonic form during winter, as the rat flea associated with the

¹³ Rene Skelton, 18.

¹⁴ Kenneth L. Gage, “Prevention of Plague,” *Center for Disease Control Online*, <<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00044836.htm>>, [April 12th, 1999].

¹⁵ Fred Jueneman, *The Black Plague spread by trade*, (Reed Publishing, Dec 1998 v40): 11.

¹⁶ George M. Sternberg, 98.

Bubonic form hibernates during these months. Septicemic, in which the bloodstream is so invaded by *Yersinia pestis* that death ensues before the bubonic or pneumonic forms have had time to appear.¹⁷

The spread of the infection among rodents in the vicinity of human dwellings creates conditions favorable for outbreaks of a human plague. When an outbreak reduces the rodent population, fleas from the dead animals fail to find another rodent host and thus begin to infest man. Plague is transmitted to human beings by bites from infected fleas or rats or by close contact with an infected person.¹⁸ The typical Bubonic Plague of the Black Death is mainly carried by rats, and rats are attracted by filth. Sternber, in his “History and Geographic distribution of Bubonic Plague” confirms this:

All authorities agree that filth, famine and overcrowding of dwellings are potent factors in the propagation of the plague, and it is for this reason that it is to a large extent a disease of the poor, and that epidemics are especially liable to occur during times of distress from insufficient harvests or the ravages of war.¹⁹

The feudal system and Hundred Years years war between England and France promoted an era of decay in public heath that had reached its peak with the Black Death. As hygiene in the cities was abominable, the very filth allowed plague to flourish. The streets in London were crowded and dirty, people threw old food, excrement, and other waste into the street. The garbage brought rats, which infested streets and houses. Without running water, people seldom bathed, body lice and fleas abounded.²⁰ The standard of living in Europe had reached a point where the requirements for

¹⁷ Ann Roberts, 30.

¹⁸ “Infection,” *Encyclopædia Britannica Online*, <<http://www.eb.com:180/topic?idxref=109283&sctn=14>> [cited April 12th, 1999].

¹⁹ George M Sternberg, 105.

²⁰ Rene Skelton, 18.

a pandemic of bubonic plague were met. Plague did not suddenly appear in the fourteenth century for the first time, plague had been dormant, having visited in epidemic proportions at least twice previously, once in 1300 BC and again in 541 AD.²¹ The Dark Ages had brought about the social and economic conditions that allowed the plague to reemerge and tear through the continent.

Europe suffered. The composition of plague in the Black Death was probably both bubonic and pneumonic, taking a proportionately greater toll of life than any other known epidemic or war up to that time.²² Although deaths were not recorded for the general population in fourteenth-century Europe, it is possible to estimate figures based upon known deaths among the clergy. Records note whenever a new death was instituted and about 40% of the clergy needed replacing, rising to 66% in heavily populated areas.²³ Unfortunately Tuchman warns us of using the mortality rates of the clergy and doctors as “their mortality was naturally high because of the nature of their professions”²⁴ placed them in close contact with the infected and dying. The death toll has been variously estimated at from one-fourth to three fourths of the entire population of Europe. Certainly it was not less than 20,000,000 people.²⁵ Iceland was very hard hit by the plague where it is thought to have killed as many as forty thousand people - two thirds of the population of Iceland.²⁶ Parts of Europe did not recover their pre-plague population until the seventeenth

²¹ George M Sternberg, 97.

²² “Black Death,” *Encyclopædia Britannica Online*, <<http://www.eb.com:180/topic?idxref=288946>>, [cited April 12th, 1999].

²³ Ann Roberts, 30.

²⁴ Barbara Tuchman, 226.

²⁵ Ralph A Graves, “Fearful Famines of the Past,” *National Geographic Magazine*, (July 1917): 82.

²⁶ Michael Specter, “Decoding Iceland,” *The New Yorker*, (Jan 18, 1999): 40.

century,²⁷ further strengthening the argument that plague opened opportunities for reforms permitting the Renaissance. The widely accepted estimate of plague-provoked mortality in Europe, by Black Death, is that of about one third of the total population. It clearly varied sharply from community to community and in ways no one could in the least understand.²⁸ It is sobering to realize that up until 1943, when antibiotics reduced plague to a triviality, the average mortality remained between 60 and 70 per cent of those affected by bubonic plague.²⁹

The psychological effects of the plague on Europe were devastating. The reaction from public officials, and from many churchmen, was that plague was a disease.³⁰ The general populace, however, felt otherwise. Many thought that it was divine wrath, especially as there were godlike features in the spread of plague. It missed some towns in its transit along major highways, some houses in its movement along a street, some individuals in its progress through a household.³¹ The living lost all sense of morality and justice, and a new attitude toward the church emerged as people could find no Divine reason for the four-year nightmare. Dissatisfaction with the church gave impetus to reform movements that eventually broke apart the unity of the Catholic Church. Many moved towards mysticism and some became flagellants, who were bands of fanatics who wandered through towns and countryside doing penance in public and had a tendency to kill Jews that they encountered and even clergymen who spoke against them.³² Priests and elderly scholars, the

²⁷ E. L. Skip Knox, <<http://history.idbsu.edu/westciv/plague/15.htm>>, [cited April 12th, 1999].

²⁸ William H. McNeil, *Plagues & Peoples*, (New York: Anchor press, 1974): 149.

²⁹ William H. McNeil, 149.

³⁰ E. L. Skip Knox, <<http://history.idbsu.edu/westciv/plague/09.htm>>, [cited April 12th, 1999].

³¹ Paul Slack, 435.

³² Margaret Dimond, <<http://www.discovery.com/stories/history/blackdeath/blackdeath.html>>, [cited April 12th, 1999].

holders of knowledge, died in unprecedented numbers. In England, from the days of the Norman Conquest, the keys of education had been locked away in the languages of Latin and French. Into the vacuum left by the dead clergy and teachers flowed new ideas. The revolutionary use of informal language in education allowed the common person to become educated. After the plague, concern for the survival of learning drove the founding of new universities across Europe. Only five years after the Black Death abated, England created three new colleges at Cambridge.³³ Education, partly removed from the imposition of church, helped learning to flourish and contributed greatly to paving the way for the Renaissance.

Outbreak of plague initiated desperate attempts to curb it, many of which were futile. The primary cause of the disease, fleas from rats, remained unknown right up until the end of the nineteenth century. The most effective preventative cure for plague was simply to run from it. In the initial and devastating cases of plague this was also the most common reaction, resulting in the depopulation of whole towns. Unfortunately, this whole scale abandonment of duties further resulted in famine, bringing about even more suffering. Some of the attempts to fight plague actually incensed it, or inflicted further suffering on the people already ailing from plague. Many of these reforms were the first steps in improvement, eventually shaping the concepts and practices of “public health” ever since.³⁴

Medical thought struggled deeply with the mystery of Plague, starting to initiate new procedures. The plague attacked the lymph system and pouts became infected causing the buboes. It was assumed that open pouts invited infection, and the medical community advised abstention

³³ Margaret Dimond, <<http://www.discovery.com/stories/history/blackdeath/blackdeath.html>>, [cited April 12th, 1999].

³⁴ Paul Slack, 433.

from bathing lest the pores be opened inviting plague. Cleanliness was rejected as plague cure. Cities like London remained filthy, and subsequently continued to receive frequent and devastating plague visits, 17 cases of which occurred between the end of Black Death and 1666. Eventually it became evident that cleanliness was prevention from disease. The smell of plague was associated with the spread of the disease. This bad air was known as “miasma.” and people wrongly believed that the horrid stench was the carrier of dread plague. It clung to infected towns and it could be attacked there by fumigants and perfumes of various kinds and also be transported - in cloths, bedding, baggage of infected people, or on their persons.³⁵ Many measures were taken to purify the smell. Doctors would wear long beaks containing herbs to purify the air and people would carry the pleasant smell of a posy of fragrant herbs to prevent contagion from miasma and ward off plague.³⁶ In general, it was felt that the sick and anything connected with them should be avoided.

During epidemics of bubonic plague, the towns first developed sophisticated mechanisms intended to control the spread of epidemic disease and to absolve its effects. Plague victims were isolated and their contacts traced. Infected houses were identified and contact with their inmates prevented - either by removing the sick to special hospitals (pesthouses or lazarettos) or by sealing the houses with the inhabitants still inside them for a fixed period, sometimes a month.³⁷

Movement restrictions were placed on plague victims. Bills of health, quarantine regulations for travelers and shipping became introduced. Bedding and houses were fumigated. Bans on the movement of goods and people from infected towns began in 1348, regulations becoming ever

³⁵ Paul Slack, 437.

³⁶ Ann Roberts, 33.

³⁷ Paul Slack, 443.

more sophisticated in the following centuries. An infected city found itself ostracized and was granted help from outside only on condition that it maintained itself in isolation.³⁸ All this necessitated the growth of local administrative machines and an expression of state power. It also implied serious restrictions on individual liberty and provoked opposition for that reason. These conflicts between public and private interests and between medically informed prudence and popular morality, can first be fully documented in Europe during the age of plague.³⁹

Major efforts to improve sanitation included the development of pure water supplies, garbage and sewage disposal, and food inspection. These efforts were especially important in the cities, where people lived in crowded conditions in a rural manner with many animals around their homes.⁴⁰ In England, the council of Edward III proclaimed between 1369 and 1371 a series of public health decrees for London. Slaughter house waste could no longer be dumped in the streets, nor in the streams and brooks that fed the Thames. All rubbish and garbage had to be carried to a dump. Eventually, the slaughter of animals on the streets rather than the shops and most aspects of noxious industries such as textile dying, fulling, leather working and tanning were banned. The catalyst in all of these improvements was plague.⁴¹

Slack argues that all these reforms necessitated the growth of local administrative machines and an expression of state power that was necessary to organize pesthouses, social control and

³⁸ Paul Slack, 441.

³⁹ Paul Slack, 433.

⁴⁰ "Public health," *Encyclopædia Britannica Online*, <<http://www.eb.com:180/bol/topic?eu=63744&sctn=1>>, [cited April 12th, 1999].

⁴¹ Robert S. Gottfried, "European Plagues," *Dictionary of the Middle Ages, book 9*, eds. Joseph Reese, (New York 1987): 679.

decorum.⁴² As subsequent occurrences of plague became less devastating, magistrates, counselors and those in public authority generally remained in an infected town, or a sufficient number of them did so. Sending away wives and children first, they stayed in greater numbers depending on the size of the epidemic, and they observed the progress of the plague more closely as time went on. Public officials developed a policy for public health which testified to their dedication to strict government and public order, even if at some personal risk to themselves. Roberts gives us insight into who left and stayed, telling us that “The quality are wont to leave town.” The King and court left, as did most of the doctors and clergy. London's government was largely held together by three men, the Duke of Albemarle, the Earl of Craven and Sir William Lawrence.⁴³

Finance was needed for the fumigation or destruction of the clothes and bedding of the sick, the infected and their families had to be supported and if poor, from public funds. Officials had to be appointed for these tasks and special commissions - boards of health - set up to undertake the day to day supervision of which the task demanded. Not all this was achieved at once, but had been fully implemented in Italian towns by 1500, in the rest of western Europe by 1600, in central Europe and Russia by 1700.⁴⁴

Unfortunately sometimes the measures against plague could be attacked as counterproductive. In towns, infected houses were marked, usually with a cross and the words “Lord have mercy upon us.” The inhabitants were shut up within, sick and well together.⁴⁵ It was

⁴² Paul Slack, 433.

⁴³ Ann Roberts, 32.

⁴⁴ Paul Slack, 442.

⁴⁵ Ann Roberts, 33.

believed that this practice of shutting up the victims of plague with their families increased rather than reduced contagion. It is equally plausible to argue however, that some sacrifices had to be made for the common good, the policies of locking healthy persons up with plague victims and isolating whole districts often resulted in extra loss of life. In major outbreaks, even the richest cities could not provide pest houses for all the sick; neither could they be supported from public funds in their own homes. Often the sick would break out, spilling into the streets. Declaration of plague houses became misused and a methodology to settle old scores. As bubonic plague was spread by fleas on rats, the sealing of houses with the inhabitants still inside was often ineffective, neglecting to contain the rodents while killing the citizens. This practice was greatly despised and considered unethical. Plague carriers became criminals if found outside a pesthouse. Although many of these practices often caused further damage to the population, their very existence set the field for better organized community and forms of government.

One of the most significant and enduring conventions introduced due to plague was that of Quarantine. The growth of maritime trade and the recognition that plague was introduced by ships returning from the Levant led to the adoption of quarantine in Venice. It was decreed that ships were to be isolated for a limited period to allow for the disease and to dissipate the infection. Originally the period was 30 days, trentina, but this was later extended to 40 days, quarantine. The choice of this period is said to be based on the period that Christ and Moses spent in isolation in the desert. In 1423 Venice set up its first lazaretto, or quarantine station, on an island near the city. The Venetian system became the model for other European countries and the basis for widespread

quarantine control for several centuries.⁴⁶ Quarantine was considered a nuisance and severely hindered trade. The cure was almost intolerable. Many cities introduced various variations on quarantine. Sternber states that the incubation period of bubonic plague (the time which elapses between exposure to infection) is comparatively short, usually from three to six days, therefore the inflicted period of quarantine was somewhat cautious. As uncomfortable as all this was, the quarantine worked. Since the classical age and prior to this era of plague, preventative medicine was almost an unheard of concept. After plague preventative medicine became a very real way of combating disease.

The plague destroyed much of the labor force of Europe. With plague came famine, as with such a large percentage of the population eliminated cultivation of the fields was utterly impossible. There were not even enough able-bodied laborers to gather the crops which had matured. Cattle roamed through the corn unmolested and the harvest rotted where it stood. Famine is a cause of death which it is easy to forget for, like the plague, it has substantially disappeared from rich European countries. Mortality from starvation in a famine year seems to have been substantial: one estimate puts this as high as 6%. Food shortage tended to hit wide areas regardless of population density, with winter the hungriest time, while summer was plague-time. Starvation killed a different section of the population from plague, usually those less independent for support, such as children, beggars and widows. Plague, on the other hand, was more common in the crowded rat infested hovels of the poor townspeople.⁴⁷ A vacuum was created that allowed laborers to demand higher

⁴⁶ "Quarantine," *Encyclopædia Britannica Online*,

<<http://www.eb.com:180/bol/topic?eu=63744&sctn=1>>, [cited April 12th, 1999].

⁴⁷ Ann Roberts, 31.

wages. Out of this situation grew the first great clashes between capitol and labor. For the first time in history there were serious conflicts between ruling class and the common man resulting in very serious repercussions and attempts to hold the working class in the state they were in before plague years. The peasants became masters of the situation. In some instances they demanded double wages, and whereas formerly land owners had paid one-twelfth of every quarter of wheat as the harvesting wage, they were now forced to pay one-eighth.⁴⁸ Manpower shortages came to be widely felt in agriculture and other humble occupations; the socioeconomic pyramid was altered and Europe entered upon a an era embracing diversity and patterns that had not prevailed before 1346.⁴⁹ Not only was there a shortage of labor, causing wages to rise, there was also a shortage of tenants, causing land rents to drop. The effectiveness of labor shortage due to plague, to dislocate the feudal status quo was beyond parallel, that the eventual result was a better standard of living for the workers and polices put in place for the first time that gave them some rights.

In a grass roots way the population of Medieval Europe was disrupted to a point that changes could finally take place that would bring them out of the Middle Ages. The reintroduction of classical thought from Constantinople, by displaced Byzantine scholars and clergy contributed to the Renaissance, but I feel that it is unlikely that they would have had such tremendous effect were it not for the previous disorder introduced by plague. After all, the Byzantine Empire had been the inheritors of said same classical knowledge for some time and they were not by any means much further abreast socially or technologically than Europe at the time of Constantinople's collapse. It seems more likely that the Renaissance was helped into existence by five major factors instigated by

⁴⁸ Ralph A Graves, 82.

⁴⁹ William H. McNeil, 150.

plague: Advancement in city organization and governing power, put into place due to plague necessitated regulations. Sanitation improvements. Emergence of the labor force from peasant feudalism, caused by the labor shortage. Movement of education away from the church including use of the vernacular in education. Openings in many professions, particularly architecture. The Black Death shook the very foundations of Medieval Europe and the generations to follow could freely introduce new thought, paving the way for the onset of the Renaissance.

Bibliography

- Appleby, Andrew B. "The Disappearance of Plague," *Economic History Review*, [Great Britain] 33(2), 1980.
- Baldwin, Martha R. "Toads and Plague," *Bulletin of the History of Medicine*, 67(2), 1993.
- Blaser, Martin J. "Passover and plague," *Perspectives in Biology and Medicine*, v41. Winter 1998.
- Conniff, Richard. "My dog has fleas, also my cat, my bird, my..." *Smithsonian Magazine*, July 1995.
- Dimond, Margaret "Black Death," *Discovery Channel Online*,
<<http://www.discovery.com/stories/history/blackdeath/blackdeath.html>> [cited April 12th, 1999].
- Encyclopædia Britannica Online* <<http://www.eb.com:180>>[cited April 12th, 1999].
- Foege, William H. "Plagues: Perceptions of Risk and Social Responses," *Social Research*, 55(3). 1988.
- Gage, Kenneth L. "Prevention of Plague," *Center for Disease Control Online*,
<<http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00044836.htm>>, [cited April 12th, 1999].
- Gottfried, Robert S. "Plagues, European," *Dictionary of the Middle Ages. book 9*. Ed. Strayer, Joseph Reese, (New York: Simon & Schuster Macmillan, 1987): 672-683.
- Graves, Ralph A. "Fearful Famines of the Past," *National Geographic Magazine*, (National Geographic Society, July 1917): 69-90.
- Hart, Sterling. "The Historical Impact of Disease," *Strategy and Tactics*, (63), 1977.
- Knox, E. L. Skip. "The Black Death," *History of Western Civilization*, Boise State University, 1995,
<<http://history.idbsu.edu/westciv/plague/index.html>>, (cited April 12th, 1999).
- Maddicott, J. R. "Plague in Seventh-Century England," *Past & Present*, n156, August 1997.
- Marshall, Louise. "Manipulating the Sacred: Image and Plague," *Renaissance Quarterly*, 47(3), (1994): 485-532.
- McKisack, May. *The Fourteenth Century*, (Oxford University Press, 1959): 331-333.
- McNeil, William H. *Plagues & Peoples*, (New York: Anchor press, 1976): 147-155.
- Moser, Robert H. "Of Plagues and Pennants", *Military Review*, 45(5), (1965).

- Platt, Colin. *King Death: The Black Death and its Aftermath*, (University of Toronto Press, 1966).
- Potter, G.R. *The New Cambridge Modern History, The Renaissance 1493-1520*, (Cambridge, 1957).
- Quinton, Anthony. "Plagues and Morality," *Social Research*, 55(3), (1988).
- Richards, David A. J. "Human Rights, Public Health, and the Idea of Moral Plague," *Social Research*, 55(3), (1988).
- Roberts, Anne. "The Plague in England," *History Today*, [Great Britain] 30, (Apr 1980): 29-33.
- Setton, Kenneth M., "The Byzantine background to the Italian Renaissance," *Proceedings of the American Philosophical Society*, 100, no.1, (1956): 1-76.
- Skelton, Rene. "The great plague," *National Geographic World*, #1283, 16(5), (March 1999): 16-20.
- Slack, Paul. "Responses to Plague in Early Modern Europe," *Social Research*, 55(3), (1988): 433-453.
- Specter, Michael. "Decoding Iceland," *The New Yorker*, (Jan 18 1999): 40-51.
- Sternberg, George M. "History and Geographic Distribution of Bubonic Plague," *National Geographic Magazine*, (March 1900): 97-113.
- Swales, R.J.W. "Plague, Population and Ecology in Early Modern England," *Canadian Journal of History*, [Canada] 14(2), (1979).
- Tuchman, Barbara. "This is the end of the World," *Fields of Reading*. Eds. Comely, Hamilton, Klaus, Scholes and Sommers. (New York: St Martins Press, 1998): 219-227.
- Wills Christopher. "Yellow Fever Black Goddess," *Scientific American*, (May 1997).