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POLITICS OF PLAGUE:
ANCIENT EPIDEMICS AND THEIR IMPACT ON SOCIETY

Natasha Sophie Stange
Pomona College
August 13, 2020

Reflective Essay

History and the human experience are inextricably linked to the climate and ecology of our planet. Often overlooked by modern-day contemporaries, infectious diseases have impacted societies across the world for millennia. My paper, “Politics of Plague: Ancient Epidemics and Their Impact on Society,” examines the four major plagues that wrought immense destruction across the ancient Mediterranean world: the Plague of Athens (430 BCE), the Antonine Plague (165 CE), the Plague of Cyprian (250 CE), and the Justinianic Plague (541 CE). The social, political, economic, and religious changes caused by these epidemics were so severe and lasting that they have led some scholars to conclude that their outbreaks ultimately contributed to the downfall of the affected societies. My paper—the culmination of more than two months of intensive research and analysis—makes a distinct contribution to existing scholarly research by highlighting the reverberations of major epidemics throughout the ancient world. Moreover, my analysis of these plagues and their impact on affected societies offers a thought-provoking lens through which to consider our own circumstances amid the ongoing COVID-19 pandemic.

My research, which was independently undertaken as a Pomona-sponsored RAISE project during the summer of 2020, was conducted primarily online. Sheltering at home, I journeyed deep into the ancient world through the online portal of The Claremont Colleges Library, which granted me access to a dazzling array of online databases, scholarly articles, scientific research, and primary source translations. In a COVID-free world, I would have delighted in the opportunity to spend my summer in the sunny tranquility of The Claremont Colleges Library’s solarium, meandering between the stacks in pursuit of scholarly monographs and encyclopedias. However—unable to access the library’s physical collection during the pandemic—my research became confined to the digital realm. I began by compiling a preliminary list of primary and secondary source materials for each ancient plague.

Based on the recommendation of my advisor (Pomona Prof. Benjamin Keim), the first resource I consulted was *L’Annee Philologique*, a Classics bibliography database. In *L’Annee*, I searched for keywords pertaining to each plague (e.g., the particular disease, and the names of rulers, doctors, and other individuals contemporary) and recorded the citations for the various ancient and modern texts it retrieved. After referencing *L’Annee* to create a preliminary list of sources to investigate further, I utilized the general search engine on The Claremont Colleges Library website to locate and download specific titles.

Before deciding whether to add any secondary source to the research notes used for outlining my paper, I skimmed through each source to (1) evaluate the quality of the writing (noting the author(s) and publisher, and observing the authors’ writing style), (2) assess the author’s use of sources, and (3) establish its relevance to my research project. In the case of news articles and sources retrieved through Google, it was necessary to employ particular scrutiny, as they were unlikely to have been vetted to the same extent as articles retrieved through The Claremont Colleges Library database. Specifically, I investigated: (i) how well-established a given author was in their field, (ii) whether or not the work was published by a well-known university press or publishing house, and (iii) how frequently the source had been cited by other authors. Once I determined that a source was both reliable and relevant, I read it carefully, recording important information and noting citations to other sources to examine in greater depth. Using my library login, I also searched in *JSTOR*, *Cambridge Core*, *Google Scholar*, *Britannica Online*, *Digital Loeb Classical Library*, *Open Library of Humanities*, and *Oxford Research Encyclopedias* for plague-related keywords. These databases revealed a wealth of secondary

sources to consult, allowing me to explore a vast array of topics—from analyses of Pericles’ political rhetoric to surveys of ancient coinage revealing agricultural and economic crises in the 2nd century Nile Delta.

The pandemic-induced limitations on other activities last summer provided me with an unforeseen and unprecedented opportunity to engage with primary and secondary sources to an extent that would not have been achievable during the school year alongside a full course-load. I divided my research process and writing into six segments: the first week was dedicated to familiarizing myself with the key facts relating to each plague and its aftermath; the following eight weeks were devoted to examining each plague in more detail and writing about it (approximately two weeks per plague); and the final two weeks were consumed with synthesizing relevant information, reflecting on common themes and critical differences, and considering the ramifications for our society amid the ongoing COVID-19 pandemic. Over the course of 11 weeks, my RAISE project provided me with the fascinating opportunity to read, analyze, and immerse myself in more than 100 sources, written by authors from a wide range of perspectives, places, and periods—the bulk of which I was able to access through the online resources and databases of The Claremont Colleges Library!

My research, writing, and analytical skills improved tremendously by being challenged daily for more than two months. Examining maps, scholarly monographs, articles, and lectures brought the ancient world to life. Poring over eyewitness accounts from politicians, scientists, and clergy vividly describing each outbreak, I became lost in their universe. Their emotions and experiences 1,500 to 2,500 years ago—loss, grief, and uncertainty—were reminiscent of those encountered by humans today amid the ongoing global COVID-19 pandemic. Synthesizing the vast quantities of information I gathered into my paper consistently challenged me to identify and distill the key insights and data from each source. It took multiple rounds of outlining and editing to construct a narrative arc that describes the unique facts surrounding each ancient plague, identifies common themes and critical differences among them, and reflects on parallels and implications for our time. Despite the struggles I encountered, this experience has only confirmed my excitement about pursuing a history major. I am proud of the final work product: a scholarly research paper exceeding 100 pages that I plan to further develop and hope to submit for publication.

Abstract

The four major plagues that struck the ancient Mediterranean—the Plague of Athens (430 BCE), the Antonine Plague (165 CE), the Plague of Cyprian (250 CE), and the Justinianic Plague (541 CE)—claimed the lives of thousands, or even millions, of people. These epidemics impelled governments to fracture and rebuild, induced the rise and fall of different religions and religious practices, altered military strategies and outcomes, and forced ancient societies to re-examine their structures, values, and inequalities. Such extreme mortalities profoundly impacted each affected society, triggering severe social, political, economic, religious, and military changes that ultimately altered the course of history, and contributed to the collapse of two of the ancient world's greatest empires: Athens and Rome.

The Plague of Athens: For the first half of the fifth century BCE, Athens stood as the largest and most cosmopolitan city-state in Greece. When Plague struck in 430 BCE, it took mere weeks for Athenian culture and values to shatter, and for lawlessness and disorder to erupt. As Athens descended into chaos, individuals capitalized on disaster to advance their personal and political interests. Social unrest, demagoguery, and political turmoil ensued. Moreover, by depleting Athenian manpower, the Plague contributed to Athens' defeat in the Peloponnesian War, a loss which significantly diminished Athens' power across the Aegean.

The Antonine Plague: At the height of power in 165 CE, the Roman Empire was home to more than 75 million people and was one of the most prosperous civilizations the world had ever seen. The Antonine Plague decimated towns and peoples across the Roman world, its spread amplified by urbanization, high population density, and vast trade networks. It demolished Rome's army: Roman triumph in the Parthian campaign of 166 would be Rome's sole military success for nearly 50 years. Economic struggles—initially caused by the Plague's death toll—precipitated agricultural crisis, prompting further economic decline. Political strife, poor leadership, and frequent emperor turnover exacerbated unrest and uncertainty for the future of the empire.

The Plague of Cyprian: Under the prudent leadership of rulers from the Severan Dynasty, the Roman Empire slowly recovered from the Antonine Plague. Yet less than a century later, the Cyprian Plague arrived, attacking its victims mercilessly and with little reprieve for nearly two decades. Rome's economy fluctuated wildly. Attempts at currency reform backfired, causing Rome's silver currency system to crash. With Rome's military forces debilitated by Plague, the state faced enemies on nearly every frontier, eventually losing hegemony along a number of fronts. In the 50 years following the outbreak of the Cyprian Plague, Rome was ruled by more than 20 emperors. Barbarian invasions, economic decline, civil wars, climate change, and the Cyprian Plague all played a role in what is referred to as the “first fall of Rome” at the end of the third century CE.

The Justinianic Plague: After the Justinianic Plague spread across the Mediterranean world from 541-544, it became endemic in the region, flaring up in various waves for the next two centuries. Worsening climate conditions—including earthquakes, volcanic eruptions, and a comet collision—resulted in agricultural crises and famine. As recurring waves of plague and natural disaster reshaped the landscape of the empire, traditional social order collapsed, giving way to hysteria. Ambitious programs of reform and military conquest commenced prior to the outbreak of Plague had depleted the resources of the empire. Rome's military was greatly diminished by the Plague's death toll and the state's inability to pay its soldiers. Unable to defend the frontiers of the empire against outside intruders, the Roman Empire was spliced into smaller pieces which were claimed by various surrounding leaders.

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INTRODUCTION

The ancient Greek and Roman empires wielded immense power and controlled enormous swaths of land and sea across the Mediterranean. These illustrious civilizations—and their monumental advancements in technology, trade, culture, politics, and thought—have continued to command the awe of humans living more than two millennia later. Many marvel at the great texts of ancient authors, historians, and philosophers, as well as the remarkable achievements of the ancient Greeks and Romans, ranging from naval ships and international trade routes to agricultural advancements and urbanization. The legacy created by these civilizations and their greatest minds has endured to today.

Often lost on present-day observers, however, is the extent to which daily life and the human experience of the ancients differed from that of the modern era. One critical difference is the extent to which life in the ancient world was riddled with infectious disease. Diseases such as malaria, tuberculosis, measles, typhoid, leprosy, smallpox, bubonic plague, and other acute diarrheal diseases were hyperendemic in many places. Studies in archaeology, economics, and anthropology evince that the ancient Roman world “teemed with infection.”¹ Due to the frequency with which infectious disease—and other health conditions we now have the tools to treat—claimed lives in the ancient world, the average life expectancy in the second century CE was barely more than 20 years.² While ancient Roman annalists acknowledged the ever-looming possibility of a fatal epidemic,³ prior to the fifth century BCE most infectious diseases remained endemic and were confined to limited regional areas, primarily afflicting populations in close

¹ Hanna, “The Route to Crisis: Cities, Trade, and Epidemics of the Roman Empire,” 1.

² Sheidel, “Roman Wellbeing and the Economic Consequences of the ‘Antonine Plague,’” 3-4.

³ Duncan-Jones, “The Impact of the Antonine Plague,” 109-110.

geographical proximity to the disease pools. And, over time, many individuals began to develop immunity to the diseases that commonly afflicted their area.

Outbreaks began to lose their geographic limitations in the mid-fifth century BCE. Under the rule of ambitious leaders enamored with large-scale territorial conquest, accompanied by technological innovation and increased trade, a greater number of individuals began to travel further and further across the Mediterranean world than ever before. Alongside the soldiers, diplomats, merchants, and goods traversing across the Mediterranean seas, traveled infectious diseases. Infectious diseases that had previously been confined to particular areas were soon introduced to non-immune populations across the empire, spurring severe epidemics on an unprecedented scale. As commerce created abounding opportunities for jobs and wealth, trade hubs near ports across the Mediterranean had become increasingly urbanized. Larger numbers of individuals living in closer quarters than ever before also exacerbated the spread of infectious disease.

Changing human travel and migration patterns and urbanization were not the only ingredients that led to a few instances of particularly severe outbreaks of infectious diseases in the ancient Greek and Roman world, beginning with the Plague of Athens in 430 BCE. While often overlooked, the earth's climate and ecology affect the core of the human experience, both in ancient times and today. Different climatic epochs, fluctuating temperatures, volcanic eruptions, and meteorites all affected the daily lives of people in the ancient world. Moreover, such drastic climatic events caused "nature's finely balanced ecosystem relationships [to] change."⁴ In response to changing climate conditions and changes in food availability, animal species often adopted new and irregular migration patterns in search of food. Epidemics or

⁴ Heeney, "Ebola - The Plague of 2014/2015," 14.

epizootics (epidemics within an animal population, which, in some cases can jump from animals to humans) can be caused by such sudden changes in animal behavior. It is estimated that nearly 75 percent of human infectious diseases originate from animals.⁵ Thus, while favorable climate conditions aided the infrastructure and economic growth of ancient Greek and Roman cities, changing climate conditions played a role in their undoing, as climate influenced the appearance, frequency, and severity of infectious disease outbreaks. Human history operates on a changing platform of nature, and climate variability throughout time has shown the power to either stabilize or destabilize a given society.

The four major plagues that struck the ancient Mediterranean—the Plague of Athens (430 BCE), the Antonine Plague (165 CE), the Plague of Cyprian (250 CE), and the Justinianic Plague (541 CE)—claimed the lives of thousands, or in some cases, millions, of people. Such extreme mortalities profoundly impacted each affected society, triggering severe social, political, economic, religious, and military changes that ultimately altered the course of history. These epidemics impelled governments to fracture and rebuild, induced the rise and fall of different religions and religious practices, altered military strategies and outcomes, and forced ancient societies to re-examine their structures, values, and inequalities.

There are only a limited number of extant accounts of these ancient epidemics from authors contemporary with such outbreaks. Deciphering the surviving fragments of ancient writers' work poses several challenges. First, ancient authors are notorious for their hyperbole, prompting many modern historians to question whether or not their observations—particularly their numerical estimates—should be taken at face value. Moreover, as their accounts were originally written in Latin or ancient Greek, translating the authors' accounts into English has

⁵ Heeney, "Ebola - The Plague of 2014/2015," 11.

also been difficult. Multiple interpretations exist for terms ancient authors used to describe physical symptoms of a given disease, which has in some cases made it difficult for modern scholars to identify the disease that caused a particular plague.⁶

Modern technology has greatly expanded our knowledge of the timeline, events, and destruction caused by each plague. Archaeological excavations throughout the Middle East and the Mediterranean have found Syrian villages nearly uninhabited after an earthquake and outbreak of the Cyprian Plague, and unearthed papyri detailing census, taxation, and land ownership data in the aftermath of the Antonine Plague in Egypt. In recent decades, DNA analysis has helped to fill gaps in our knowledge and identify the particular disease responsible for an outbreak. Using dental pulp of individuals buried in areas believed to have been afflicted by disease, scientists have been able to run DNA analyses to test for the presence of a particular virus or bacterium.⁷ Acquiring these ancient specimens poses its own challenge, as many mass graves described in surviving historical records are located in or near major modern-day cities, which often makes it difficult—if not impossible—to obtain permission to excavate these sites. However, this technique has already been successfully employed in rural areas: in 2013, scientists excavated a cemetery dating from the sixth century CE in Aschheim, Germany, and found traces of the bacterium responsible for the Bubonic plague (*Yersinia pestis*), which confirmed scholars' theory that the Bubonic plague was the disease responsible for the Justinianic Plague.

Our knowledge of these four major ancient epidemics comes from a variety of sources: (1) ancient authors contemporary with the disease event, (2) ancient historians writing a few centuries after the disease event, discussing the account of an author contemporary with the

⁶ Cunha and Cunha, "Great Plagues of the Past and Remaining Questions," 1-3.

⁷ Ibid, 2-3.

outbreak, (3) archaeological findings, (4) paleomicrobiological findings, and (5) efforts of other modern historians to synthesize the four aforementioned sources. It is thanks to this collaborative and highly interdisciplinary effort that we now have a wealth of information concerning the timeline, reach, and symptoms of each major epidemic, as well as the social, cultural, religious, political, and military changes spurred by each.

THE PLAGUE OF ATHENS (430 BCE)

Background

For the first half of the fifth century BCE, Athens was a force to be reckoned with. At its height, the city of Athens stood as the largest and most cosmopolitan city-state in all of Greece, controlling most of the Aegean coastline. While much of Athens' energy and attention from 500 to 480 BCE was directed towards thwarting Persian attempts to invade Greece, the end of the Persian Wars in 478 BCE marked the beginning of an era of Athenian dominance in Greece and across the known Mediterranean. An important decision that contributed to Greek victory in the Persian Wars was the formation of the Delian League, an association of more than 150 Greek city-states scattered across the Aegean coast, that, under Athenian leadership, united to defeat the Persians.

After peace had been made with Persia, what began as an alliance of independent Greek city-states soon became a quasi-Athenian Empire. Athens took control of the League, continued to collect hefty taxes from its member states, and relocated the League's treasury from its original location in Delos to Athens. Athenian politicians used the League's funds to bolster their city's economy, funneling tax revenue into infrastructure projects, including the Athenian Acropolis and the Parthenon.⁸ To the Spartans, a rival Greek superpower at the time, as well as other members of the Delian League, it became increasingly clear that Athens was seeking to consolidate power into an Athenian empire, and using the money it had collected to maintain its status as the dominant naval power in Greece. In 431 BCE, Sparta and a number of its Peloponnesian allies declared war on Athens, and the Peloponnesian War commenced. Given

⁸ Cartwright, "Delian League."

the immense manpower and resources that Athens commanded, as well as its status as a naval superpower, the city's prospects for winning the Peloponnesian War appeared quite strong.⁹ After a successful campaigning season in Megarid, the Athenians finished the first year of the war in high spirits.¹⁰ Having learned that Sparta planned to invade Attica, Athenian leader Pericles sought to protect its citizens from possible attack. He moved many residents from the suburbs into the city so that the Athenians would be protected within the confines of the Themistoclean walls, which guarded the city and provided a fortified connection with the port of Piraeus. Protected access to the port of Piraeus, which was located nine kilometers from the city, would ensure that Athens could continue to access all the food and other resources it required for those seeking shelter within city walls, while Athenian soldiers would be able to continue with their naval campaigns against the Spartans and their Peloponnesian allies. Every possible scenario appeared to have been accounted and planned for. In a speech Pericles gave before his soldiers, he confidently proclaimed that Athens was "ready to encounter every legitimate danger."¹¹

Outbreak of Plague and Symptoms

While the measures implemented by Pericles and other Athenian leaders were effective in protecting Athens from the enemy outside the Themistoclean walls, a more formidable threat emerged from within the city's walls. The Great Plague of 430 BCE was an unforeseen enemy that the Athenians were unprepared to defeat. Widely believed to have originated in North Africa, the plague arrived in Athens during the second year of the Peloponnesian War, first

⁹ Soupios, "Impact of the Plague in Ancient Greece," 49.

¹⁰ Joho, "The Revival of the Funeral Oration and the Plague in Thucydides Books 6-7," 18-19.

¹¹ Thucydides 2.6. This and all subsequent translations from Thucydides' *History* are by Richard Crawley.

striking the Athenian port town of Piraeus.¹² The plague quickly found its way into the city of Athens, where it spread like wildfire, suddenly attacking people otherwise believed to be in good health. The Athenian leaders' decision to pile residents from the suburbs into the city proved to be a catalyst as it created living conditions conducive for person-to-person transmission. During the Spartan siege, the city of Athens' population is estimated to have tripled or quadrupled—from 100,000-150,000 pre-war residents to 300,000-400,000 during the war, which resulted in a very high population density (between 25,000 to 100,000 people per square mile) in Athens.¹³

The virgin soil epidemic attacked individuals regardless of age, sex, or race, and had a mortality rate estimated between 25 and 33 percent.¹⁴ The only firsthand account of the plague that has been recovered is that of the Greek historian Thucydides, a wealthy Athenian general and political critic who was living in Athens while the plague ravaged the city, who fell ill to it himself. According to Thucydides, the onset of illness was nearly immediate: healthy individuals were “all of a sudden attacked by violent heats in the head,” and their eyes became red and inflamed.¹⁵ These symptoms were soon followed by abnormally foul breath, sneezing, and hoarseness, “after which the pain reached the chest,” producing a hard cough.¹⁶ Later, those infected were overcome by an upset stomach, regurgitating bile “of all kinds,” and their skin broke out into “small pustules and ulcers,” which left gnarly scars and marred the skin of those who managed to survive.¹⁷ In many cases, the sick became unbearably hot, reporting sensations of internal burning, and were unable to wear any clothing comfortably.¹⁸ Many were struck by

¹² Cunha and Cunha, “Great Plagues of the Past and Remaining Questions,” 8.

¹³ Martínez, “Political Consequences of the Plague of Athens,” 139.

¹⁴ Mitchell-Boyask, *Plague and the Athenian Imagination*, 117.

¹⁵ Thucydides 2.7

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ *Ibid.*

episodes of dementia.¹⁹ Approximately a week after contracting the disease, most infected individuals experienced bouts of diarrhea, which severely dehydrated and weakened them.²⁰ Often, it was this dehydration that weakened the sick and brought them to the brink of death.²¹ Many of those who managed to recover after this point experienced permanent brain damage and memory loss.²²

Modern Medical Assessment

Using modern technology and analytical tools, scientists in recent decades have sought to identify the type of disease that ravaged Athens. They have concluded that bubonic plague, typhoid fever, smallpox, measles, or endemic typhus are the most likely candidates. At present, there remains some disagreement as to which of these diseases caused the Athenian plague. Cheston B. Cunha and Burke A. Cunha suggest that the symptoms Thucydides described align closely with measles or endemic typhus.²³ It is important to note that the strain of measles that would have struck Athens in 430 BCE is not the same strain present in modern societies, which has become less virulent due to widespread vaccination.²⁴ Among non-immune populations, the mortality rate of measles approaches twenty-five percent, and the symptoms patients report are similar to those described by Thucydides in his *History of the Peloponnesian War*. This theory is supported by a measles outbreak that occurred on the Fiji Islands—home to a largely non-immune population—in 1875, which killed an estimated 40,000 people.²⁵

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

²³ Cunha and Cunha, “Great Plagues of the Past and Remaining Questions,” 6.

²⁴ Ibid, 7.

²⁵ Measles & Rubella Initiative, “Fiji and Measles: From Devastation to Elimination.”

Endemic typhus remains another likely possibility for the Athenian plague, as it can be carried by lice, and historically has often struck during times when large populations were crammed into confined spaces.²⁶ According to the Cunhas, it is plausible that an individual with endemic-typhus carrying lice may have entered Athens through the port of Piraeus and infected the city.²⁷ Robert J. Littman also believes that the Athenian plague most likely was caused by endemic typhus. Using mathematical models, Littman and his team modeled each possible infection and its infection rates to predict how long it would take each disease to spread through a city like ancient Athens, as well as the duration for which it would likely remain endemic.²⁸ From this study, Littman concluded that the plague likely was caused by typhus or a typhus-like disease.²⁹

Timeline and Mortality Estimates

The plague remained endemic in Athens for nearly five years: after its initial wave in May of 430 BCE, it reappeared in 429, claiming the life of Greek leader Pericles, and then struck for a third time in the winter of 427/6 BCE. The plague's cumulative death toll is believed to be between 75,000 and 100,000.³⁰ The immediate effect of the plague on the Athenian way of life was calamitous; it stretched the city's resources thin, and killed the relatives, friends, and acquaintances of many. Yet the longer-term consequences of the plague extended far beyond the lives it claimed: the chaos, disorder, and social unrest that were triggered by the outbreak would profoundly shape Athenian morals, religion, politics, and military conquest for decades to come.

²⁶ Cunha and Cunha, "Great Plagues of the Past and Remaining Questions," 8.

²⁷ Ibid, 8.

²⁸ Littman, "The Plague of Athens: Epidemiology and Paleopathology," 459.

²⁹ Ibid, 459.

³⁰ Mark, "Plague in the Ancient & Medieval World."

Social Changes

Mere months before the Plague struck Athens, Pericles gave his now-famed Funeral Oration in honor of the Athenian men who had lost their lives fighting in the Peloponnesian War. The entirety of Pericles' speech has been recounted by Thucydides in *History of the Peloponnesian War*. Before the largest Athenian army ever to be assembled in one body,³¹ Pericles praised the deceased soldiers' bravery and loyalty to Athens, and emphasized the greatness of Athenian culture, knowledge, and democracy that heralded Athens as a model for the rest of the world. Pericles applauded the distinct traits admired, and values held, by Athenian citizens, such as intelligence, resoluteness in action, belief in the equality of political rights, a balance of private life with public duty, an appreciation of freedoms, and respect for authority.³² Highlighting the uniqueness of the Athenian constitution, Pericles proclaimed that "Our constitution does not copy the laws of neighboring states; we are rather a pattern to others than imitators to ourselves."³³ Moreover, Pericles extolled that "Athens alone of her contemporaries is found when tested to be greater than her reputation," and that "the admiration of the present and succeeding ages will be ours."³⁴ Thus, while respectfully offering his condolences and honoring the men who valiantly fought for the glory of Athens, Pericles simultaneously touted the hallmarks of Athenian values and conduct that enabled Athenian democracy to flourish and serve as an inspiration for civilizations around the known world.

However, "almost in the same breath," Thucydides evinced the fleetingness of the Athenian ideals Pericles puts forth in his speech, for his account of the plague's outbreak

³¹ Joho, "The Revival of the Funeral Oration and the Plague in Thucydides Books 6–7," 18-19.

³² Ibid, 20.

³³ Thucydides 2.6

³⁴ Ibid.

immediately follows his account of Pericles' Funeral Oration.³⁵ The ferocity with which the plague attacked individuals regardless of age, sex, nationality, social status, or piety, suddenly made life feel ephemeral. It did not spare the doctors or others who tried to help the sick. As the plague traveled around the city like a wildfire, the mentality of the populace began to shift. Many individuals began to neglect laws, religious rites, and proper burial practices, engaging in reckless behavior without fear of consequences.³⁶ As people died ubiquitously, the streets became "strewn with heaps of homeless unattended dead and dying."³⁷ Men resolved to spend their money quickly and cherish their last days, "regarding their lives and riches as things alike of a day."³⁸ Thucydides wrote that "as the disaster passed all bounds, men, not knowing what was to become of them, became utterly careless of everything, whether sacred or profane."³⁹ Widespread moral decline in Athens ensued, as individuals came to fear neither god nor law and did not expect to live long enough to stand trial for their offenses.

More disconcerting, however, was the fact that the moral decay precipitated by the outbreak of plague did not dissipate along with it. Modern scholars have argued that the plague mounted a long-lasting "frontal assault on the Periclean ideal."⁴⁰ Law turned to lawlessness, order was perverted to disorder, honor was nowhere to be found, and individuals ceased to act in the interest of the greater public and instead began to act only in self-interest. The progressive collapse of Athenian values in the years that followed was recounted by Thucydides in the third book of his *History of the Peloponnesian War*, in which he described the "collapse of the three fundamental Greek institutions: kinship, human law, and divine law."⁴¹ His description of poor

³⁵ Joho, "The Revival of the Funeral Oration and the Plague in Thucydides Books 6–7," 16.

³⁶ Christensen, "Plagues Follow Bad Leadership in Ancient Greek Tales."

³⁷ Orwin, "Stasis and Plague: Thucydides on the Dissolution of Society," 841.

³⁸ Thucydides 2.7

³⁹ Ibid.

⁴⁰ Joho, "The Revival of the Funeral Oration and the Plague in Thucydides Books 6–7," 18-19.

⁴¹ Orwin, "Stasis and Plague: Thucydides on the Dissolution of Society," 836.

leadership and declining values in the subsequent books serve as further evidence that the plague had brought about a new Athenian environment and mindset that would ultimately unravel “the spiritual tapestry of Greece’s greatest city.”⁴² The plague’s effective “demoralization of Athenian society”⁴³ was fraught with consequences: as J. F. D. Shrewsbury writes, “the pestilence, in effect, engendered a social and political canker which continued to fester long after the immediate effect of its morality had subsided.”⁴⁴ Moral decay, fused with poor leadership, exacerbated a multitude of civic problems in Athens. Divisions widened between the aristocracy and working classes, old money and the nouveau riche, and traditional and “new” politicians. Social conflict, class tensions, and an increased sense of nativism ruled the day. Arguably, the only innocuous change that occurred in Athens as a result of the plague was a resurgence in religion.

Religious Changes

Unlike many other historians of the ancient world, Thucydides did not offer a divine interpretation of the plague. However, he did describe the impact on religion: as the plague attacked both the pious and the nonreligious alike, many individuals gave up hope and stopped praying to the gods. Thucydides observed that “the only increase in religious activity was the popularization of the claim that the gods were punishing Athens with the disease,”⁴⁵ as some attributed the perceived immunity of the Peloponnese from the plague to Apollo’s promise to assist the Spartans in the Peloponnesian War.⁴⁶

⁴² Soupios, “Impact of the Plague in Ancient Greece,” 50.

⁴³ Shrewsbury, “The Plague of Athens,” 2.

⁴⁴ Ibid.

⁴⁵ Martínez, “Political Consequences of the Plague of Athens,” 138.

⁴⁶ Many scholars suspect that inhabitants of the Peloponnese were minimally affected by the plague because they didn’t leave in nearly as close quarters with one another as the Athenians had, confined within the city walls.

The Cult of Asclepius—the Greek god of medicine and healing—began to gain traction in Athens during the plague and in the decades that followed. According to Robin Mitchell-Boyask, the increased popularity of religion and worship of Asclepius can be explained by human response to tragedy—more specifically, the extreme loss of life from the plague which Athens had failed to combat. He explains that “Just as tragedy encompasses both the optimistic and pessimistic visions of death, so too does it give expression to the belief in both kinds of medical therapy, the religious and the scientific.”⁴⁷ While the Asclepius cult in Athens was likely founded by private citizens, as the movement gained traction, the *polis* soon overtook its administration.⁴⁸ In 420 BCE, the Athenians celebrated Asclepius with an inaugural festival and with the construction of two major sanctuaries for healing and worship, one on the south slope of the Acropolis and the other in Piraeus.⁴⁹ Some scholars have gone so far as to describe this uptick in religious practices as a social movement: Harry Perlstadt writes that the rise of the Cult of Asclepius featured both “redemptive religious healing and a reformatory political strategy.”⁵⁰ Widespread worship of Asclepius renewed religious healing practices that had been disrupted by the plague and the Peloponnesian War. It can, however, be argued that a resurgence in religious practices may have been one of only a few benign outcomes of the plague, as the city of Athens largely remained in a state of moral, social, and political disarray.

⁴⁷ Mitchell-Boyask, *Plague and the Athenian Imagination*, 11.

⁴⁸ *Ibid*, 117.

⁴⁹ Perlstadt, “The Plague of Athens and the Cult of Asclepius.”

⁵⁰ Perlstadt, “The Plague of Athens and the Cult of Asclepius.”

Political Changes

In his Funeral Oration, Pericles had trumpeted how accepting Athens was of other cultures, claiming that Athenians “throw open [their] city to the world.”⁵¹ It is true that Athens attracted and welcomed many immigrants from other areas of Greece, however, even during Pericles’ reign, these immigrants were not entitled to the same rights as Athenian citizens. In 451 BCE, Pericles imposed an immigration law that restricted Athenian citizenship rights to individuals born of two Athenian citizens.⁵² This effectively reduced the political power of *Metics* (immigrants), as land ownership and jurorships were privileges restricted solely to Athenian citizens.⁵³ Thus, while Athenian leaders were clearly implementing a nativist agenda prior to the outbreak of the plague, there is evidence to suggest that this movement and anti-immigrant sentiment were exacerbated by the plague’s death toll, which may have shifted the demographic balance between citizens and *Metics*.⁵⁴

Pericles’ successors failed to make Athens a more accepting place or to increase the number of its citizens by allowing only wealthy *Metics* entry into the ranks of the Athenian citizenry. Desperate to secure their already futile positions of power, Pericles’ successors instead elected to further restrict citizenship opportunities. *Metics* who wished to become citizens were required to pay large sums of money to the Athenian government and were expected to devote the majority of their life to public service in Athens.⁵⁵ Those lucky enough to ultimately acquire citizenship were granted the privilege late in life and were not permitted to confer such status upon their kin.⁵⁶ The decades after the plague saw only further tightening of the restrictions

⁵¹ Thucydides 2.6

⁵² Martínez, “Political Consequences of the Plague of Athens,” 143.

⁵³ *Ibid*, 144.

⁵⁴ *Ibid*, 141.

⁵⁵ Martínez, “Political Consequences of the Plague of Athens,” 143.

⁵⁶ *Ibid*, 141-143.

against *Metics*, which had begun in the 450s BCE, and Pericles' immigration law was re-enacted in 403 BCE.⁵⁷ Thus, the plague's death toll stimulated an increasingly nativist sentiment among Athenian citizens and resulted in the decline of *Metic* status in Athens.

Both Pericles' death and the moral decline brought about by the plague debased Athenian leadership and politics. As the "greatest statesmen of the era,"⁵⁸ Pericles had led Athens with integrity, grace, and fair-mindedness until his death from the plague at the age of 65. For as long as he was head of state, he pursued a "moderate and conservative policy" that was well-received by the public.⁵⁹ Ancient sources, with near-complete unanimity, praise Pericles' wisdom, courage, and incorruptibility. Some modern scholars have asserted that Pericles' death may be to blame for Athens' downfall in the post-plague era: M. A. Soupios contends that "In carrying off Pericles, the plague deprived Athens of the one man who had the courage and capacity to remonstrate the citizenry."⁶⁰

In the void of Pericles' adept leadership, Athens suffered from "in-fighting, toxic politics, and selfish leaders" for years after the plague had run its course through the city.⁶¹ A host of demagogic politicians came into power in Athens in the post-Periclean era, such as Cleon, Alcibiades, Cleophon, and Hyperbolus. These politicians did not lead in the interests of those who had elected them. Instead, they acted in their own self-interest, drove the people "by creating enemies that [did] not exist,"⁶² manipulated the emotions of the populace, fear-mongered, and relied on the use of inflammatory language and theatrical behavior to evince their rhetorical points. Demagoguery feeds on exploitation, and the ancient demagogues sought to

⁵⁷ Ibid.

⁵⁸ Soupios, "Impact of the Plague in Ancient Greece," 49.

⁵⁹ Thucydides 2.7

⁶⁰ Soupios, "Impact of the Plague in Ancient Greece," 49.

⁶¹ Christensen, "Plagues Follow Bad Leadership in Ancient Greek Tales."

⁶² Chaniotis, "Ancient Plagues and Covid-19: Is History Repeating Itself?"

create turmoil and social division to secure their positions of power at any cost. Thucydides denounced the “host of blunders” each of Pericles’ successors generated in their attempts to “grasp [...] at supremacy,”⁶³ and appeared deeply skeptical of the “new paradigm of fantasy politics”⁶⁴ he believed Athens had adopted.

Impact on Military

Despite being disadvantaged by a depletion of their armed forces, the Athenians continued to fight the Spartans in the Peloponnesian War for nearly twenty more years. The adverse effects of new politicians’ poor leadership on Athenian civilians and military forces were exacerbated by the significant extent to which the plague had depleted Athenian manpower. The plague had a high death toll among Athenian military forces: the naval force, before Potidaea, lost approximately 25% of its manpower in just forty days after the outbreak of the plague,⁶⁵ and the cumulative loss in manpower across the various waves of the plague amounted to 4,400 hoplites and 300 cavalry.⁶⁶ Given the labor-intensive nature of ancient warfare, such an extreme loss of manpower was problematic for the Athenians and placed them at a significant disadvantage in the Peloponnesian War.

A particularly stark example of how sharply Athenian political leadership had declined was the Sicilian Expedition, which some scholars have referred to as the “greatest military blunder” of the Peloponnesian War.⁶⁷ In 415 BCE, Athenian leader Alcibiades, using his trademark seductive oratory tactics, managed to persuade the Athenian assembly to launch a

⁶³ Thucydides 2.7

⁶⁴ Joho, “The Revival of the Funeral Oration and the Plague in Thucydides Books 6–7,” 34.

⁶⁵ Couch, “Some Political Implications of the Athenian Plague,” 98.

⁶⁶ Ibid.

⁶⁷ Soupios, “Impact of the Plague in Ancient Greece,” 49.

major military expedition against Syracuse—a Sicilian ally of the Peloponnesians—and thereby recklessly open a second front in the west. Shortly thereafter, however, Alcibiades’ political opponents in Athens brought charges of sacrilege against him.⁶⁸ Rather than remaining in Athens and attempting to combat the charges he faced, Alcibiades fled, leaving the Sicilian Expedition in the hands of a reluctant Nicias.

Instead of seizing the opportunity to exile somewhere along the Aegean coast, Alcibiades instead traveled to Sparta and divulged the Athenian’s plans to attack Syracuse. Sparta immediately sent assistance to the Sicilians to bolster their military forces prior to the arrival of the Athenians.⁶⁹ Athenian forces, unsuspecting and inadequately prepared, suffered a stunning defeat upon their arrival at Syracuse.⁷⁰ The Peloponnesian War ultimately culminated in Athenian loss in 404 BCE, which further diminished Athens’ power across the Aegean.⁷¹ And, in 338 BCE—less than a century after the outbreak of the Plague—the city of Athens lost its independence and “superpower” status for good when Philip II of Macedon conquered the city along with the rest of Greece.

Conclusion

Although it had taken Athens centuries of innovation, military campaigns, and diplomatic efforts to reach the apex of its prominence and glory, when the Plague struck in 430 BC, it took mere weeks for Athenian culture and values to shatter, and for lawlessness and disorder to erupt. While these unforeseen exogenous events appear to have quickly up-ended a society, the rapid disintegration of Athenian values has prompted some scholars to question (1) the veracity of

⁶⁸ Meiggs, “Alcibiades: Athenian Politician and General.”

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Martínez, “Political Consequences of the Plague of Athens,” 136.

Pericles' description of the Athenian people in his funeral oration (i.e., perhaps he ascribed characteristics and values to Athenians which many of them did not, in fact, embody), and (2) whether Thucydides may have embellished Pericles' words in his account to emphasize the disparities between Athenian life pre and post-plague. While it is important to examine the possible biases that have influenced modern interpretation of Pericles' Funeral Oration, due to a lack of other surviving accounts, it may be impossible to discern the true state of Athenian moral values in the eras before and after the Plague of Athens.

Ancient authors concur that Pericles embodied the Athenian ideals he put forth in his Funeral Oration, and praise Pericles for his prudent and judicious leadership qualities. But, given how quickly Athens unraveled after Pericles' death, it is understandable why some have speculated whether or not his soldiers and Athenian civilians embodied such qualities to a comparable extent. Clifford Orwin highlights the significance of hope (and the loss thereof), writing that "Political life depends on hopes and fears for the future, and therefore the expectation of one."⁷² With nothing to either hope or fear for the future, men immerse themselves in pleasures "as depend only on themselves, but on themselves as transformed by their indifference to the future, and the godlike (if fleeting) impunity which this confers."⁷³ Thus, it may alternatively be the case that many Athenian men embodied the great moral character Pericles proclaimed them to have, but that the arrant disruption caused by the plague made them lose hope for the future, degrading their behavior and values.

Hellmut Flashar asserts that "Thucydides' goal is an ironic exposure of the tension between the true situation at Athens and the sugar-coated Periclean picture,"⁷⁴ which suggests

⁷² Orwin, "Stasis and Plague: Thucydides on the Dissolution of Society," 844-845.

⁷³ Ibid.

⁷⁴ Joho, "The Revival of the Funeral Oration and the Plague in Thucydides Books 6-7," 17.

that Thucydides' stark contrast between the Funeral Oration and the outbreak of the plague were designed to call into question Pericles' overly flattering description of Athenian values and behavior. Tobias Joho expresses a more moderate stance, positing that "the character of Athens is not statically given, but constantly resituates itself along a spectrum, whose extreme points are marked by the Funeral Oration and the plague."⁷⁵ So, it is possible that the values and conduct of the Athenians pre and post-plague may have been less of a dichotomy than Thucydides makes them out to be, but instead resonate along a continuum.

It seems obvious that any great society, even at its zenith, is not entirely flawless—Athens included. While Athenian democracy, leadership, and knowledge flourished in the fifth century BCE, Athens was by no means utopian. Certain social issues, such as the rights of immigrants and inequality between the wealthy and poor, were simply given less attention. Thus, the Plague of Athens both exacerbated existing social issues, while simultaneously creating a multitude of additional problems. By claiming the life of one of Greece's most extraordinary and well-liked leaders, degenerating Athenian values and morals, and—as a consequence—wreaking havoc on Athenian politics and military campaigns, the plague crippled a once-illustrious city that appeared destined for further greatness, and sent Athens spiraling headlong towards disaster.

⁷⁵ Ibid, 18.

THE ANTONINE PLAGUE (165 CE)

Background

By the first century CE, Rome had become one of the largest and most prosperous civilizations the world had ever seen. The city of Rome was home to more than one million inhabitants—the first and only western city to reach that size until London in the 1800s.⁷⁶ The Roman Empire was an even more astonishing sight to behold: in 165 AD, at the height of Rome’s power, it was home to more than 75 million people⁷⁷ and encompassed an expansive area of land, stretching from the Middle East to the Iberian Peninsula, and from North Africa to Britain. It was hardly hyperbolic for the Romans to call the Mediterranean *mare nostrum*; our sea.

The period from 80 BC to 180 CE is often referred to as the *pax Romana*, a golden era and high point of Roman civilization marked by a period of relative peace and prosperity throughout the empire. Individuals from across the empire flocked to Rome, which had become “a place for thought, reasoning, and sharing ideas; an elite storehouse of commodities, entertainment, and scholarship.”⁷⁸ Roman technology and innovation burgeoned and became a sight to behold, as did Rome itself, as it had become “a marvel of civil engineering,”⁷⁹ home to grand architectural projects and aqueducts. Culture and politics blossomed, and the late republic and early empire grew under the guidance of great leaders widely revered by the public, such as Antoninus Pius. Pius’ rule from 138-161 CE was one of the most harmonious and successful in Roman history. A poised and selfless leader, Antoninus Pius denounced luxury, pursued a

⁷⁶ Harper, *The Fate of Rome*, 10.

⁷⁷ *Ibid*, 31.

⁷⁸ Hanna, “The Route to Crisis: Cities, Trade, and Epidemics of the Roman Empire,” 2.

⁷⁹ Harper, *The Fate of Rome*, 17.

moderate economic policy, financed infrastructure projects, and even used his own money to purchase food and wine for the poor in times of need.⁸⁰

Rome's economy flourished under the rule of Pius and his predecessors. The Roman Climate Optimum (200 BCE - 150 CE) had afforded lands across the Roman Empire with warm, wet, and stable climate. Spectacular weather conditions, aided by new technological advances such as watermills and metal tools, allowed agricultural productivity to skyrocket.⁸¹ Banks and advanced financial credit systems created new opportunities for entrepreneurship and bolstered the economy. Increased travel and trade also contributed to economic growth: commerce exploded during the *pax Romana*, marking a "golden age of trade"⁸² in which trade networks spread like spider webs, connecting far-flung corners of the empire to more centralized towns and cities.

With nearly a quarter of the world's total population under Rome's sway,⁸³ the Roman Empire had succeeded in creating an enormous region of internal trade, travel, socialization, innovation, and agricultural cultivation on an unprecedented scale. This would not have been possible without Rome's military prowess. Including legions, auxiliary units, navy, and irregular units, the Roman "imperial war machine" was composed of approximately 500,000 men.⁸⁴ Raw manpower was the main ingredient for Rome's military success.⁸⁵ During the *pax Romana*, Rome had largely succeeded in the challenging task of striking a balance between increased territorial conquest and the preservation of peace and security within the core zone of the empire.

⁸⁰ Weigel, "Antoninus Pius (A.D. 138-161)."

⁸¹ Harper, *The Fate of Rome*, 36, 52.

⁸² *Ibid*, 37.

⁸³ *Ibid*, 10.

⁸⁴ *Ibid*, 28.

⁸⁵ *Ibid*, 29.

Yet this balance was fragile, and maintained by prudent leadership, shrewd military strategy, and to some extent, good fortune.

The first test to this balance had begun to develop towards the end of Antoninus Pius' reign, as tensions between Rome and Parthia over Roman control of Armenia intensified. Upon Pius' death, these tensions reached a boiling point: the Parthians made a grab for power by placing their own candidate on the Armenian throne. The new Roman emperor, Marcus Aurelius, was tasked with squashing this threat from the east. In 162 CE, Marcus sent his co-emperor, Lucius Verus, to fight the Parthians.⁸⁶ With the support of multiple legions and the expertise of several accomplished Roman generals, the Romans emerged victorious in 166 and triumphantly returned to Rome. Unbeknownst to Marcus and Lucius at the time, however, was the fact that the remainder of their long and troubled reign would be marked by a series of futile attempts to ward off foreign invaders who posed a threat to the delicate balance and security of the Roman Empire.

Outbreak of Plague

When Lucius Verus returned to Rome after the successful Parthian Campaign, he was rewarded with a triumph—a traditional civil and religious ceremony of Ancient Rome, designed to publicly celebrate exceptional successes of Roman military commanders. As Lucius rode through the streets of Rome in a chariot, accompanied by his army and their spoils of war, the Roman people extravagantly celebrated his defeat of the enemy in the east. Little did they know at the time that a completely different enemy had already made its way past the borders of the empire, and was about to attack.

⁸⁶ Benario, "Marcus Aurelius (A.D. 161-180)."

The Antonine Plague first emerged in Mesopotamia at the end of 165 or the beginning of 166 CE. By the end of the year it had spread to Rome. The Roman metropolis, with its high population density and commerce connections across the empire, was a “pathogen bomb, diffusing carriers of the disease across the western Mediterranean.”⁸⁷ By 168 CE, the plague had ravaged Rome and spread across the Roman Empire, decimating towns and peoples across the Roman world. Some scholars believe that it may have traveled as far as China.⁸⁸ The spread of disease was exacerbated by the vast trade networks that crisscrossed the empire, as well as the highly urbanized nature of Roman society—as many as one-fifth of the empire’s denizens are believed to have lived in towns,⁸⁹ and this high degree of urbanization intensified the contagion of the plague. In Rome and other large cities in the Empire, houses were tightly packed in the center of the city to encourage frequent social interaction and gatherings around public monuments.⁹⁰ Not even those who lived in the countryside were spared, however, as many frequently commuted to nearby cities to conduct business and trade. Moreover, many Romans—both the impoverished and the wealthy—had poor diets and suffered from malnutrition, which made them more susceptible to falling ill.⁹¹ High population density, frequent travel, malnutrition, and poor sanitary conditions and waste disposal systems within cities (untreated sewage often flowed into the Tiber),⁹² all exacerbated the spread of and suffering from the plague.

⁸⁷ Harper, *The Fate of Rome*, 99.

⁸⁸ Hanna, “The Route to Crisis: Cities, Trade, and Epidemics of the Roman Empire,” 5.

⁸⁹ *Ibid.*, 1-3.

⁹⁰ *Ibid.*, 2.

⁹¹ *Ibid.*, 3.

⁹² *Ibid.*

Contemporary Account of Symptoms and Modern Medical Assessment

Galen, a prominent physician who was living in Rome when the plague hit in 166 CE, recorded his observations and experience of treating those who had fallen ill in the fifth book of his *Methodus Medendi* (“On the Method of Healing”). While Galen’s accounts are the most extensive description that remains from the time of the Antonine Plague, he only twice refers to the disease, and neither account is particularly “substantiated or substantial.”⁹³ Galen was not attempting to provide a comprehensive description of the plague, or to record its symptoms for the benefit of future generations in the way that Thucydides had done for the Plague of Athens. Instead, he was more interested in recording the physical effects the disease had on its victims and the efficacy of different treatments.

According to Galen, symptoms of the Antonine Plague included a high fever, soon followed by the appearance of black “cutaneous lesions and pustulas”⁹⁴ all over the body, which eventually began to dry up in instances where a patient was expected to survive.⁹⁵ The infected soon experienced an upset stomach, black stool or diarrhea (indication of intestinal lesions), and in some cases, vomiting.⁹⁶ Many suffered from lesions in their throats as well: patients first coughed up scabs, then fresh blood, and later began to cough up part of their esophageal or mucous membranes.⁹⁷ Others suffered from pulmonary issues, internal hemorrhaging, insomnia, and gangrene.⁹⁸

⁹³ Flemming, “Galen and the Plague,” 219.

⁹⁴ Gourevitch, “The Galenic Plague: A Breakdown of the Imperial Pathocoenosis: Pathocoenosis and Longue Durée,” 64.

⁹⁵ Littman and Littman, “Galen and the Antonine Plague,” 246-249.

⁹⁶ Gourevitch, “The Galenic Plague: A Breakdown of the Imperial Pathocoenosis: Pathocoenosis and Longue Durée,” 64.

⁹⁷ Littman and Littman, “Galen and the Antonine Plague,” 246-249.

⁹⁸ Gourevitch, “The Galenic Plague: A Breakdown of the Imperial Pathocoenosis: Pathocoenosis and Longue Durée,” 64.

No direct paleomicrobiological or archaeological evidence has been recovered from the time of the Antonine Plague, and as a result, DNA sequencing is not a viable option for modern scientists to identify the type of disease that struck Rome.⁹⁹ Despite a lack of concrete physical evidence, scholars largely concur that the Antonine Plague is most likely to have been caused by smallpox. The unique nature of the exanthem that appeared on the bodies of the infected, in addition to the high mortality rate of the disease, have led R. J. and M. L. Littman to conclude that the pestilence must have been hemorrhagic smallpox.¹⁰⁰ In the Littmans' widely cited article, they explain that the duration of the disease, combined with the other symptoms that Galen describes (i.e., fever, black stool, vomiting, and coughing) are all consistent with smallpox.¹⁰¹ The highly contagious nature of smallpox also makes it a likely candidate for the Antonine plague, as it is directly transmissible and can be contracted by the inhalation of airborne droplets expelled by an infected individual. Hemorrhagic smallpox is the most lethal type of smallpox, and other scholars believe the particular strain responsible may have been *poxviridae*, an ancestor of smallpox.¹⁰² This theory may be useful in explaining some of the differences in severity between the symptoms of the Antonine Plague and those of more modern strains of smallpox.

Archaeological Evidence and Mortality Estimates

While more physical evidence remains from the period of the Antonine Plague than from certain other plagues, even then, the evidence is scant and often confusing to interpret. As Colin

⁹⁹ Flemming, "Galen and the Plague," 225-226.

¹⁰⁰ Littman and Littman, "Galen and the Antonine Plague." 249.

¹⁰¹ Ibid, 251.

¹⁰² Gourevitch, "The Galenic Plague: A Breakdown of the Imperial Pathocoenosis: Pathocoenosis and Longue Durée," 65.

P. Elliott writes, “The existing epigraphic, papyrological and literary evidence is ambiguous at best. It provides only a vague sense of both the chronology and causality behind a second-century crisis which clearly featured many interconnected parts.”¹⁰³ However, the lack of documentation from the period during which the plague is believed to have hit Rome the hardest actually may be a sign of the destructive impact that the plague had on Roman society.

According to R. P. Duncan-Jones, the abrupt decline in available documentary series so closely with the dates of the major outbreaks of the Antonine Plague that a “connection with plague is likely.”¹⁰⁴

The overall death toll and mortality rate of the Antonine Plague have been a hot topic of debate among scholars for decades. Modern historians estimate the mortality rate of the pestilence to be anywhere from 1 to 33 percent, which translates to a confounding range of 1 to 25 million deaths.¹⁰⁵ Attempting to make such estimates is inherently challenging, as ancient sources are not only vague, but scholars have reason to believe that certain ancient authors may have exaggerated their accounts or estimates of the plague’s death toll. According to Géza Alföldy, “the tradition of Roman pessimism regarding the history of one’s own time was, as we know, as old as Roman literature itself.”¹⁰⁶

Estimating the epidemic’s death toll is also complicated by the fact that the same disease can have varying effects on the different regions due to factors like population density and individuals’ nutrition. Take the Plague of Athens, for example: ancient writers recount the ferocity with which the plague struck Athens, yet the areas surrounding the city—characterized by significantly lower population density—were barely affected. Another issue is that the

¹⁰³ Elliott, “The Antonine Plague, Climate Change and Local Violence in Roman Egypt,” 7.

¹⁰⁴ Duncan-Jones, “The Impact of the Antonine Plague,” 124.

¹⁰⁵ Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 91.

¹⁰⁶ Elliott, “The Antonine Plague, Climate Change and Local Violence in Roman Egypt,” 10.

majority of the papyrological evidence and data about population sizes that has survived from the Antonine period originate from Egypt.¹⁰⁷ Nonetheless, many scholars have attempted to use Egyptian census data to hypothesize the impact the plague may have had in the city of Rome or in other parts of the empire. Eriny Hanna warns of the dangers of conducting such a task, because “Egypt’s geography, culture, and division of labor were significantly different than any other province, let alone a city.”¹⁰⁸

Nor does modern scientific knowledge of smallpox aid in a death toll analysis: the Littmans write that, depending on the virulence of a given strain, the mortality rate of a smallpox outbreak might range anywhere from 1 to 80 percent.¹⁰⁹ On one extreme, some scholars (e.g., Otto Seeck) have posited that over half of the Roman Empire’s population perished from the Antonine Plague.¹¹⁰ On the other extreme (e.g., J.F. Gilliam), some scholars believe the mortality rate was only one or two percent.¹¹¹ However, most scholars agree that a mortality rate anywhere between 7 and 10 percent, or 7 to 8 million total deaths, is a more reasonable estimate for the total death toll of the Antonine Plague in the 23 years during which it spread across the empire.¹¹² Yet, even the estimates on the lower end of the range have a sufficiently hefty death toll to arouse concern: Kyle Harper writes that, even at the lowest estimates, the plague “was, in absolute terms, the worst disease event in human history up to that time.”¹¹³ It may be reasonable to assume that the mortality rates were lower in rural areas and higher (13-15%) in cities and armies.¹¹⁴

¹⁰⁷ Hanna, “The Route to Crisis: Cities, Trade, and Epidemics of the Roman Empire,” 6.

¹⁰⁸ Ibid.

¹⁰⁹ Littman and Littman, “Galen and the Antonine Plague,” 254.

¹¹⁰ Ibid, 244.

¹¹¹ Ibid.

¹¹² Ibid, 255.

¹¹³ Harper, *The Fate of Rome*, 115.

¹¹⁴ Littman and Littman, “Galen and the Antonine Plague,” 255.

Impact on Military

The plague took a disproportionate toll on Roman military forces. As the plague continued to ravage Rome towards the end of 168 CE, Romans faced a threat to their northeast border, as the Marcomanni and Quadi had crossed the Danube and entered Italy.¹¹⁵ Both emperors, Lucius Verus and Marcus Aurelius, attended by Galen, hastened north with their armies to the winter camp at Aquileia. There, the plague decimated the Roman army, killing many, including Lucius Verus in 169. Ancient historian Jerome attested that the Roman army suffered a catastrophic loss of life due to the plague, and that by 172 CE, the army had been nearly reduced to extinction.¹¹⁶ The legions, citing loss of manpower, petitioned for help from Rome.¹¹⁷ Marcus Aurelius was forced to employ emergency recruiting measures to revitalize the Roman forces: his biography reports that he resorted to “emergency conscriptions of slaves and gladiators and unusual levies of brigands.”¹¹⁸

The severely depleted army placed Rome at a considerable disadvantage for the remainder of the Marcomannic Wars. Marcus spent the final decade of his life in a “grinding and indecisive campaign” in the north.¹¹⁹ Upon his death in 180 CE, the Roman army still needed to conduct another year or two of warfare to secure the northern border.¹²⁰ However, the new emperor Commodus, eager to return to Rome and relish in the “ease and luxury of the imperial court,” conceded the territory which the Romans had been fighting for and entered into a peace treaty with the Marcomanni.¹²¹ Roman triumph in the Parthian campaign of 166 would

¹¹⁵ Benario, “Marcus Aurelius (A.D. 161-180).”

¹¹⁶ Duncan-Jones, “The Impact of the Antonine Plague,” 117.

¹¹⁷ Ibid.

¹¹⁸ Harper, *The Fate of Rome*, 112.

¹¹⁹ Ibid, 117.

¹²⁰ Benario, “Marcus Aurelius (A.D. 161-180).”

¹²¹ Quinn, “Commodus (A.D. 180-192).”

be Rome's sole military success for nearly fifty years. The army's ability to fend off intruders along the far-flung borders of the Roman Empire was permanently diminished in the wake of the Antonine Plague: "never again was Rome to hold the upper hand in its dealings with the Germanic tribes beyond the now reestablished borders of the empire."¹²² The challenges Rome faced at its borders and beyond in the post-Marcus Aurelius era are believed by some historians to have marked a turning point in the "fortunes of the empire."¹²³ Yet the loss in military might and manpower was only one of many detrimental effects the Antonine Plague had on Rome. Having swept across the empire for at least fifteen years after the initial outbreak in 165 CE, the plague also had a profound impact on economic, social, religious, and political aspects of Roman society.

Economic Impact

From the late republic through the early empire, Rome had enjoyed a prosperous and remarkably stable economy: according to Peter Temin's data analysis, prices remained stable, and inflation remained below two percent each year.¹²⁴ In response to the Antonine Plague, however, prices and wages rose sharply—nearly doubling—towards the end of the second century CE.¹²⁵ The supply of labor decreased as many workers had died from the plague. While the same amount of money remained in circulation as there had been prior to the plague, it was dispersed among fewer consumers, who in turn used their money to bid up the prices of goods in short supply.¹²⁶ Agricultural production was disrupted, and a reduction in the population shifted

¹²² Benario, "Marcus Aurelius (A.D. 161-180)."

¹²³ Harper, *The Fate of Rome*, 117.

¹²⁴ Temin, "Price Behavior in the Roman Empire," 73.

¹²⁵ *Ibid*, 74.

¹²⁶ *Ibid*, 85.

the ratio of land to labor across the countryside of the empire.¹²⁷ As labor became more scarce and land more abundant, labor prices and wages increased, while land prices plummeted.¹²⁸

Data from Roman Egypt indicates that land, rent, wine, and oil prices all decreased during the time of the epidemic, wheat prices stayed the same (this is largely attributable to the fact that Egypt was a major wheat exporter), while monthly wages and donkey prices increased.¹²⁹

Production plummeted in other sectors of the economy as well. The mining of silver collapsed suddenly, creating a short-term monetary crisis that resulted in the debasement of silver coinage from 165 CE onwards.¹³⁰ Public infrastructure projects appear to have all but ceased for some time after the plague. A gap in records from 166 to 173 CE suggests that there was little activity in Rome's marble quarries during the Antonine Plague, and when activity later resumed, it occurred on a much smaller scale than before.¹³¹ The plague's death toll reduced the number of taxpayers, businessmen, and farmers throughout the Roman Empire. This quickly became problematic, as expenses for maintaining the empire and paying military forces continued to rise as individual earnings and government revenue declined.

It is clear that the Roman Empire was in dire need of money: the high costs of waging war and employing soldiers to fight the Macromanni took a toll on imperial finances during Marcus Aurelius' reign, as he was forced to auction off treasures from the imperial palace to raise military funds.¹³² However, there is ample evidence to suggest that the Empire continued to struggle financially for decades after Marcus' death. In the first and second centuries CE, Roman rulers had taken a relatively laissez-faire approach to their management of Roman

¹²⁷ Elliott, "The Antonine Plague, Climate Change and Local Violence in Roman Egypt," 7.

¹²⁸ Sheidel, "Roman Wellbeing and the Economic Consequences of the 'Antonine Plague,'" 16-22.

¹²⁹ Ibid.

¹³⁰ Harper, *The Fate of Rome*, 113.

¹³¹ Duncan-Jones, "The Impact of the Antonine Plague," 129.

¹³² Harper, *The Fate of Rome*, 116.

territories. The empire was “highly decentralized,” with local governors and advisors ruling their respective provinces, while local elites handled tax collection.¹³³ After the Antonine Plague, however, the Roman taxation system became increasingly centralized: central government officials, tasked with the collection of taxes and supplies for the state, were dispatched to various cities and countrysides across the empire.¹³⁴ According to Arjan Zuiderhoek, ancient sources “point towards a clear central government attempt to gain greater direct control over provincial surplus extraction by means of centralizing the gathering of taxes,” and such a response is “expected” of an imperial government grappling with declining tax revenue spurred by demographic contraction.¹³⁵ The Antonine Plague appears to have had a destructive impact on the Roman economy and the Empire’s financial situation.

Nowhere in the Roman Empire were the tremors of economic decline felt more than in Roman Egypt. Egypt featured the highest population density of any province in the empire—nearly 300 people per square kilometer,¹³⁶ which created conditions ripe for the spread of disease. Thus, while population decline from the plague had already taken a toll on local economies, the imperial taxes imposed upon Egyptian villages exacerbated the financial struggles that many faced. The collection of Egyptian poll taxes—flat-rate taxes paid by all adult male residents—was delegated to the municipal level, and local communities were expected to collect payment from their residents.¹³⁷ The value of the taxes each town was expected to gather were calculated using census data that was collected every fourteen years.¹³⁸ Understandably, the plague’s death toll must have created a serious burden on local towns to collect taxes, the

¹³³ Zuiderhoek, “Government Centralization in Late Second and Third Century A.D. Asia Minor: A Working Hypothesis,” 41.

¹³⁴ *Ibid.*, 46-47.

¹³⁵ *Ibid.*, 47.

¹³⁶ Elliott, “The Antonine Plague, Climate Change and Local Violence in Roman Egypt,” 8-9.

¹³⁷ *Ibid.*, 14-15.

¹³⁸ *Ibid.*

amount of which had been calculated based on their pre-plague population.¹³⁹ Census figures in tax documents indicate that villages along the Nile delta suffered dramatic population loss, which is likely attributable to some combination of individuals having died from the plague and individuals having fled to other areas. Between A.D. 159/60 and 169/70, some towns in the Nile delta showed a 70-90% decline in adult male registered taxpayers.¹⁴⁰ This astonishing decrease in population is likely due to some combination of plague deaths and the decision of many to flee so that they could avoid paying hefty taxes.

Economic struggles that initially had been caused by the plague's death toll soon precipitated an agricultural crisis, which further worsened the economic situation in Roman Egypt. Farm leases in Egypt during and after the Antonine Plague "show strong abnormalities."¹⁴¹ Many individuals began to rent significantly smaller plots of land in the decades following the plague, and agricultural production levels appear to have been remarkably far off from their projections. P.Oxy.LXVI 4527, a list of taxes "from the meris of Herakleides in the Arsinoite nome" dating from 185 CE, indicates that the percentage of wheat harvested at the end of the year was only 27.5% of the projected figure.¹⁴² According to Elliott, Roman Egypt's "volatile mixture of a short-term agricultural crisis, tax burdens, and economic inequality" may also explain the surge in civil unrest in the years during and after the outbreak of plague in Egypt.¹⁴³

¹³⁹ Elliott, "The Antonine Plague, Climate Change and Local Violence in Roman Egypt," 15.

¹⁴⁰ Duncan-Jones, "The Impact of the Antonine Plague," 121.

¹⁴¹ *Ibid.*, 121-122.

¹⁴² Van Minnen, "P. Oxy. LXVI 4527 and the Antonine Plague in the Fayyum," 176.

¹⁴³ Elliott, "The Antonine Plague, Climate Change and Local Violence in Roman Egypt," 7.

Social Changes

While Egypt faced social unrest and revolts in the aftermath of the Antonine Plague and in response to the tanking economy, whether or not comparable social unrest occurred in other areas of the Roman Empire is a subject of debate among scholars. Danielle Gourevitch broadly asserts that the Roman population was panic-stricken and “behaved strangely, coming to unusual religious and magical attitudes, unheard of cowardly acts, and dangerous disturbances.”¹⁴⁴ On the other hand, Kyle Harper argues that “None of the literary sources for the Antonine Plague report social chaos in the midst of the pestilence; the integrity of the social order seems to have held together, except perhaps for a complex crisis in the Nile delta.”¹⁴⁵ Without a doubt, the plague disrupted Roman citizens’ way of life. However, whether or not such unrest occurred on a scale similar to the Nile delta is unclear.

Although a semblance of social order may have been preserved in many areas of the Roman Empire—the Nile Delta notwithstanding—the Antonine Plague era was marked by considerable social change. Even prior to the Antonine Plague, Roman society had been remarkably accepting and provided opportunities for social mobility: citizenship rights were liberally bestowed, and men from provinces were able to gain entry into the upper classes of the Roman aristocracy.¹⁴⁶ While wealth was unequally distributed and Rome was home to an extensive slavery system, Roman society was still markedly more progressive than many other ancient societies. The plague did not level social equality—even after the plague, Rome’s political and landlord classes were able to exert control over the empire’s agricultural territories

¹⁴⁴ Gourevitch, “The Galenic Plague: A Breakdown of the Imperial Pathocoenosis: Pathocoenosis and Longue Durée,” 59.

¹⁴⁵ Harper, *The Fate of Rome*, 110.

¹⁴⁶ *Ibid*, 9.

and rural populations.¹⁴⁷ However, it did create new opportunities for commoners to hold political office. For example, the heavy mortality of the Antonine Plague in Athens claimed the lives of so many individuals who had previously been eligible to hold office that Marcus Aurelius was forced to loosen the requirements for eligibility in the 170s. In 174/75, Marcus Aurelius wrote to Athens to loosen the rules for office-holding, scrapping the previous requirement that any individual who wished to hold office needed to have three generations of citizen ancestry.¹⁴⁸ According to Duncan-Jones, Marcus' sudden abandonment of these rules indicates a "serious crisis."¹⁴⁹

Religious Changes

The Antonine Plague ushered in an era of religious change across the empire as well. In the absence of germ theory, many turned to religion for an explanation of the origins of the plague. One theory was that, while the Romans were sacking Seleucia after having defeated the Parthians, Lucius Verus opened a sealed tomb that released the virus.¹⁵⁰ According to this theory, the plague was a punishment from the gods, as the Romans had violated an earlier oath not to pillage the city. The other preeminent explanation was that a Roman soldier had opened a casket in the Temple of Apollo in Babylon, which allowed the plague to escape.¹⁵¹ Both theories persisted for centuries after the plague's outbreak: two different fourth-century sources "ascribe the outbreak to participating in a sacrilege, violating the sanctuary of a god and breaking the oath."¹⁵² As many Romans believed these theories to be legitimate explanations for the onset of

¹⁴⁷ Zuiderhoek, "Government Centralization in Late Second and Third Century A.D. Asia Minor: A Working Hypothesis," 44.

¹⁴⁸ Duncan-Jones, "The Impact of the Antonine Plague," 134.

¹⁴⁹ Ibid.

¹⁵⁰ Horgan, "Antonine Plague."

¹⁵¹ Ibid.

¹⁵² Ibid.

the pestilence, the immediate response was a widespread worship of Apollo, in the hopes that the god might be appeased into warding off the plague.¹⁵³ Eleven apotropaic inscriptions have been found on stones recovered from various corners of the empire, which, embedded into stone walls to ward off the plague, prayed “To the gods and goddesses, according to the interpretation of Apollo at Claros.”¹⁵⁴ According to Kyle Harper, the proliferation of Apolline religion generated by the Antonine plague was “utterly unlike anything else in the records of ancient epigraphy.”¹⁵⁵

However, polytheistic worship of the Greco-Roman gods—the prevalent form of religion for the previous several centuries—was no longer the only religion in town. Christianity had made its way to Rome and was on the rise. While the influence of the church spread rapidly across the empire in the second century, Christians’ position within Roman society was far from desirable, as they were often made as scapegoats for local crises and subjected to abuse or punishment.¹⁵⁶ Things worsened during the plague, as Marcus Aurelius launched persecutions against Christians who refused to pay homage to the Greco-Roman gods, whom Marcus believed had made their wrath known in the form of the epidemic.¹⁵⁷ Despite the violence that they faced from the Roman authorities, Christians proved invaluable to Roman society in the late second century. Christians believed they were obligated to help others in times of sickness or need, and while the Antonine Plague ravaged Rome, many brought food and water to the sick and helped care for them.¹⁵⁸ While the violence Christians faced at the hands of the Roman imperial government during the plague is disconcerting, some scholars believe that Christianity ultimately gained traction in the aftermath of the plague, as the promise of salvation in the afterlife attracted

¹⁵³ Harper, *The Fate of Rome*, 100.

¹⁵⁴ *Ibid.*, 100-101.

¹⁵⁵ *Ibid.*, 101.

¹⁵⁶ Benario, “Marcus Aurelius (A.D. 161-180).”

¹⁵⁷ Horgan, “Antonine Plague.”

¹⁵⁸ *Ibid.*

additional followers.¹⁵⁹ Thus, the pestilence was marked by an upheaval of the pre-existing religious order, which often came at the cost of Christian livelihood, in spite of the help the Christians had provided to the sick.

Political Changes

Another consequence of the plague was that it cut short Marcus Aurelius' life. Although Marcus Aurelius' reign was consumed by his military standoff in the north, his personal reputation has "never failed of admirers,"¹⁶⁰ and he attempted to do his best to lead the Roman people through troublesome times. He devoted the majority of his time and resources to defending the borders of the Roman Empire and is often regarded as a man of ability with a strong sense of duty to Rome. Put simply, Marcus "sacrificed his own delights and interests to the well-being of the state."¹⁶¹ Unfortunately, the same cannot not be said of his successors.

Marcus Aurelius Antoninus would be the last of the "Five Good Emperors,"¹⁶² as his son and successor Commodus did not embody similar leadership qualities. Commodus was a narcissistic emperor whose rule was marred by political strife and outrageous behavior. Commodus claimed that he was related to Hercules and dressed accordingly, often donning lion skins and carrying a club.¹⁶³ He declared himself the "new Romulus" in 190 CE, and just two years later, gave himself the official title of "Hercules."¹⁶⁴ Commodus later attempted to rename every month of the calendar to correspond to the various absurd titles he had bestowed upon himself.¹⁶⁵ With growing vigor, the emperor Commodus presented himself "as the center of

¹⁵⁹ Horgan, "Antonine Plague."

¹⁶⁰ Benario, "Marcus Aurelius (A.D. 161-180)."

¹⁶¹ Ibid.

¹⁶² Horgan, "Antonine Plague."

¹⁶³ Quinn, "Commodus (A.D. 180-192)."

¹⁶⁴ Ibid.

¹⁶⁵ Ibid.

Roman life.”¹⁶⁶ While Commodus frequently proclaimed that his era of leadership should be regarded as a “Golden Age,” in the view of Dio Cassius—a third century historian—Commodus’ accession as emperor marked the descent of the Roman Empire “from a kingdom of gold to one of rust and iron.”¹⁶⁷

While the Antonine Plague did not cause an immediate leadership struggle, it clipped “the miraculous efflorescence of the *pax Romana*” at its bloom.¹⁶⁸ The years following Commodus’ reign were distinguished by a frequent turnover of emperors. According to Temin, the number of emperors in each half-century remained in the single digits until the late second century, “after which it stayed in double digits until 500 CE.”¹⁶⁹

Conclusion

In many ways, it is unfortunate that the very things that made the Roman Empire great in the first and second centuries—trade, travel, frequent exchange of ideas, control over large swaths of territory, and military might—were what exacerbated the spread and destruction caused by the Antonine Plague. While social issues and inequalities existed in the empire prior to the outbreak of plague, many problems were either created or amplified by the pestilence. The outbreak of the Antonine Plague has been cited by some historians as a turning point in the history of the Roman Empire; a calamity that sent Rome hurtling towards collapse. The ancient historian Herodian wrote that the period of Roman history after the death of Marcus Aurelius was “a continual series of heavy catastrophes, interrupted at best by short breathing-spells which

¹⁶⁶ Quinn, “Commodus (A.D. 180-192).”

¹⁶⁷ Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 92.

¹⁶⁸ Harper, *The Fate of Rome*, 118.

¹⁶⁹ Temin, “Price Behavior in the Roman Empire,” 79.

were followed, however, by worse periods, with the danger that the Empire might collapse.”¹⁷⁰ The Cunhas write that the Antonine Plague “was a blow from which Rome never recovered,”¹⁷¹ and that it “most definitely set Rome on her long decline to ruin.”¹⁷² Christer Bruun urges readers to take caution in accepting such a narrative, remarking that readers should not take late literary sources “at face value when they claim [the Antonine Plague] was the worst ever.”¹⁷³

While the Roman Empire certainly needed time to recover from the effects of the Antonine Plague, many scholars believe that Rome was able to recuperate in the decades that followed. Although Rome never returned to the height of its pre-plague population, Harper reminds us that the empire was so heavily populated prior to the plague that even a considerable death toll would have left Rome by no means empty.¹⁷⁴ Claims other authors have made, like “so many people died that the economy came close to failing,”¹⁷⁵ are not credible in the context of an estimated 7-10% mortality rate. Moreover, in the years after the plague, birth rates skyrocketed, and the population once again began to increase at a steady rate.¹⁷⁶

Walter Scheidel urges caution in drawing sweeping conclusions regarding the permanency of Roman decline after the Antonine Plague. Given the minimal evidence that remains from the time, he urges that “historians would be well advised to exercise restraint in instrumentalizing this poorly known event as a ‘deus ex machina’ mechanism to account for presumed demographic or economic transformations.”¹⁷⁷ Thus, while the Antonine Plague “was

¹⁷⁰ Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 95.

¹⁷¹ Cunha and Cunha, “Great Plagues of the Past and Remaining Questions,” 10.

¹⁷² *Ibid.*, 13.

¹⁷³ Bruun, “The Antonine Plague and the ‘Third-Century Crisis,’” 208.

¹⁷⁴ Harper, *The Fate of Rome*, 116.

¹⁷⁵ Mark, “Plague in the Ancient & Medieval World.”

¹⁷⁶ Zuiderhoek, “Government Centralization in Late Second and Third Century A.D. Asia Minor: A Working Hypothesis,” 42.

¹⁷⁷ Scheidel, “Roman Wellbeing and the Economic Consequences of the ‘Antonine Plague,’” 23.

not a *decisive* event in Roman history,”¹⁷⁸ A. E. R. Boak and other scholars suggest that the Antonine Plague, along with other outbreaks, may represent a useful starting point for understanding the beginning of the decline of the Roman Empire. It is undeniable that the plague marked the end of the era of the *pax Romana*, created economic hardships for many, and altered Roman politics, social dynamics, and religion. And while it cannot be said that the Antonine Plague is to blame for the fall of the Roman Empire in the centuries that followed, the upheaval of the status-quo that it provoked ended “a certain trajectory in the development of Roman state and society.”¹⁷⁹

¹⁷⁸ Littman and Littman, “Galen and the Antonine Plague,” 255.

¹⁷⁹ Harper, *The Fate of Rome*, 115.

THE PLAGUE OF CYPRIAN (250 CE)

Background

In the century following the Antonine Plague, the Roman Empire slowly began to revive. While the empire's population levels would never again reach pre-Antonine Plague levels, Rome's population rebounded spectacularly. Under the prudent leadership of rulers from the Severan Dynasty, the empire's "most influential dynastic builders,"¹⁸⁰ between the years of 193 and 235 CE Rome's demography and economy recovered and flourished. Prices, which had risen sharply in response to the plague, eventually stabilized, and the minted coinage of the Roman state—despite having been debased—managed to regain full purchasing power.¹⁸¹ Citizenship rights were bestowed liberally from 212 onwards after Caracalla granted citizenship to all free inhabitants of the Empire.¹⁸² A building boom serves as further evidence of the recovery. The Severan emperors undertook ambitious construction projects, such as the famous triumphal arch in the Roman Forum and the Baths of Caracalla. Peace had been re-established and the empire re-stabilized.

Although Alexander Severus—the last of the Severans—was assassinated while campaigning along the Rhine in 235, his successors continued to conduct military campaigns and successfully secured the borders of the empire. After years of war with Persia, Philip the Arab, who served as Rome's emperor from 244 to 249, finally negotiated a peace treaty with the Persian king Shapur I.¹⁸³ Philip's background, as well as his provincial and administrative

¹⁸⁰ Ibid, 123.

¹⁸¹ Harper, "Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian," 250.

¹⁸² Harper, *The Fate of Rome*, 125.

¹⁸³ Meckler and Körner, "Philip the Arab and Rival Claimants of the Later 240s."

policies, were similar to those of the Severans. He attempted administrative reforms in Egypt and commissioned the improvement of roads across the empire.¹⁸⁴ In April of 248 CE, under Philip the Arab's reign, the Romans celebrated the 1000th anniversary of their city's foundation. This spectacular festival lasted for "three days and three nights,"¹⁸⁵ as Romans took to the streets to party and celebrate. There was much to extol: over the course of a millennium, Rome—once a small village of outcasts and dreamers—now spanned three continents and had morphed into one of the world's most powerful empires.

Just one year later, Philip the Arab was murdered. He had sent one of his new commanders, Gaius Messius Quintus Decius, north to assemble the Danubian troops, yet the troops revolted and proclaimed Decius as their emperor.¹⁸⁶ Decius' troops subsequently assassinated Philip. The abrupt end to Philip's reign "touched off a spiral of dissolution that would engulf the entire imperial order."¹⁸⁷ Decius, desperate to endear himself to the Roman aristocracy and legitimize his rule, undertook "a highly conservative program of imperial propaganda."¹⁸⁸ While his infrastructure projects were commendable, as he restored the Roman Colosseum and commissioned the Decian baths, the wide-scale attacks he launched on Christians were horrifying. Decius attacked the growing Christian minority within the empire, launching empire-wide persecutions and promoting violence against them.¹⁸⁹ In 251 CE, Decius was murdered in battle at Abrittus, and Trebonianus Gallus was named as his successor.

Eager to head west and return to Rome to solidify his position as emperor, Gallus signed a peace treaty with the Goths, whom he and Decius had been fighting in the east.¹⁹⁰ The most

¹⁸⁴ Ibid.

¹⁸⁵ Harper, *The Fate of Rome*, 119.

¹⁸⁶ Meckler and Körner, "Philip the Arab and Rival Claimants of the Later 240s."

¹⁸⁷ Harper, *The Fate of Rome*, 121.

¹⁸⁸ Nathan and McMahon, "Trajan Decius (249-251 A.D.) and Usurpers During His Reign."

¹⁸⁹ Ibid.

¹⁹⁰ Moore, "Trebonianus Gallus (251-253 A.D.) and Gaius Vibius Volusianus (251-253 A.D.)."

formidable threat to the empire of which the Romans were aware had, for the time being, been quelled. But, unbeknownst to the Romans at the time, another menacing enemy in the east had already begun to move westward and was rapidly approaching the boundaries of the Roman Empire.

Timeline and Contemporary Account of Symptoms

The Cyprian Plague hit major urban areas, towns, and countrysides alike, regardless of population density. It was indiscriminate across social lines, highly contagious (in the words of one 10th-century source, it was “transmitted through the clothing or simply by sight”¹⁹¹), and attacked its victims mercilessly, displaying an exceptionally high mortality rate. It struck most ferociously in the late fall and winter, and its effects were exacerbated by the drought and famine that occurred throughout the Roman empire prior to the plague’s arrival and throughout the multi-decade duration of the plague’s attack.¹⁹² The disease continued to resurface for two decades after its original appearance; its presence has been attested by various circum-Mediterranean populations from 248 until 270.¹⁹³

According to a letter from Dionysius of Alexandria, the Cyprian Plague first emerged in Alexandria in 249. Moving from east to west, the disease quickly spread across the Roman Empire, reaching Rome in the late summer or early fall of 251 CE, and arriving at Carthage in the summer of 252. The plague featured an acute onset, debilitating diarrhea, an “attack of fevers,” vomiting, excessive thirst, and conjunctival bleeding.¹⁹⁴ In many cases, patients’ limbs

¹⁹¹ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 232.

¹⁹² Yeomans, “Pandemics, Climate and the Fall of the Roman Empire.”

¹⁹³ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 224.

¹⁹⁴ Cyprian, “On the Mortality (or Plague) De Mortalitate.”

had putrefied and needed to be amputated.¹⁹⁵ According to Cyprian’s “De mortalitate”—the sole surviving contemporary account of the disease’s symptoms—those who managed to survive faced severe debilitation, brain damage, hearing loss, and blindness.¹⁹⁶ While the Romans were well acquainted with periodic cycles of epidemic mortality, the Plague of Cyprian “was something qualitatively new”:¹⁹⁷ a virgin soil epidemic to which no individual was immune. The Cyprian Plague is surprisingly well attested, especially in light of third century Rome’s notoriously obscure literary evidence. Kyle Harper has identified twenty-three distinct literary witnesses to the plague, seven of whom were contemporary with the plague, hailing from across the empire—from Egypt and North Africa to Syria and Athens.¹⁹⁸

Modern Medical Assessment

To date, it has not been possible to ascertain the specific pathogen responsible for the Plague of Cyprian through an examination of genetic evidence recovered from archaeological remains. However, through careful analysis of available literary evidence from the time, historians and scientists have been able to make a convincing disease assessment. In past decades, historians have posited a wide range of possible diseases: measles (W. H. McNeil), meningitis (H. Zinsser), smallpox, influenza, or bubonic plague.¹⁹⁹ However, the symptoms and seasonality of the plague—as described by ancient sources—make influenza, bubonic plague, measles, meningitis, anthrax, cholera, or typhus unlikely.²⁰⁰ Smallpox remains a possibility, as

¹⁹⁵ Ibid.

¹⁹⁶ Ibid.

¹⁹⁷ Harper, *The Fate of Rome*, 140.

¹⁹⁸ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 227.

¹⁹⁹ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 245.

²⁰⁰ Ibid, 246.

its communicability and fatality rates align with the plague, along with a number of its other symptoms, yet it can only be a “possible culprit,” as smallpox typically occurs in the summer, and Cyprian does not mention the rash characteristic of smallpox.²⁰¹

In the past two decades, scholars have come to agree that viral hemorrhagic fever (VHF), a family of zoonotic diseases caused by a variety of RNA viruses, appears to be the most likely disease responsible for the Cyprian Plague.²⁰² There are various strains of VHF that can be transmitted in different ways. However, scientists believe that the strains carried by rodents and insects are unlikely to have caused the Cyprian Plague, as there is no literary evidence to suggest that rodents were prevalent at the time, and the seasonality of the plague does not make insects (typically mosquitoes in the case of VHF) a likely carrier.²⁰³ Thus, the most likely type of VHF to be responsible for the plague of Cyprian is a filovirus: a hemorrhagic fever such as Ebola, which is highly contagious and transmitted from one person to another via bodily fluids.²⁰⁴ Such a virus can survive for days inside of dead bodies, making burial dangerous and a source of spread for the infection.²⁰⁵ The symptoms of Ebola align exactly with those that Cyprian describes. Moreover, the style of contagion would make sense in light of our knowledge regarding the timeline of the Cyprian Plague. A filovirus would be able to diffuse quickly across the empire, but because of its reliance on bodily fluids for transmission and its failure to confer immunity upon its victims, “it could exhibit the slow burning, ‘unusually relentless’ dynamics that so struck contemporary observers.”²⁰⁶ While Ebola virus may be used as a model for the

²⁰¹ Ibid.

²⁰² Kearns, “A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE,” 46.

²⁰³ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 246–248.

²⁰⁴ Harper, *The Fate of Rome*, 144.

²⁰⁵ Kearns, “A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE,” 46.

²⁰⁶ Harper, *The Fate of Rome*, 144.

Cyprian plague, it is possible that the plague was another strain of filovirus with which we are unfamiliar in the modern era.²⁰⁷ This is because DNA from VHF diseases historically have not held up well for long enough after the host's death to make paleomicrobiology a feasible method of confirmation.²⁰⁸

Mortality Estimates

Poor record-keeping from the third century has made it impossible to estimate the death toll of the Cyprian Plague. One of Dionysius of Alexandria's letters—addressed to the bishop Hierax in 249—implies a 62% drop in the population of Alexandria during the time of the Cyprian plague.²⁰⁹ However, as in the case of population decline during the Antonine Plague, it is reasonable to assume that this drop is attributable to some combination of plague mortalities and individuals fleeing from the region. In 262, it is written in the *Historia Augusta* that “Such a great plague arose in both Rome and the cities of Greece that in one day 5000 people died of the same disease.”²¹⁰ While ancient authors are notorious for hyperbole, it is clear that the mortality of the Cyprian Plague was exceptionally severe and struck on an unprecedented scale. The Ebola crisis of 2013-2016 had a mortality rate somewhere between a 40 and 70%, and it would be reasonable to estimate a similar mortality rate for those who were infected in Rome in the

²⁰⁷ Kearns, “A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE,” 47-50.

²⁰⁸ Yeomans, “Pandemics, Climate and the Fall of the Roman Empire.”

²⁰⁹ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 228.

²¹⁰ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 235.

third century.²¹¹ Ancient sources affirm a grim death toll, describing the plague as a disease that “day by day” abruptly “attack[ed] numberless people, every one from his own house.”²¹²

There also exists strong archaeological evidence in support of an empire-wide plague in the 250s CE. Archaeologists have discovered a mass grave in Thebes with a “purpose-built corpse incineration complex.”²¹³ Dating from the mid-third century, the burial methods for the dead in this complex indicate haste and unorganized deposition.²¹⁴ Therefore, it can reasonably be assumed that those buried in this mass grave were victims of the Cyprian Plague.²¹⁵ In 2002, archaeologists recovered mass burials at the Catacombs of Marcellinus and Peter, unearthing large rooms stacked with more than 1300 skeletons buried in a single event, the timing of which also coincides with that of the Plague of Cyprian.²¹⁶ According to Michael McCormick, these specific findings, as well as others across the empire, may be considered as evidence of the plague, as they are characterized by the “burial of a large number of human beings that violates the traditional norms by which [Roman] society enmeshed and interpreted death.”²¹⁷

This empire-wide pandemic wrought havoc across the three separate continents which the Roman Empire straddled at the time, and spanned the reign of at least eight Roman emperors. Such an enormous death toll and upheaval of daily life came with extreme religious, economic, military, and sociopolitical changes.

²¹¹ Kearns, “A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE,” 49-50.

²¹² Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 230.

²¹³ *Ibid.*, 226.

²¹⁴ *Ibid.*

²¹⁵ McCormick, “Tracking Mass Death during the Fall of Rome’s Empire (I),” 329.

²¹⁶ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 226.

²¹⁷ McCormick, “Tracking Mass Death during the Fall of Rome’s Empire (I),” 329.

Religious Changes

Near the end of 249 CE, Decius required all Roman citizens to partake in pagan religious sacrifices, and “deployed the machinery of the empire to enforce [his] order.”²¹⁸ Not only were Christians frequently scapegoated, but Decius forced them to prove their loyalty to Rome with an act of pagan sacrifice. When many Christians refused to comply, the Roman government extended its efforts to squash the growing church, exerting control over and inflicting punishments upon those who refused to comply.

The majority pagan population, alongside pagan emperors, quickly blamed the outbreak of the Cyprian Plague on the perceived failure of the Christian community to adequately worship the pagan gods.²¹⁹ As the pagans believed that Apollo had the power to protect them from plague and famine, their worship of Apollo intensified in a similar manner as it had during the Antonine Plague. This is evidenced by the large number of coins that were minted in the empire from 251 to 260 CE inscribed with “Apollo Salutaris” (Apollo the healer).²²⁰ Despite the charitable work of many Christians during the epidemic—they cared for the sick and even helped the pagans when they fell ill—in 252 CE, Gallus, too, ordered sacrifices to be made across the Empire. As Christian communities across the Roman Empire had already been “embattled before the plague’s arrival,”²²¹ Gallus’ order, paired with the high mortality and suffering caused by the plague, heightened the terror that many felt.

One of the most comprehensive and frequently cited sources contemporary with the plague is Cyprian’s “De mortalitate,” a sermon addressed to the Christian community during the

²¹⁸ Harper, *The Fate of Rome*, 153-4.

²¹⁹ Kearns, “A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE,” 14.

²²⁰ *Ibid.*, 23-24.

²²¹ Scourfield, “The De Mortalitate of Cyprian: Consolation and Context,” 23.

plague's outbreak at Carthage in 252 CE. Cyprian himself was a pagan who had converted to Christianity and served as the Bishop of Carthage from 248 to 258.²²² In his sermon, Cyprian attempted to address the Christians' fears surrounding the increasingly hostile treatment they faced from the Roman government, as well as the high mortality rate of the epidemic as it ravaged the city. As the extreme virulence of the virus made it unreasonable for him to foster hope of physical healing, Cyprian instead attempted to persuade the Christians of the spiritual gains that would result from their suffering from the plague, developing a "biblical framework" through which the trials the Christians faced could be viewed as "spiritually beneficial."²²³

At the time, Cyprian viewed the plague as an apocalyptic event that presaged the "end of the territorial world and the coming to the kingdom of heaven."²²⁴ Under the circumstances that the third century Romans faced, it is understandable that they viewed the epidemic as apocalyptic, because their lack of knowledge regarding the cause of the disease "led to a feeling of complete helplessness and contributed greatly to the terror experienced during the epidemic."²²⁵ Cyprian reassured the Christians that the suffering they faced from the plague would help to confirm their faith in God and secure their place in heaven, proclaiming that "all the injury inflicted by present troubles is to be despised in the assurance of future blessing."²²⁶ Moreover, he encouraged the Christians to "rejoice" in their ability to "stand erect amid the desolation of the human race, and not to lie prostrate with those who have no hope in God."²²⁷ While many Christians were troubled by the fact that the plague did not discriminate between

²²² Cillers, "Greek, Roman and Christian Views on the Causes of Infectious Epidemic Diseases," 92.

²²³ Murphy, "Death, Decay and Delight in Cyprian of Carthage," 87-88.

²²⁴ Scourfield, "The De Mortalitate of Cyprian: Consolation and Context," 15.

²²⁵ Cillers, "Greek, Roman and Christian Views on the Causes of Infectious Epidemic Diseases," 80.

²²⁶ Cyprian, "On the Mortality (or Plague) De Mortalitate."

²²⁷ Ibid.

them and the pagans, Cyprian attempted to dispel their anxieties and promote hope and excitement for their ultimate arrival in heaven.

In 260 CE, Gallienus stopped the persecution of Christians, marking the beginning of an era of peace upon the church that lasted for more than forty years. While the raw facts concerning the rise of Christianity in the wake of the Cyprian plague are “obscure and heavily debated,”²²⁸ it is evident that Christians began to move “confidently” and “in high circles,” becoming “more visible than ever.”²²⁹ Until 200 CE, Christians had been “virtually invisible in the documentary record,”²³⁰ but by 300 CE it was clear that Christianity had become more widespread, as evidenced by the increased use of Christian names in papyri, and the construction of Christian meeting spaces and burial sites in Rome.²³¹ According to one estimate, by 300 CE, up to 15-20% of the Egyptian population may have been Christian.²³² While paganism remained the most popular form of religion, in the wake of the Cyprian Plague, Christianity morphed from being a marginal religion to a “minority” religion.²³³

Although the decade during which Cyprian was the Bishop of Carthage was marked by “persecution, schism, and plague,”²³⁴ his leadership of the Christian community made a significant contribution to the subsequent rise of Christianity. Cyprian was executed in 258 CE for his failure to renounce Christianity and was awarded sainthood posthumously for his martyrdom. Some scholars, such as Harper, have gone so far to assert that the ten years of

²²⁸ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 256.

²²⁹ Harper, *The Fate of Rome*, 156.

²³⁰ *Ibid*, 155.

²³¹ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 257.

²³² Harper, *The Fate of Rome*, 155.

²³³ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 257.

²³⁴ Murphy, “Death, Decay and Delight in Cyprian of Carthage,” 79.

Cyprian's episcopate were "among the most consequential in the history of the church."²³⁵ The fact that the plague came to bear Cyprian's name in its aftermath, and that this title has endured, speaks to the great influence he wielded and all that he did for the church: Caroline Wazer suggests that the adoption of the term "Cyprian Plague" to refer to the epidemic be viewed as "hard proof of the superiority of Christianity over traditional Roman religion."²³⁶

Economic Impact

In addition to the social turmoil and unstable political climate brought about by the Cyprian Plague, it also caused the Roman economy to fluctuate wildly in the 250s and 260s CE. Infrastructure projects stopped almost in their entirety, particularly in northern Syria around 250/1.²³⁷ Cyprian noted the problems caused by food shortages, the exhaustion of mines and quarries, and the decline of craftsmanship and agriculture across the empire.²³⁸ De-urbanization, rural population decline, and ruptures in production and trading systems have been proven archaeologically as well.²³⁹ Tax records show a significant population decline in Egyptian settlements,²⁴⁰ which is likely due to a combination of deaths from the plague and the decision of others to relocate. This sequence of shocks to the monetary system around 250 caused the Roman Empire's silver-based monetary and financial system to disintegrate. The silver content of coinage "virtually disappeared"²⁴¹ as existing coins were melted and re-minted with a lower

²³⁵ Harper, *The Fate of Rome*, 136.

²³⁶ Wazer, "The Plagues That Might Have Brought Down the Roman Empire."

²³⁷ Kearns, "A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE," 18-22.

²³⁸ Alföldy, "The Crisis of the Third Century as Seen by Contemporaries," 101.

²³⁹ Harper, *Pandemics, Climate Change, and The Fall of Rome*.

²⁴⁰ Harper, "Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian," 228.

²⁴¹ *Ibid*, 250-251.

silver content, and the empire stopped minting *denarius* and *sestertius* coins.²⁴² The quantity of minted coins exploded, as did incidences of coin hoarding.

Inflation spiraled, and periods of hyperinflation occurred throughout the empire for nearly ninety years after the outbreak of the Cyprian Plague.²⁴³ The sophisticated credit markets and banking systems of the Roman world were wiped out, disappearing for more than a generation. Emperors' attempts to salvage the economy through currency reforms were to no avail. Aurelian, in particular, attempted to improve Rome's economy through monetary reform in 274 by introducing *antoniniani* coins that contained five percent silver, a higher quantity of silver than the coins being minted at the time.²⁴⁴ Not only was his reform unsuccessful—Harper referred to it as “the final trigger for a precipitous collapse”—but it also conveys the severity of the economic problems Aurelian faced, as twenty *antoniniani* contained the same amount of silver as an old silver *denarius*.²⁴⁵ Rome's “thousand-year epoch of silver money” came to a crashing halt, and was eventually replaced by a gold system.²⁴⁶

The dissolution of the Roman currency regime caused the private Roman economy's infrastructure to crumble further. “An accelerating spiral of disorder engulfed the empire.”²⁴⁷ While the Roman economy had managed to restabilize and largely recover from the shocks it experienced in the aftermath of the Antonine Plague, it had attained a precarious balance. The exogenous jolt of the Cyprian Plague to an already stressed economy prompted the “unparalleled

²⁴² Ibid.

²⁴³ Harper, *Pandemics, Climate Change, and The Fall of Rome*.

²⁴⁴ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 250-251.

²⁴⁵ Watson, *Aurelian and the Third Century*, 129-130.

²⁴⁶ Harper, *The Fate of Rome*, 146.

²⁴⁷ Ibid.

demise of a currency system”²⁴⁸ that had previously managed to survive debasement, social unrest, and dynastic strife.

Impact on Military

The vast frontiers of the Roman Empire had faced threats from every direction in the century following the Antonine Plague. Until the Cyprian Plague, however, Roman emperors had—for the most part—been successful in their campaigns to protect the borders of the empire from invading troops. The preservation of the integrity and size of the Roman Empire was heavily dependent upon the state’s ability to maintain its defensive forces along its external frontiers—the Rhine-Danube frontier and the Syrian-Anatolian frontier being of particular concern.²⁴⁹ With Rome’s military forces debilitated by the Cyprian Plague, however, in the 250s CE the state came to face enemies on nearly every frontier and eventually lost hegemony along a number of fronts.

Threats to the Roman Empire had already begun to escalate along the Danube during the reign of Philip the Arab. However, he managed to repel the attacks of various tribes along the Lower Danube.²⁵⁰ Under Decius, the situation at the border exploded, and “the empire was faced with cascading violence that it could not contain.”²⁵¹ In 250, the Carpi and Goths crossed the Danube and attacked. Decius was murdered a year later in battle against the Goths at Abrittus.²⁵² It was around this time that the plague had begun to ravage the empire, and the losses suffered by

²⁴⁸ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 252.

²⁴⁹ Ibid, 254.

²⁵⁰ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 255.

²⁵¹ Ibid.

²⁵² Ibid.

the Roman military from the plague, as well as the political instability throughout the empire, made Rome ripe for attack in the eyes of its enemies.

In the east, Persian king Shapur I advanced to the Euphrates in 252 CE, his attack directly motivated by his knowledge that the Roman army had been depleted by the pestilence.²⁵³ Shapur annexed Armenia, invaded Syria, and captured the city of Antioch. Gallus, preoccupied by his dealings with the plague in Rome, failed “to take any serious action at all”—he did not even attempt to bolster Rome’s defenses in the east to stop Shapur.²⁵⁴ One Roman frontier buckled after another. In the years 250-252, the Danubian front collapsed, and the Romans lost control of the entire Danube line.²⁵⁵ And in 252, after Shapur’s attack and plunder of interior Asia Minor, the Euphrates front fell too.²⁵⁶ The Goths rampaged from the Black Sea to the Aegean. In the mid-250s, the Rhine frontier system disintegrated.²⁵⁷ As Rome’s defensive network gradually imploded, “the smell of blood seemed to draw attacks like never before.”²⁵⁸

When Valerian and his son Gallienus became co-emperors in 253 CE, they divided their efforts geographically in an attempt to quell the threats they faced along the borders: Valerian was responsible for commanding Roman troops in the east, while Gallienus handled the west.²⁵⁹ Gallienus valiantly fought against the Germanic tribes along the Gaul and Rhine frontier, and successfully secured the stability of the region through his negotiation of an alliance with the Marcomannic king.²⁶⁰ In the east, Valerian rescued Antioch from Persian control, but he was

²⁵³ Moore, “Trebonianus Gallus (251-253 A.D.) and Gaius Vibius Volusianus (251-253 A.D.).”

²⁵⁴ Ibid.

²⁵⁵ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 254.

²⁵⁶ Harper, *The Fate of Rome*, 146.

²⁵⁷ Ibid.

²⁵⁸ Ibid.

²⁵⁹ Weigel, “Valerian (A.D. 253-260) and Gallienus (A.D. 253-268).”

²⁶⁰ Ibid.

quickly taken captive by Shapur, leaving Gallienus as the sole ruler of the Roman Empire.²⁶¹ For the remainder of his reign, Gallienus faced a number of challenges to his authority—not only from the recurring invasions and revolts from Rome’s enemies, but also by a number of the military commanders he had appointed, who used their authority “to create another threat.”²⁶² Gallienus was assassinated in 268 in a coup orchestrated by Claudius II.

Although he had not come to power in an ethical manner, during his two-year rule, Claudius II managed to re-secure certain territories of the Roman Empire. He defeated the Alemanni after they had invaded Italy, and stopped a massive Goth invasion (of >250,000 men), winning the Gothic War for the time being.²⁶³ Claudius II’s reign was cut short by his death from the Cyprian Plague in 270 when it demolished his troops at Sirmium.²⁶⁴

It is ironic that the very dispersal of Roman soldiers across the empire in the mid-250th century to protect Rome’s borders, and their frequent movements throughout the empire, was a factor that not only aided the spread of the Cyprian Plague across the Roman Empire, but also exacerbated the effects of the Cyprian Plague as it weakened Rome and its military forces. The instability of the West between 251 and 269 occurred on a level which Rome had never before seen. Unfortified towns and villages along the borders of the empire, whose territory had previously been taken for granted, were “razed by a profusion of invaders from the Lower Rhine to the Black Sea.”²⁶⁵ Aurelian, who ruled as emperor from 270 to 275, erected sturdy walls (13 feet thick, and 24 feet high²⁶⁶) around Rome—a city previously regarded as impenetrable—to protect the city from possible attack. Ancient Roman historians have described the pandemic as

²⁶¹ Ibid.

²⁶² Ibid.

²⁶³ Weigel, “Claudius II Gothicus (268-270).”

²⁶⁴ Ibid.

²⁶⁵ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 256.

²⁶⁶ The Editors of Encyclopaedia Britannica, “Aurelian Wall.”

a trigger for the invasions Rome faced along many corners of the empire, as well as a reason for Rome's struggle to contain the threat.²⁶⁷ According to Herodian, wars against the barbarians were “no longer struggles to secure the frontiers but to save the very existence of the Empire.”²⁶⁸ The dangers the empire faced in the wake of the Cyprian Plague came from all directions—Italy, Greece, Spain, Mesopotamia, and Syria—and posed serious threats to the stability of the empire, generating permanent changes in Rome's military strategy and warfare.

Social and Political Changes

In the fifty years following Philip the Arab's assassination, Rome was ruled by more than twenty emperors.²⁶⁹ The political climate of the empire was remarkably unstable: many third-century authors were astonished by the “quick change of emperors, raised to power by violence and killed shortly afterwards.”²⁷⁰ Roman politics came to be defined by high turnover rates, as leaders typically either died from plague or assassination by their political opponents. Alföldy laments that “Justice, fairness, and security were, on the whole, lost.”²⁷¹ Ancient Romans such as Cassius Dio and Herodian lamented the rise of a new type of emperor in Rome, who ruled in an increasingly authoritarian and militaristic manner, and how “rulers became ‘bad’ or even worse” from the traditional viewpoint.²⁷² Claudius II's rule from 268-270 CE marked the beginning of an era often referred to as the “age of the barracks emperors.” This age was marked by power struggles, as each emperor came into power because of their military prowess and

²⁶⁷ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 256.

²⁶⁸ Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 102-103.

²⁶⁹ Yeomans, “Pandemics, Climate and the Fall of the Roman Empire.”

²⁷⁰ Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 99.

²⁷¹ Ibid.

²⁷² Ibid, 98-99.

popularity with their troops, only to be “discarded or assassinated when favor was ultimately lost.”²⁷³

The relations of the Roman military, state, and society experienced systemic re-organization in the years following the Cyprian Plague. The army became, arguably, the most important factor in politics. Social mobility increased, and men of lower social backgrounds became eligible for senatorial posts.²⁷⁴ Alföldy goes so far to assert that Rome’s “old social order was believed to be largely lost.”²⁷⁵ The moneyed aristocracy who had previously controlled the Roman Senate lost a considerable amount of their political power. During his reign, Gallienus repealed the high position of legionary commander (*legatus legionis*) and prohibited senators from pursuing military careers.²⁷⁶ Professional soldiers replaced senators in their coveted positions of high military commands, breaking with an ancient sociopolitical tradition that had remained intact since the late Roman Republic. Emperors and wealthy military commanders paid their troops handsomely in gold to assure loyalty to their commander over the Roman state. The majority of soldiers who replaced the “moneyed Mediterranean aristocracy”²⁷⁷ hailed from the Danube—a small northern corner of the Roman Empire.

While Gallienus may not have foreseen the full implications of his decision, the consequences of his reform were explosive, as they worked towards the ultimate militarization and professionalization of the Roman state bureaucracy.²⁷⁸ Rome became decreasingly centralized after Philip the Arab’s reign. Although the city of Rome remained respected as the

²⁷³ Kearns, “A Plague in a Crisis: Differential Diagnosis of the Cyprian Plague and Its Effects on the Roman Empire in the Third Century CE,” 10.

²⁷⁴ Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 100.

²⁷⁵ *Ibid.*, 101.

²⁷⁶ Harper, *The Fate of Rome*, 149.

²⁷⁷ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 250.

²⁷⁸ *Ibid.*, 253.

“symbolic center” of the Roman Empire,²⁷⁹ the powerful Danubian military officers and emperors who came into power spent most of their time outside of the city, establishing palaces and garrison towns along the frontiers where they were fighting.

The Role of Climate

Based on modern scientific research, it has recently been suggested that the changing climate the Romans experienced in the mid-third century both exacerbated the spread of the Cyprian Plague and created its own host of social and political issues throughout the empire. Beginning in the mid-second century, the warm and fertile climate conditions of the Roman Climate Optimum (RCO) slowly came to an end, bringing about a period known as the Late Roman Transition (LRT).²⁸⁰ The weather throughout the Roman empire became cooler, drier, and more variable.²⁸¹ Aridity intensified, and less rainfall resulted in droughts and infrequent flooding of the Nile delta.²⁸²

Droughts and poor floods parched North Africa from 244 to 248, which quickly proved to be problematic. Egypt had always been “miraculously fertile” and the “breadbasket of Rome.”²⁸³ Romans had come to depend on levels of agricultural production that relied upon the unusually good weather conditions during the RCO. And, at a time when the empire needed it the most, the Nile “abandoned them spectacularly.”²⁸⁴ Pinched for grain, the state had no choice but to purchase grain from private stores at a high cost. In 248, the Bishop of Alexandria wrote that the Nile riverbed was “as parched as the desert.”²⁸⁵ The agricultural crisis, drought, and

²⁷⁹ Harper, *The Fate of Rome*, 152.

²⁸⁰ Ibid, 131.

²⁸¹ Yeomans, “Pandemics, Climate and the Fall of the Roman Empire.”

²⁸² Ibid.

²⁸³ Harper, *The Fate of Rome*, 132.

²⁸⁴ Ibid, 134.

²⁸⁵ Ibid.

famine that the LRT spurred in Egypt caused people to migrate across the empire. In the words of Harper, these issues amounted “to the severest environmental crisis detectable at any point in the seven centuries of Roman Egypt.”²⁸⁶ It is possible that the changing global climate may even have triggered ecological changes that caused the Plague of Cyprian to erupt in the first place.²⁸⁷

Conclusion

While the Plague of Cyprian certainly contributed to what is often referred to as the “third-century crisis” of the Roman Empire, it is difficult to argue that the plague was the sole catalyst of the crisis. According to Harper, the profound political and military changes that occurred in the third century do “not necessarily require a major health crisis to explain why it happened.”²⁸⁸ While the plague’s correlation with profound societal change should be noted, given the lack of evidence that has survived from this time period, only so much can be said about “the possibility of causal links.”²⁸⁹ As Harper writes, the collapse of Rome’s frontiers, dynasties, and economy “was as much the *consequence* as the cause of the crisis.”²⁹⁰ With the collapse of the imperial machine and facing defeat on multiple frontiers in AD 260, Rome’s hope of survival was abysmal. The concentration of a series of specific and sudden blows pushed the system of the empire “beyond the threshold of resilience.”²⁹¹ The ancient Romans themselves were aware that they were living in a period of crisis, and that these changes “meant present collapse or future uncertainty for the empire.”²⁹² Barbarian invasions, economic decline, civil

²⁸⁶ Ibid.

²⁸⁷ Ibid, 144.

²⁸⁸ Harper, “Pandemics and Passages to Late Antiquity: Rethinking the Plague of c.249–270 Described by Cyprian,” 254.

²⁸⁹ Ibid.

²⁹⁰ Harper, *The Fate of Rome*, 121.

²⁹¹ Ibid.

²⁹² Alföldy, “The Crisis of the Third Century as Seen by Contemporaries,” 98.

wars, climate change, and the pestilence all played a role in what some scholars refer to as the “first fall of Rome”²⁹³ at the end of the third century CE.

While the Roman Empire collapsed under the pressures—both internal and external—that it faced in the third century CE, Rome was not going to give up without a fight. Much to the amazement of modern scholars, Rome somehow (“almost surprising[ly]”²⁹⁴) managed to reemerge from the ashes and rebuild itself in the fourth century. Diocletian, who ruled Rome as emperor from AD 284 to 305, put an end to the disastrous phase of Roman history regarded as the “Military Anarchy.”²⁹⁵ In an attempt to suppress civil war and political violence, Diocletian established a tetrarchy, in which four politicians collectively ruled and carried out the duties of emperor. The political and economic reforms of Diocletian, and his successor Constantine, “set the scene for the Roman Empire’s comeback act.”²⁹⁶ The Mediterranean climate stabilized for the time being, and there were no major volcanic eruptions until the early fifth century. Under Constantine’s rule, in 330, the capital of the Roman Empire was transferred from Rome to Byzantium, which was soon named Constantinople in Constantine’s honor. In less than a century, Constantinople’s population multiplied ten-fold, from 30,000 to 300,000 residents.²⁹⁷ In the two centuries following the Cyprian Plague, under prudent leadership, propitious climate conditions, and reprieve from savage microbes, the Roman Empire was revitalized. For the time being, at least.

²⁹³ Harper, *Pandemics, Climate Change, and The Fall of Rome*.

²⁹⁴ Harper, *The Fate of Rome*, 129.

²⁹⁵ Mathisen, “Diocletian (284-305 A.D.)”

²⁹⁶ Harper, *The Fate of Rome*, 177.

²⁹⁷ *Ibid*, 185.

THE JUSTINIANIC PLAGUE (541 CE)

Background

In 470 CE, Germanic tribes sacked the city of Rome, overtaking the western portion of the Roman Empire. By the end of the fifth century, the city of Rome was sparsely populated; a shadow of its former glory. While Italy and much of the western Roman Empire had effectively become “frontier province[s],”²⁹⁸ the eastern Roman Empire had—at least for the time being—managed to ward off external threats to its territories. In the east, Constantinople, also referred to as ancient Byzantium, soon became the new capital and center of power of the Roman Empire. Although the eastern Mediterranean had become the empire’s new “heartland,”²⁹⁹ it is worth clarifying that the empire’s inhabitants continued to refer to themselves as Romans; “Byzantine” is merely “an intervention of early modern scholarship.”³⁰⁰ The eastern portion of the empire continued to tackle threats to its borders in every direction, the most formidable of which were the Persians and the Huns. In 502, confrontation between the Roman Empire and Persia erupted into war. The Huns, steppe-dwellers of central Asia and nomadic horsemen who also posed a threat to the security of the empire, were paid an annual indemnity in exchange for their peace.³⁰¹

Justinian, who ruled as emperor from 527 to 565, made peace with Persia and sought to reconquer the western territories that had formerly been part of the Roman Empire. The first half of Justinian’s reign “was a flurry of action virtually unparalleled in Roman history.”³⁰² In addition to Justinian’s armies successfully reclaiming large swaths of western territories,

²⁹⁸ Lee, “Justinian and the End of Antiquity,” 298.

²⁹⁹ Ibid, 299.

³⁰⁰ Ibid.

³⁰¹ Ibid, 296.

³⁰² Harper, *The Fate of Rome*, 203.

Justinian reformed the bureaucracy of the empire, working tirelessly to make the legal and political systems of the empire more equitable and efficient than they were previously.³⁰³

Justinian completely revised and codified all Roman law, an immense undertaking which had not previously been attempted. He embarked on an ambitious building spree, commissioning the construction of more than thirty churches around Constantinople (including the resplendent Hagia Sophia), as well as the construction of bridges, and several underground cisterns to ensure a stable water supply for the people of Constantinople. With the population of Constantinople approaching 500,000 individuals, “food security was nothing to take for granted.”³⁰⁴ As emperor, Justinian was obligated to feed his people, and he frequently traveled across the Roman world to inspect the state’s granaries. For the first half of Justinian’s reign, ships traveling from Alexandria carried more than 300,000 liters of wheat to Constantinople per year.³⁰⁵ From Constantinople, grain was distributed by land and sea to distant areas across the Roman Empire. Granaries were omnipresent in the late Roman world, as it was believed important to stockpile large quantities of grain—as a mechanism to both feed those unable to afford it, as well as to provide a buffer in years where crops failed. Rome’s network of granaries was a failsafe in time of famine, as grain could be dispersed to feed individuals anywhere in the empire.

However, grain was not the only thing being transported across the Mediterranean seas on ships—or carted along roads—bound for distant areas of the Empire. Somewhere along the way, something else had managed to hitch a ride: the black rat (*Rattus rattus*). This comes as little surprise given the omnipresence of rats in Constantinople and across the Roman Empire. Solid archaeological evidence for the prevalence of rats in the ancient Roman world has been

³⁰³ Atkinson, “Justinian and the Tribulations of Transformation,” 15.

³⁰⁴ Harper, *The Fate of Rome*, 200.

³⁰⁵ Ibid.

unearthed in recent years, in the form of gnawing marks on bones, rat remains in the pellets of owls and other predators, and rat remains “preserved in situ.”³⁰⁶ Constantinople itself has been coined a “rat paradise” by modern scholars because of its ample granaries and opportunities for rats to travel and reproduce.³⁰⁷ Left with an unlimited food supply, “rats proliferate famously.”³⁰⁸ As if the rats’ infiltration of the empire’s grain supply alone wasn’t sufficiently problematic (they consumed or damaged up to 15% of the grain supply they made their way into³⁰⁹), the rats were carrying a newly-mutated bacterium in their blood—*Yersinia pestis*. Before succumbing to disease themselves, black rats are able to store high concentrations of the *Y. pestis* bacterium in their bloodstreams, which, with the help of fleas, is quickly transmitted to adjacent human populations. The fur of black rats is home to small fleas that drink their blood, the most common of which in the sixth century was the oriental rat flea (*Xenopsylla cheopis*). Fleas become infected after ingesting the blood of infected rats, and when fleas bite humans or other animals, they spread the infection—Bubonic Plague—to them.

Origin, Timeline, and Geographical Reach

According to Procopius of Caesarea, the Bubonic plague epidemic, which has often been referred to as the Justinianic Plague, began in Pelusium, a Mediterranean port located on the easternmost branch of the Nile delta.³¹⁰ Pelusium and Alexandria were the two major Egyptian ports on the Mediterranean, and both “communicated with the Nile through a network of canals.”³¹¹ The fact that the plague arrived in Pelusium in 541, prior to striking Alexandria,

³⁰⁶ McCormick, “Rats, Communications, and Plague: Toward an Ecological History,” 5-6.

³⁰⁷ Ibid, 16.

³⁰⁸ Ibid.

³⁰⁹ Ibid, 3.

³¹⁰ Sussman, “Scientists Doing History: Central Africa and the Origins of the First Plague Pandemic,” 328.

³¹¹ Tsiamis, Poulakou-Rebelakou, and Androustos, “The Role of the Egyptian Sea and Land Routes in the Justinian Plague: The Case of Pelusium,” 334.

suggests that it originated from the Red Sea, which is directly south of Pelusium. Individuals contemporary with the outbreak of Bubonic plague, such as John of Ephesus and Evagrius Scholasticus, also traced the Plague of Justinian to the Red Sea.³¹² After the plague reached Pelusium, both the ancients and modern scholars agree that it diffused throughout the Mediterranean in both eastward (via Palestine and Levant) and westward (along the north African coast) directions, traveling along various trade routes.³¹³ However, where the plague originated from prior to its arrival at the Red Sea continues to be a hot topic of debate among scholars. Modern scientific findings and DNA analyses may go a long way in settling this debate.

Until recently, most historians believed that the Justinianic Plague originated from the Great Lakes region of Central Africa. Peter Sarris, in 2002, concluded that “an African origin to the bubonic plague” was the most plausible “both chronologically and geopolitically.”³¹⁴ More than a decade later, in 2013, A. D. Lee wrote that the 541 outbreak of Bubonic plague was likely to have come from Central Africa.³¹⁵ However, while it is true that *Yersinia pestis* was endemic to the Great Lakes region of Central Africa prior to the sixth century, the specific strain of *Y. pestis* currently present in the Great Lakes region “is not the descendant of the germ that caused the first plague pandemic beginning in 542 CE,” according to George W. Sussman’s research published in 2015.³¹⁶ After analyzing ancient DNA, Sussman concluded that the *Y. pestis* strain responsible for the Justinianic Plague originated in Asia rather than Africa.³¹⁷ Thus, the specific strain of *Y. pestis* that caused the Plague of Justinian must have come to the Red Sea from the

³¹² Sussman, “Scientists Doing History: Central Africa and the Origins of the First Plague Pandemic,” 331.

³¹³ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 274.

³¹⁴ Sarris, “Bubonic Plague in Byzantium: The Evidence of Non-Literary Sources,” 123.

³¹⁵ Lee, “Justinian and the End of Antiquity,” 289.

³¹⁶ Sussman, “Scientists Doing History: Central Africa and the Origins of the First Plague Pandemic,” 346.

³¹⁷ Ibid.

East, as China was the birthplace of the pathogen. In support of an Asian entry point, Tsiamis et al. write that “The suggestion that the port of Clysmia [which is located due south of Pelusium], and no other port of the Red Sea, could have acted as the gateway of the plague is supported by a series of historical events.”³¹⁸ Harper, too, argued that the plague originated from the uplands of western China, based on DNA evidence.³¹⁹ Some scientists have yet to accept these new findings: according to Mischa Meier in 2016, the debate surrounding whether the plague originated from Africa or China “remains open,” and at present “there is no absolute certainty to be had.”³²⁰

After arriving in Pelusium in 540, the Justinianic Plague emerged in Egypt in 541, diffusing across trade routes and eventually reaching Constantinople, Jerusalem, Antioch, and Syria in 542. The plague entered Rome in late 543. Coastal cities were hit “first and hardest,”³²¹ as the *Y. pestis*-infected rats first traveled by sea on ships sailing across the Mediterranean; soon they disembarked and were carted along the roads of the empire alongside grain. As the plague spread across the Mediterranean world from 541-544, it eventually became endemic to the region, consequently flaring up in various waves in different areas for the next two centuries.³²² The first wave of Bubonic plague in Constantinople lasted until 544, whereupon Justinian issued Novel 122, “wherein he declared the plague’s ravage as terminated.”³²³ The subsequent waves occurred in the years: 558, 573, 590, 597, 618.³²⁴ After the 618 epidemic, sources describing

³¹⁸ Tsiamis, Poulakou-Rebelakou, and Androutsos, “The Role of the Egyptian Sea and Land Routes in the Justinian Plague: The Case of Pelusium,” 336.

³¹⁹ Harper, *The Fate of Rome*, 214.

³²⁰ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 275.

³²¹ Hays, “Historians and Epidemics: Simple Questions, Complex Answers,” 39.

³²² Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 274.

³²³ Stathakopoulos, “Crime and Punishment: The Plague in the Byzantine Empire, 541-749,” 102.

³²⁴ *Ibid*, 103.

the outbreak of Bubonic plague become increasingly sparse; few records have survived in an interpretable form.³²⁵ Between 540 and 750, the Justinianic pandemic “recurred in some 18 waves,”³²⁶ striking the capital at Constantinople every fifteen years on average for the first century of its outbreak.³²⁷ After 620, the plague only struck the capital every 64 years on average, which suggests the “waning dominance of Constantinople in the eastern Mediterranean,”³²⁸ as the city came to play an increasingly peripheral role in the region, and as a result, later outbreaks of Bubonic plague rarely made their way to the capital.

While the Mediterranean stood as the epicenter for outbreaks of Justinianic Plague, ancient sources evince that the plague traveled all over the known world: to Spain, Gaul, the French-German border, Britain, and Ireland. As stated by Michael W. Dols, “the pandemic engulfed the lands and peoples of the known world.”³²⁹ It struck large urban areas and distant countrysides alike. Studies of various European countrysides from the sixth to eighth centuries indicate that “plague was as active there as in the cities.”³³⁰ As peasants comprised the majority of the Roman army, many brought the plague back home with them from war. Moreover, heavy mortalities across the countryside may explain the severe manpower shortages that the army faced in the late sixth and seventh centuries.

The plague struck Spain first in 542 and again in 584. It arrived in the British Isles in 544 or 545, soon appearing in Ireland. There are only two recorded instances of the plague having traveled to mainland England, both of which were described by the contemporary British author Bede: 664-666 and 684.³³¹ Newly unearthed archaeological evidence suggests that the

³²⁵ Ibid.

³²⁶ McCormick, “Tracking Mass Death during the Fall of Rome’s Empire (I),” 343-344.

³²⁷ Harper, *The Fate of Rome*, 238.

³²⁸ Ibid.

³²⁹ Dols, “Plague in Early Islamic History,” 373.

³³⁰ Little, *Plague and the End of Antiquity: The Pandemic of 541-750*, 24.

³³¹ Maddicott, “Plague in Seventh-Century England,” 171.

Justinianic Plague made its way to areas beyond what has been observed in written records, i.e., Bavaria. Less than two decades ago, researchers genotyped material from putative Justinianic Plague victims buried in a 6th century graveyard in Aschheim, which is located in Bavaria, Germany. More than four hundred individuals were buried in the cemetery.³³² Analyzing the dental pulp DNA of several skeletons buried in the cemetery, researchers found that some had been infected with *Y. pestis* bacteria, a discovery which confirmed *Y. pestis*' role as the causative agent of the Justinianic Plague.³³³ Moreover, the fact that *Y. pestis* journeyed through transalpine Europe—to a region for which there is no written documentation indicating the presence of Bubonic plague—suggests that the Bubonic plague may have stretched far beyond the geographical boundaries that have previously been established for the disease purely on the basis of written evidence from the time.

The Role of Climate

While the Mediterranean climate had been relatively tranquil and stable in the years leading up to Justinian's rule, in 526 climatic conditions began to degenerate rapidly. In 526, an earthquake in Antioch claimed the lives of more than a quarter of a million people. A decade later, in 536, the sky went dark for more than a year: John of Ephesus wrote that "the sun became dark and its darkness lasted for one and a half years ... the fruits did not ripen, and the wine tasted like sour grapes."³³⁴ Procopius provided a similar account, writing that "the sun gave forth its light without brightness, like the moon, during this whole year."³³⁵ Witnesses as

³³² Harbeck et al., "Yersinia Pestis DNA from Skeletal Remains from the 6(Th) Century AD Reveals Insights into Justinianic Plague," 2.

³³³ Ibid, 4.

³³⁴ Arjava, "The Mystery Cloud of 536 CE in the Mediterranean Sources," 78-79.

³³⁵ Ibid, 79.

distant as eastern China chronicle the same observations recorded by the Roman eyewitnesses.³³⁶ While some debate has persisted as to whether the dust veil that darkened the skies of the northern hemisphere was caused by volcanic eruptions or the impact of a comet, the detrimental environmental impacts of the cloud on Roman society are clear.

According to scholars like Antii Arjava, “the dust veil has been declared the worst climatic disaster in recorded times.”³³⁷ Temperatures fell between 1.5 to 2.5 degrees Celsius, making the decade from 536 to 545 the coldest on record in the past two millennia.³³⁸ Crops failed and people starved. Both people and animals began to migrate in search of food, venturing beyond their typical radii of travel. Animals began to move in unusual migratory patterns.³³⁹ It is possible that the behavioral changes in animals that were caused by such unexpected and unprecedented climate change may also have been responsible for bringing Bubonic plague to the Mediterranean world in the first place. Changing temperatures and precipitation may have prompted rodents carrying *Y. pestis* to abandon their habitats, possibly triggering “an epizootic that reached the rodents of the seaborne trade routes heading west.”³⁴⁰

The famine triggered by the lack of crops that would grow under worsening climate conditions may also have contributed to the spread of the plague; as grain had to be transported from granaries across the empire to remote villages, the infected rats who had climbed aboard arrived with the grain, thereby spreading the plague even further. While these changes to the Mediterranean climate, caused by unusual geological—and perhaps meteorological—activity, stretched resources thin and wrought havoc across the agricultural and zoological landscape, in

³³⁶ Yeomans, “Pandemics, Climate and the Fall of the Roman Empire.”

³³⁷ Arjava, “The Mystery Cloud of 536 CE in the Mediterranean Sources,” 74.

³³⁸ Gibbons, “Why 536 Was ‘the Worst Year to Be Alive.’”

³³⁹ Stathakopoulos, “Crime and Punishment: The Plague in the Byzantine Empire, 541-749,” 100.

³⁴⁰ Harper, *The Fate of Rome*, 219.

and of themselves they did not elicit social collapse or state failure. Instead, they piled stress onto an economy whose finances and resources had already been strained by years of intense warfare on multiple fronts.

Symptoms, Ancient Medicine, and Modern Medical Assessment

The symptomologies of Justinianic Plague described by various contemporary authors are markedly similar, matching classic symptoms of Bubonic plague: fever, and buboes in areas near the lymph nodes. Unlike with respect to the three earlier epidemics described in this paper, there is little debate regarding the modern diagnosis of the Justinianic Plague. Modern scholars overwhelmingly concur that Bubonic plague is the culprit.³⁴¹ The plague reared its head in three different forms: bubonic, pneumonic, and septic. Historians and scientists concur that *Y. pestis* was the bacterium responsible for the plague, and archaeological evidence from the time supports this conclusion. Thus, according to Robert Sallares, the main point of uncertainty regarding the symptoms of the Justinianic Plague is “the relative importance of the bubonic, pneumonic, and septicemic forms of the disease.”³⁴²

The bubonic form of the plague occurred when an individual was bit by a flea infected with the *Y. pestis* bacterium. The individual’s lymphatic system, in an attempt to purge the body of the bacterium, drained it into nearby lymph nodes, where the bacterium then dodged the body’s immune response and replicated rapidly.³⁴³ Individuals bitten by an infected flea became symptomatic within three to five days, quickly developing a fever, chills, and a headache.³⁴⁴ About a day later, buboes began to form on their skin, typically near individuals’ armpits, ears,

³⁴¹ Sallares, “Ecology, Evolution, and Epidemiology of Plague,” 240.

³⁴² Ibid.

³⁴³ Harper, *The Fate of Rome*, 222.

³⁴⁴ Ibid.

thighs, or groin. Some had bloody and swollen eyes, a sore throat, or diarrhea. Death was imminent after the pustules on an individual's skin turned black.

The *Y. pestis* bacterium could also be transmitted via aerosol droplets expelled by infected individuals. The incubation period of pneumonic plague was shorter than bubonic, lasting only 2-3 days. Victims became sick with bronchitis and pneumonia, experiencing fever, chest pain, and a bloody cough. Pneumonic plague was even more fatal than plague in its bubonic form—the former having a case fatality rate approaching 100%, while the latter had a fatality rate of around 80 percent.³⁴⁵

In other cases, the *Y. pestis* bacterium skipped the lymphatic route of the infected altogether, and instead traveled directly into the bloodstream. Individuals infected with septicemic plague died of “overwhelming sepsis” even before signs of the disease presented themselves externally, often collapsing dead within hours of initial infection.³⁴⁶ The few individuals who managed to survive the Justinianic Plague were left with long-lasting and debilitating side effects, ranging from gangrene to brain damage, which could result in a “violent delirium.”³⁴⁷ And, having survived one round of the plague did not even guarantee immunity from future infection: for most, the plague bacterium conferred “only partial and temporary immunity.”³⁴⁸

While there exists no record of a Galen-equivalent doctor during the Justinianic Plague, there were a few notable changes in medical care that occurred in response to the outbreak of the Justinianic Plague. Hospitals continued to be constructed and existing ones were expanded.³⁴⁹

³⁴⁵ Ibid.

³⁴⁶ Ibid.

³⁴⁷ Allen, “The ‘Justinianic’ Plague,” 7.

³⁴⁸ Harper, *The Fate of Rome*, 235.

³⁴⁹ Atkinson, “The Plague of 542: Not the Birth of the Clinic,” 11.

Physicians conducted autopsies of the bodies of those who had died from the plague and lanced the bubonic swellings of the corpses. They discovered that something strange had grown inside (likely the remains of swollen, hemorrhaged lymph nodes), yet their medical understanding was so slim that these investigations did little to advance their understanding of the plague or its spread.³⁵⁰ According to one historian contemporary with the plague, doctors “were at a complete loss concerning the circumstances of the pest.”³⁵¹ Thus, while the plague invited a clinical examination, which many doctors engaged in, such examination unfortunately “yielded little benefit to scientific medicine.”³⁵²

Analysis of Contemporary Accounts

A wide range of sources—written by authors contemporary with the Plague of Justinian— from various geographical, social, and cultural perspectives have survived. The three most detailed contemporary descriptions are those of Procopius of Caesarea, John of Ephesus, and Evagrius Scholasticus. Procopius reported the symptoms of the plague methodically and in a “true classicising style” that echoes Thucydides’ 431 BCE account of the Plague of Athens.³⁵³ John of Ephesus, a Syrian monk who traveled through Palestine, Syria, Mesopotamia, and Asia Minor during the plague, provided an emotional account and religious interpretation of the disease’s outbreak.³⁵⁴ Finally Evagrius Scholasticus, a church historian and secretary to Patriarch Gregory of Antioch, offered a personal account of the suffering caused by

³⁵⁰ Atkinson, “The Plague of 542: Not the Birth of the Clinic,” 18.

³⁵¹ Atkinson, “Justinian and the Tribulations of Transformation,” 26.

³⁵² *Ibid.*, 18.

³⁵³ Lee, “Justinian and the End of Antiquity,” 290.

³⁵⁴ Allen, “The ‘Justinianic’ Plague,” 6.

the disease, as most of his household fell ill and eventually succumbed to the Justinianic Plague.³⁵⁵

In the absence of germ theory, the arrival and cause of the Justinianic Plague baffled contemporary authors. Many turned to religion in search of an explanation: Procopius wrote that “it is impossible to conceive in thought any explanation, except indeed to refer it to God.”³⁵⁶ John of Ephesus viewed the plague as divine chastisement, writing that God’s anger had fallen upon cities like a “wine-press and pitilessly trampled and squeezed all their inhabitants within them like fine grapes.”³⁵⁷ Yet, as the plague attacked the pious and impious alike, religion became a dissatisfying explanation. The majority of Evagrius’ household having died from the plague proved “enough to lead even a churchman into doubt,” as he openly questioned whether or not God was just.³⁵⁸ Procopius, writing around 550 CE, seems to have considered a more scientific analysis as well, listing “the variables that could be excluded as causal factors: geography, ethnicity, season, gender, age, habitat, lifestyle, temperament, activities.”³⁵⁹

Mortality Estimates

Across the Mediterranean world, and in Constantinople in particular, people dropped dead from disease almost instantaneously. The vast scale of deaths quickly proved previously accepted corpse disposal practices to be impractical and inadequate. Dead bodies filled the streets, piling up “without enough survivors left to bury them.”³⁶⁰ Corpses were left on the

³⁵⁵ Ibid.

³⁵⁶ Cillers, “Greek, Roman and Christian Views on the Causes of Infectious Epidemic Diseases,” 93.

³⁵⁷ Harper, *The Fate of Rome*, 221.

³⁵⁸ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 282.

³⁵⁹ Atkinson, “The Plague of 542: Not the Birth of the Clinic,” 2.

³⁶⁰ Morony, “‘For Whom Does the Writer Write?’ The First Bubonic Plague Pandemic According to Syriac Sources,” 73.

streets for days before they were finally collected for burial.³⁶¹ The putrid stench of death wafted throughout the city. With mortality rates at an unprecedented high, traditional burial practices were soon abandoned. According to John of Ephesus, “no one ventured outside without an identity tag,”³⁶² as individuals feared they would be left unburied if they died while out and about. The wealthy took matters into their own hands, violating the tombs of individuals who had been buried prior to the outbreak of plague in order to bury their own dead in their place.³⁶³ Burial customs, such as the simultaneous burial of multiple bodies in larger graves, which had been “very hard to document” prior to the sixth century, became commonplace.³⁶⁴ As corpses continued to be heaped into stacks on the streets or tossed into the waterways, Justinian was forced to intervene, appointing a man named Theodore as imperial official to organize the collection and disposal of the dead. Justinian also arranged for mass burial pits (each could accommodate around 70,000 bodies) to be dug at Sycae, a suburb of Constantinople.³⁶⁵ Mortalities were so high that, according to Procopius, gravediggers removed the roofs of the towers that comprised the wall surrounding the Constantinopolitan suburb of Galata in 542, and stacked corpses into each tower before reattaching the roofs.³⁶⁶ We are told that the stench was insufferable.

The lack of demographical data from the sixth-century Roman Empire has made it difficult to estimate the overall mortality of the 542 epidemic and its subsequent—more poorly attested—outbreaks. Eyewitnesses emphasized heavy death tolls: John of Ephesus wrote that, at the height of the plague in Constantinople, more than 16,000 individuals were dying per day, and

³⁶¹ Ibid.

³⁶² Allen, “The ‘Justinianic’ Plague,” 12.

³⁶³ McCormick, “Tracking Mass Death during the Fall of Rome’s Empire (I),” 338.

³⁶⁴ Kulikowski, “Plague in Spanish Late Antiquity,” 159.

³⁶⁵ Allen, “The ‘Justinianic’ Plague,” 12.

³⁶⁶ McCormick, “Tracking Mass Death during the Fall of Rome’s Empire (I),” 338-339.

that the men standing outside the gates of Constantinople stopped counting the number of corpses taken for burial after the tally reached 230,000.³⁶⁷ Procopius wrote that the mortality of the Justinianic Plague exceeded 10,000 per day, proclaiming that “the whole human race came near to being annihilated.”³⁶⁸ Modern scholars caution against the urge to take these ancient estimates at face value; Mischa Meier argues that “the intention of the authors probably was not to provide a precise quantitative record in the modern sense but rather primarily to convey the quality of the event, the monstrousness of its dimensions.”³⁶⁹

Thus, while an exact measure of the death toll has continued to elude modern scholars, most agree that a reasonable estimate for the mortality rate of the Justinianic Plague lies somewhere between 30 and 60 percent. Josiah C. Russell has hypothesized that the Justinianic Plague caused a 40-50 percent drop in the population of the eastern Roman Empire between the years 541 and 600.³⁷⁰ According to John of Ephesus, mortality in Constantinople was higher than in any other city or countryside of the empire.³⁷¹ Given Constantinople’s status as a center for commerce and culture—as the largest and most cosmopolitan city of the Roman Empire—scholars tend to agree with John’s assessment. With an estimated population of around half a million individuals in 540, an assumed 50-60 percent mortality rate in Constantinople for the first wave of Justinianic Plague, 250,000-300,000 fatalities would fall in line with the better-known death rates of the Black Death, another episode of Bubonic Plague that struck Eurasia in the fourteenth century.³⁷² Both P. Allen and Ann Gibbons have posited that the bubonic plague

³⁶⁷ Allen, “The ‘Justinianic’ Plague,” 10.

³⁶⁸ Little, “Life and Afterlife of the First Plague Pandemic,” 8-9.

³⁶⁹ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 277.

³⁷⁰ Ibid, 271.

³⁷¹ Allen, “The ‘Justinianic’ Plague,” 11.

³⁷² Harper, *The Fate of Rome*, 226.

wiped out $\frac{1}{3}$ to $\frac{1}{2}$ of the population of the eastern Roman Empire.³⁷³ According to Michael S. Rosenwald, the Justinianic Plague is believed to have caused somewhere between thirty and fifty millions deaths between 541 and 750 CE.³⁷⁴ While scholars do not entirely agree on the exact figure or range of mortality, Meier points out that if the fatality of the Justinianic Plague occurred “on anything even approaching” a scale of 25 percent, “it *must* inevitably have had massive, indeed devastating effects on every aspect of politics, the economy, religion, and war.”³⁷⁵

Social Changes

The seemingly infinite cycle of natural disaster and disease had a tempestuous psychological effect on many individuals. Demographic decline resulting from a combination of recurring waves of plague and natural disaster greatly changed the landscape of the empire as the Romans had once known it: in Pope Gregory’s Rome (c. 590 AD), there many have been as few as 10,000-20,000 individuals living in the city, which “would barely have filled a corner of the Colosseum.”³⁷⁶

Traditional social order collapsed. The indiscriminatory and unpredictable nature of the plague, which killed some while sparing others, and extinguished entire villages while leaving neighboring towns completely unscathed for no clear reason, drove contemporaries mad. In some cities, post-traumatic stress disorder gave way to mass hysteria: ancient authors recount a “collective madness” that struck several cities—Constantinople, Constantina, Edessa, Carrhae,

³⁷³ Allen, “The ‘Justinianic’ Plague,” 11-12; Gibbons, “Why 536 Was ‘the Worst Year to Be Alive’.”

³⁷⁴ Rosenwald, “History’s Deadliest Pandemics, from Ancient Rome to Modern America.”

³⁷⁵ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 271.

³⁷⁶ Harper, *The Fate of Rome*, 248.

Martyropolis, and Amida—in 560.³⁷⁷ “Full-blown mass hysteria” arose in Constantinople.³⁷⁸ Individuals “howled”³⁷⁹ and took flight whenever they encountered a monk, priest, or other religious official, as they suspected them of being “death incarnate.”³⁸⁰ Rumor and hysteria ran rampant; according to John of Ephesus, “a sane person could no longer be found easily.”³⁸¹ *The Life of St. Theodore of Sikyeon*, written about the Byzantine Saint, “contains numerous tales of the saint exorcising demons when whole communities became possessed.”³⁸² Each subsequent wave of plague for the next two centuries brought with it recurring waves of hysteria, devastation, and instability; Lester K. Little writes that “the challenge for leaders everywhere was to keep communities together.”³⁸³

Demographic settlement patterns across urban and rural areas of the empire shifted in response to mass mortality and rapidly changing economic conditions. The persistence of the plague for two centuries created “a prolonged epoch of demographic stagnation.”³⁸⁴ The population of the Roman Empire contracted and did not rebound for several centuries. Building projects across the empire all but ceased in the wake of the 541 outbreak of plague.³⁸⁵ While archaeological records from the time are scant, it is clear that the earthquake of 526 and subsequent earthquakes inflicted devastating damage on architectural sites across the empire. Although the evidence that has survived may be insufficient to conclude with absolute certainty that individuals left highly populated plague-infested areas and relocated to the countryside, “it

³⁷⁷ Atkinson, “The Plague of 542: Not the Birth of the Clinic,” 18.

³⁷⁸ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 283.

³⁷⁹ Ibid.

³⁸⁰ Ibid.

³⁸¹ Morony, “‘For Whom Does the Writer Write?’ The First Bubonic Plague Pandemic According to Syriac Sources,” 78.

³⁸² Atkinson, “The Plague of 542: Not the Birth of the Clinic,” 18.

³⁸³ Little, “Life and Afterlife of the First Plague Pandemic,” 27.

³⁸⁴ Harper, *The Fate of Rome*, 202.

³⁸⁵ Kennedy, “Justinianic Plague in Syria and the Archaeological Evidence,” 92.

may well point to that,” according to Hugh N. Kennedy.³⁸⁶ An archaeological survey of the main houses in Apamea—the capital of Syria II—has discovered that, by the end of the sixth-century, all but one of the houses “had been deserted or at least were in a state of decay.”³⁸⁷ This was likely due to some combination of earthquake damage, plague, and the Persian conquests of 573. In Kennedy’s opinion, the sixth-century archaeological evidence that has been unearthed in Syria “is entirely consistent with a pandemic that caused massive loss of life on repeated occasions.”³⁸⁸

Religious Changes

Despite the continuity of “Roman” terminology with which the residents of the empire used to refer to themselves and their lands, decades had passed since the city of Rome itself was truly the center of the empire.³⁸⁹ The character of the Roman Empire had fundamentally changed, as Rome was “now a strongly Christianised society.”³⁹⁰ Imperial campaigns in the decades prior to the outbreak of the Bubonic plague had sought to purge the empire of paganism and persuade—at times through the use of force—individuals to convert to Christianity. John of Ephesus, for example, alongside “gangs of monks,” raided pagan villages in Asia Minor and destroyed pagan altars and temples.³⁹¹ As the mortality of the Justinianic Plague continued to climb, and as individuals died ubiquitously, the “full apocalyptic potential” of the religious atmosphere was triggered.³⁹² Many believed the end was near; no amount of prayer or religious devotion (to any religion) could save an individual from imminent death.

³⁸⁶ Ibid, 91.

³⁸⁷ Ibid.

³⁸⁸ Ibid, 95.

³⁸⁹ Lee, “Justinian and the End of Antiquity,” 299-300.

³⁹⁰ Ibid.

³⁹¹ Atkinson, “The Plague of 542: Not the Birth of the Clinic,” 16.

³⁹² Harper, *The Fate of Rome*, 277.

The first distinctive religious response to the plague was repaganization, whereby many Christians reverted to worship of the pagan gods. Presuming that the Christian God had done nothing to spare their communities from suffering or death, some turned and prayed to the old pagan gods in search of their protection. Unfortunately, this not only attracted the ire of the primarily Christian imperial authorities, but it also did nothing to protect the people from the plague: John of Ephesus described how “the plague-afflicted residents of a Palestinian village briefly reverted to the worship of pagan images and received terrible punishment from God.”³⁹³

While some Christians turned to paganism, another popular religious response was to worship saints and other holy figures within the Christian faith with the hope that they might “intercede with God for the cessation of the scourge and cure them of it.”³⁹⁴ As prayers to the Christian God were unsuccessful, they caused some individuals to lose faith in “traditional guardians” of the Christian religion.³⁹⁵ Rather than calling the entire religion into doubt, individuals instead attempted to “place their salvation in the hands of new protectors.”³⁹⁶

Worship of the Virgin Mary increased again, as it had in the wake of the Cyprian Plague. This is evidenced by the transformation of an annual festival—which had historically been held in honor of Christ—to a festival in celebration of the Virgin in 542, “expressly as a measure to alleviate the plague.”³⁹⁷ Although Christians had hitherto rejected it in every form, because they viewed it as a perpetuation of pagan religious practices, icons of venerated saints and religious figures “began to appear abundantly” in private and public spaces in the second half of the sixth

³⁹³ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 283.

³⁹⁴ Stathakopoulos, “Crime and Punishment: The Plague in the Byzantine Empire, 541-749,” 109-110.

³⁹⁵ Meier, “The ‘Justinianic Plague’: The Economic Consequences of the Pandemic in the Eastern Roman Empire and Its Cultural and Religious Effects,” 286.

³⁹⁶ *Ibid.*

³⁹⁷ *Ibid.*, 285.

century.³⁹⁸ The timing of this uptick in iconolatry directly coincides with the exogenous disasters that afflicted the eastern Roman empire during this time.

An intensification in Christian piety in response to the Justinianic Plague also manifested itself in the continuation of church construction projects throughout times of economic scarcity, as well as through a spectacular increase in monasticism. In the two centuries during which the plague swept through the empire, church construction became the “most active form of public construction.”³⁹⁹ More monasteries were built with increased capacity to accommodate a larger number of monks.⁴⁰⁰ Without any sense of germ theory, practices of monastic life created conditions ripe for disease spread. John Maddicott writes that “there could hardly have been a more innocently lethal act of charity than the kiss of peace” that Abbot Eosterwine gave every monk of the Wearmouth monastery as he lay dying of Bubonic plague in 686.⁴⁰¹ More than simply providing a passive arena for the plague’s spread within the residential structure, however, monks’ frequent visits to nearby villages are likely to have spread the disease far beyond the physical boundaries of the monastery.

According to Jo N. Hays, the period of the Justinianic Plague was “an age of shifting religious domination and contested grounds” between Christianity, paganism, Judaism, and Islam.⁴⁰² During the time that Bubonic plague was endemic to Egypt, Palestine, Syria, Iraq, and Iran (from the late sixth century CE onwards), Islam began to spread through these regions. As the plague severely weakened the eastern portion of the Roman Empire and accelerated the decline of the Persian Empire, it scarcely afflicted the nomadic Arab tribes—many of which had

³⁹⁸ Ibid, 286.

³⁹⁹ Harper, *The Fate of Rome*, 279.

⁴⁰⁰ Little, “Life and Afterlife of the First Plague Pandemic,” 27.

⁴⁰¹ Maddicott, “Plague in Seventh-Century England,” 188-189.

⁴⁰² Hays, “Historians and Epidemics: Simple Questions, Complex Answers,” 41.

converted to Islam—who were traveling through these regions, typically through desert-like terrain.⁴⁰³ Thus, while the rest of the population was relatively stationary during the various outbreaks of Bubonic plague, Islamic nomadic tribes continued to travel throughout the Middle East and shared their religious beliefs with those they encountered, and as a result were able to spread their religion.

Political Changes

While the first decade of Justinian’s reign—prior to the arrival of Bubonic plague—was remarkably successful and prosperous, his administration grappled with “a preponderance of setbacks”⁴⁰⁴ in the years following the outbreak of plague. Justinian’s ambitious programs of reform and military conquests, which may very well have been successful under normal circumstances, were complicated by natural disaster, plague, and consecutive years of bad harvests. According to Harper, the 540 plague inaugurated “what has been called ‘the *other* age of Justinian.’”⁴⁰⁵ Although Justinian’s personal character, work ethic, and proactivity were exemplary by all measures, the critical question, according to Lee, “is whether his initiatives and efforts ultimately benefited the empire or not.”⁴⁰⁶ Extensive military campaigning exhausted imperial financial reserves, making the treasury desperate for revenue. The high death toll merely added to the burden. Thus, while Justinian may have wanted to restore the greatness of the Roman empire by seeking to evoke large societal change and reconquering territories that had previously been the core of the empire, his ambitious programs further complicated the

⁴⁰³ Sabbatani, Manfredi, and Fiorino, “The Justinian Plague (Part Two). Influence of the Epidemic on the Rise of the Islamic Empire.”

⁴⁰⁴ Lee, “Justinian and the End of Antiquity,” 295.

⁴⁰⁵ Harper, *The Fate of Rome*, 206.

⁴⁰⁶ Lee, “Justinian and the End of Antiquity,” 295.

issues that the state faced from the exogenous events of the 540s. Justinian’s reign “trundled forward in the shadow of pestilence.”⁴⁰⁷ His rule came to be defined by the grave exogenous events that occurred during his time as emperor, which he could do little to mitigate the damage of. This, along with a “series of unfortunate events”⁴⁰⁸ late in Justinian’s reign, such as food shortages, protests, assassination attempts, and natural disasters, caused contemporaries to regard him contemptively and often harshly criticize his leadership and apparent poor control of the Roman state.⁴⁰⁹

Economic Impact

Economic life across the empire—and in Constantinople in particular—came grounding to a halt. Across the countrysides of the empire, grapes rotted on the vine, herds went untended, and crops unharvested. With few individuals left who were either willing or able to work, buying and selling all but ceased.⁴¹⁰ Marketplaces closed after running out of food. According to Allen, the primary effects of the 542 outbreak of Bubonic plague were “famine and inflation.”⁴¹¹ In an economy that was primarily agricultural, the dire lack of agrarian labor at harvest time “had disastrous consequences.”⁴¹² The agricultural challenges the Romans faced were exacerbated by the fact that the pestilence was not confined to humans: it attacked and killed off cattle and other animals, further contributing to food shortages and hindering production. As labor had become increasingly scarce while demand rose, “tradesmen, artisans, and agricultural workers” began to demand prices and wages two to three times more than what

⁴⁰⁷ Harper, *The Fate of Rome*, 206.

⁴⁰⁸ Lee, “Justinian and the End of Antiquity,” 293.

⁴⁰⁹ Evans, “Justinian and the Historian Procopius,” 223.

⁴¹⁰ Morony, “‘For Whom Does the Writer Write?’ The First Bubonic Plague Pandemic According to Syriac Sources,” 80-81.

⁴¹¹ Allen, “The ‘Justinianic’ Plague,” 16.

⁴¹² *Ibid.*

had previously been considered the norm.⁴¹³ Justinian was quick to respond, introducing price control legislation in 545 and urging employers to pay workers their customary wages rather than the newly-inflated rates.

The government's demand for tax revenue remained constant in the wake of the Justinianic Plague, as the physical size of the empire and demands made on the state by warfare on multiple frontiers had remained the same. However, the imperial need for tax revenue quickly proved to be problematic; as the taxpayer base of the empire had contracted significantly due to plague mortalities, the average individual tax burden increased considerably. Justinian made no taxation concessions to landowners, despite the fact that many were already suffering financially as a result of the epidemic.⁴¹⁴ The imperial taxation program proved so burdensome that some farmers fled to escape paying taxes on their unproductive land.⁴¹⁵ Justinian's response? Landowners were soon required to pay annual taxes on both their own land, as well as on plots of neighboring land that had been abandoned.⁴¹⁶ Such a taxation policy devastated the poorer landholding classes, while working to the advantage of the wealthy, who could not only afford to pay their increased tax obligations but also stood to gain financially from increased assets and owning more land that they could work and turn a profit on. As stated by John Atkinson, the chaotic economic conditions brought about by the plague created "the potential for both the enrichment of the wealthy who survived, and some measure of redistribution of wealth."⁴¹⁷ Yet even the financial position of the wealthy was not particularly stable. Sudden, widespread death threw the inheritance system into disarray. And, in a formerly advanced

⁴¹³ Sarris, "The Justinianic Plague: Origins and Effects," 177-178.

⁴¹⁴ Atkinson, "The Plague of 542: Not the Birth of the Clinic," 15.

⁴¹⁵ Ibid.

⁴¹⁶ Ibid.

⁴¹⁷ Ibid, 14.

economy with modern financial credit systems, “banks were desperate to enforce debt obligations on successors.”⁴¹⁸

Pinched for revenue, the Roman state overhauled the imperial currency system. Around 542-3, a time period that coincides with the “first ravages”⁴¹⁹ of the Bubonic plague, Justinian issued a series of lightweight *solidi* coins, many of which weighed 20 *siliquae* (24 had previously been customary).⁴²⁰ It is likely that the administration minted poorer-quality gold and copper coins in response to the drastic fall in state revenues. Michael Metcalf’s study concluded that, between the years of 538 and 551, the weight of copper coinage minted throughout the empire decreased by nearly 25 percent.⁴²¹ The cumulative blow of multiple waves of plague had a debilitating impact on Ancient Rome’s state finances and financial systems. Justinian’s successor—Justin II, who reigned from 565 to 578—lamented the “exhausted” and debt-burdened treasury he had inherited.⁴²² The financial crisis became so great that imperial authorities had no choice but to reduce military pay by 25 percent in 588.⁴²³ Rome’s inability to finance and pay its military to the same extent as it had prior to the outbreak of plague quickly proved to be problematic as the empire faced threats from neighboring territories on multiple fronts.

Impact on Military

Justinian’s crusades to reconquer the western territories of the empire—while initially successful—stretched thin the financial resources and military capacity of the Roman Empire.

⁴¹⁸ Harper, *The Fate of Rome*, 234.

⁴¹⁹ Sarris, “The Justinianic Plague: Origins and Effects,” 176.

⁴²⁰ Ibid.

⁴²¹ Sarris, “Bubonic Plague in Byzantium: The Evidence of Non-Literary Sources,” 129.

⁴²² Lee, “Justinian and the End of Antiquity,” 297.

⁴²³ Sarris, “Bubonic Plague in Byzantium: The Evidence of Non-Literary Sources,” 131.

Given the close living quarters soldiers experienced in camps, the Roman armies sustained “the maximum mortality rate” from the Justinianic Plague.⁴²⁴ The disruption that the epidemic of the 540s caused to Rome’s military campaigns was enormous: imperial commanders struggled with manpower shortages and an inability to pay even the scant number of troops they were able to rally. In 552, Justinian’s armies managed to defeat Totila, thereby regaining control of Italy.⁴²⁵ But Justinian did not stop there. He continued to campaign across the western Mediterranean, sending troops to fight the Moors in North Africa and intervening in a civil war in Spain.⁴²⁶ Earlier in his reign, many of Justinian’s peace treaties stipulated monetary payments from the Roman imperial treasury to areas that posed a threat to the Empire. However, in the aftermath of the Justinianic Plague, this tactic proved to be unsustainable; Lee argues that while Justinian’s monetary payments were successful in the short-term, they may have handicapped the empire’s military strategy and resources in the long term, as the fiscal crises brought about by the plague made it difficult for the empire to afford the sums it had agreed to pay to its enemies during a time of relative economic prosperity and stability.⁴²⁷

Justinian’s commitment of imperial forces to multiple theatres of war created a predicament. After the Justinianic Plague, the state could neither field the army that its vast domain and multiple fronts of perpetual warfare required, nor could it afford to pay such an army. Debasing the currency—a gambit often used by other leaders at times when state finances were pressed—was no longer an option, as gold currency had become the “gold standard” and was now the only form of payment troops accepted.⁴²⁸ According to Harper, in times of

⁴²⁴ Allen, “The ‘Justinianic’ Plague,” 17.

⁴²⁵ Lee, “Justinian and the End of Antiquity,” 292.

⁴²⁶ Ibid.

⁴²⁷ Ibid, 296.

⁴²⁸ Harper, *The Fate of Rome*, 273.

financial duress, the state had two options: either to withhold pay from soldiers, or to squeeze taxpayers.⁴²⁹ During the 540s, the empire often did both. In the 570s, Roman Emperor Tiberius II was forced to resort to desperate enlistment campaigns across the empire to increase the size of the army. In 588, imperial authorities formally reduced military pay by 25 percent.

The initial outbreak of Bubonic plague in the 540s and subsequent outbreaks severely debilitated the eastern Roman Empire and the might of its military forces. The mortality and fiscal crisis occasioned by the plague severely weakened the empire “in the decades leading up to the final dramatic phase of Byzantine-Persian warfare in the early seventh century,” according to Sarris.⁴³⁰ In 626, the Persians, having conquered much of the Eastern Roman Empire, made their way to the walls of Constantinople. With the capture of Constantinople, along with large swaths of eastern territories, the “last great zone of energy” of the Roman Empire was lost.⁴³¹ The Mediterranean world as Rome had once known it was no more—the empire was spliced into smaller pieces which were claimed by various surrounding leaders. Such severe geopolitical losses caused Rome to morph into “a Byzantine rump state whose straggled possessions were meager and impoverished.”⁴³² The noxious combination of mortality and financial crisis fueled by the Justinianic Plague made it impossible for Rome to defend the many frontiers of the empire against outside intruders.

Conclusion

In spite of heavy mortalities, military losses, political change, social upheaval, and economic hardship—brought about by the Antonine and Cyprian Plagues—the Roman Empire

⁴²⁹ Ibid.

⁴³⁰ Sarris, “The Justinianic Plague: Origins and Effects,” 173.

⁴³¹ Harper, *The Fate of Rome*, 286.

⁴³² Ibid.

managed to rebuild itself and make a miraculous recovery in the centuries that followed. Justinian's rule marked the beginning of an era rife with possibility; that, with a few strategic military campaigns, Rome might regain its glory and status as a Mediterranean superpower. These dreams were swept away when disease struck in 542. The damage resulting from the Justinianic Plague was both disastrous and far-reaching. By the end of the sixth century, Rome was a shadow of her former self, more than a third of the empire's population had succumbed to disease. Grave mortality and economic instability brought about by the plague halted all hopes of reconquest or restoration of the "old" Roman Empire. There was simply not enough money or manpower to continue with the aggressive military campaigns that had commenced under Justinian's rule. Imperial attempts to ward off threats in multiple directions simultaneously to preserve Rome's territorial footprint further weakened the empire. In the end, Rome's extensive and aggressive military prowess—which had facilitated the empire's unparalleled territorial conquest and dominance throughout the known world—also enkindled her demise.

CONCLUSION

History and the human experience are inextricably linked to the climate and ecology of our planet. Often overlooked, pathogens and infectious diseases have profoundly impacted societies across the world for millennia. In particular, the four major ancient epidemics explored in this paper wrought immense destruction across the known world. Individually and cumulatively, the unrelenting pathogens responsible—some with mortality rates above 25 percent—gave rise to conditions that ultimately contributed to the collapse of two of the world's greatest empires: Athens and Rome. Economies suffered, military regimes collapsed, and political turmoil ensued. Changing climate conditions precipitated or exacerbated outbreaks of infectious disease and created agricultural and economic hardships that, in turn, were further exacerbated by the outbreak of plague. Societies stricken by disease sought explanations for their suffering, turning to new religions or religious practices in pursuit of answers that religion could not provide.

For over 2,000 years, the legacies left by the ancient Athenian and Roman empires have inspired awe. Athens and Rome were centers of scientific and philosophical inquiry, political theory, and technological innovation. They were the birthplace of progressive systems of government and finance that served as models for many other countries. With geographical footprints that, at times, exceeded the boundaries of the entire Mediterranean, they were hotbeds of international trade, diplomacy, and triumphant architectural and infrastructure achievements. Despite lacking the transportation or communication technologies we possess today, the ancient Athenians and Romans managed to extend and redefine the commercial, political, and intellectual horizons of their respective empires.

Yet, in their quest to further expand their power by conquering and colonizing territories across the Mediterranean and beyond, the ancient Greeks and Romans also may have unleashed a Pandora's box of pandemics. Increased travel, migration, and exploration facilitated—and also intensified—the spread of infectious diseases to nonimmune populations across the known world. Ancient philosophers had made revolutionary discoveries in mathematics, astronomy, and engineering. But when it came to plague, they were helpless; the spread of infectious disease was a matter they simply failed to understand. It took only one plague to tear down Athens. Rome managed to resist the formidable force of infectious disease twice: despite suffering heavy mortalities from both the Antonine and Cyprian Plagues, the empire—much to the astonishment of modern scholars—managed to repopulate, re-stabilize its economy, and reconquer lost territories. But even the most resilient empire could only sustain so much; with each subsequent wave of plague, Rome's efforts to rebuild were reversed. With the Justinianic Plague, nature's destructive force rained down, ultimately pushing one of the world's greatest empires to the brink of collapse.

While the Plague of Athens, the Antonine Plague, the Cyprian Plague, and the Plague of Justinian were the four worst outbreaks of infectious disease known to have occurred in ancient times, they are far from the only widescale outbreaks of infectious disease to have occurred throughout history. A quick Google search unearths, among other things, a list of “20 of the worst epidemics and pandemics in history,” many of which had death tolls in the hundreds of thousands, others in the millions.⁴³³ For centuries after the Justinianic Plague, microbes and viruses have continued to be formidable forces to reckon with. In the absence of Germ theory, there was little that could be done to mitigate their damage, as “there was no scientific reason to

⁴³³ Jarus, “20 of the Worst Epidemics and Pandemics in History.”

fear the infected.”⁴³⁴ It was not until the European Enlightenment of the eighteenth century that scientific discovery and innovation began to provide solutions for controlling infectious disease outbreaks. In 1762, Austrian physician Marcus Antonius von Plenciz published a book in which he outlined a Germ theory of disease; yet it took another century for his theory to become widely accepted. At the turn of the nineteenth century, the first vaccine was developed. Only in the past three centuries have scientists managed to develop vaccines, antibiotics, and other therapeutic treatments to combat a range of infectious diseases that were previously considered deadly. “The great triumph of our species,” stressed Harper, “is the control of infectious diseases.”⁴³⁵ As a society, we have clung to a “persistent illusion of control”⁴³⁶ of infectious disease, as we are now able to prevent and treat many infectious diseases that afflicted mankind in previous decades and centuries. Yet, as evidenced by the emergence of a “terrifying roster” of infectious diseases, ranging from HIV and Ebola to West Nile and SARs, “nature’s creative destruction is far from spent,” wrote Harper in 2018.⁴³⁷

Then came COVID-19. Scientists are still learning about the ways in which the virus spreads and affects the human body. In the absence of an effective vaccine or treatment, we are currently living through a pandemic which we cannot yet prevent or cure. At this juncture, it may be tempting to look to the experiences of the ancient Greeks and Romans for insight. There are significant commonalities between the consequences of COVID-19 and the four major ancient epidemics, including anxiety surrounding the unknown, social upheaval, economic decline, and the exacerbation of racial and socioeconomic inequalities.

⁴³⁴ Harper, *The Fate of Rome*, 109.

⁴³⁵ Harper, *Pandemics, Climate Change, and The Fall of Rome*.

⁴³⁶ Harper, *The Fate of Rome*, 16.

⁴³⁷ *Ibid.*

Outbreaks of infectious disease have been, and likely will continue to be, inevitable. Modern technology, international travel, global supply chains, urbanization, and population growth may even exacerbate the speed and extent of their spread. But, compared to people living in ancient times, we are in a much better position today to contend with these pathogens, pernicious as they may be. DNA sequencing and international collaboration among scientists enabled identification of the virus responsible for the current outbreak in record time and will—hopefully—speed the development of multiple vaccines, anti-virals, and other treatments to combat this and any future outbreaks. Modern medicine has helped, and will continue to help, many infected individuals to survive and recover. Unlike the ancient Greeks and Romans, we have the tools to determine how a given disease is transmitted, and what measures (e.g., face masks and social distancing) are needed to mitigate its spread.

Mark Twain once wrote that “History doesn’t repeat itself, but it often rhymes.” But with the tools at our disposal, in the case of COVID-19, history need not repeat itself—or even rhyme. The mortality rate of COVID-19 (estimated to be somewhere between 3-4%)⁴³⁸ pales in comparison to the mortality rates of ancient pandemics (approximately 10-80%). While it is premature to attempt to predict the long-term economic, social, and religious consequences of the current pandemic, given the unique advantage we have over our ancestors—knowledge in medicine, genetics, and epidemiology—there’s reason to be optimistic that the current pandemic will be less consequential than these ancient pandemics, as long as political leaders and citizens alike are willing to follow the advice of scientists.

⁴³⁸ “Q&A: Influenza and COVID-19 - Similarities and Differences.”

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Faculty rating: 4

Faculty statement: Natasha's extensive consideration of four major ancient Mediterranean plagues and their cultural implications is a quite remarkable example of (truly) independent research by a rising sophomore History major - she would be an entirely deserving recipient of LURA recognition from The Claremont Colleges Library. Originally conceived for (and subsequently supported by) Pomona's Summer 2020 RAISE Program, "Politics of Plague: Ancient Epidemics & Their Impact on Society" draws widely and insightfully on the relevant ancient and modern sources to provide both an introductory overview and a compelling analysis of these horrifically destructive episodes. Although I had worked very happily with Natasha during her first (Fall 2019) semester in my HIST 8 Heroes and Heroines in the Ancient Mediterranean and subsequently saw Pomona History award her the Learnihan Prize for best first-year performance in ancient and medieval history, I was nonetheless astonished in August when - two months after our last conversation - she sent me this final draft of her Summer 2020 research. My initial astonishment about the length - right around 100 pages, that of a very solid year-long undergraduate thesis - was subsequent augmented by astonishment at the methodical yet compelling manner in which Natasha, inspired by our own COVID tragedy, had immersed herself in the sources and presented her comparative study of these ancient epidemics. Although Natasha remains understandably indebted to the earlier work of scholars such as Walter Scheidel and Kyle Harper, she has delivered an excellent synthesis and analysis of the source materials, and - against the backdrop of COVID - has done so in an incredibly timely way. I very much look forward to seeing how her further research into this topic deepens and advances her understanding of these ancient plagues and their contemporary relevance (perhaps a subsequent thesis / LURA submission in a couple years' time?), and for now warmly commend her "Politics of Plague" submission to this year's sophomore LURA competition.