

START OF DECLINE: THE ROMAN EMPIRE'S OVERLOOKED PLAGUE

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Introduction

“All Roads lead to Rome.” From its monarchical origins to the formation of the Republic, from the triumvirates’ collapse to the imperial consolidation of power, Ancient Rome is an interconnected center of remarkable historical achievements. The aqueduct providing water sources for citizens, architectural domes giving structural support, sophisticated legal systems and institutions, the flourishing of classical culture, and extensive international trade networks are among some of Imperial Romanum’s advancements that contributed to its lasting legacy. The Romans accomplished more than simply establishing a vast, powerful empire; with Romanization underway and effective imperial administration backed by a prevailing military, the golden age of Pax Romana lasting two centuries from 27 B.C. to 180 A.D. became a period of relative “hegemonic” stability, flourishing culture, and peak influence for the Roman Empire.¹ Then on, the Crisis of the Third Century took place from 235 to 284 A.D., a period marked by political instability and declining Roman influence.² As fourth-century writer Aurelius Victor puts it, “Good men and bad alike were placed in the imperial position ... even a good many barbarians.”³ Such policies provoked further civil unrest following the succession of Claudius, Aurelian, and Probus, who attempted reforms that failed to tackle the roots of Rome’s internal instability. When Diocletian took over the throne in 284 A.D., he instituted the tetrarchy

¹ Ali Parchami, *Hegemonic Peace and Empire: The Pax Romana, Britannica and Americana* Google Books (Oxfordshire: Routledge, 2009), 16.

² A.R. Birley and Frank Taylor, *The Third Century Crisis in the Roman Empire* (Manchester: Bulletin of the John Rylands Library, 1976), 58 (2) 253–81.

³ Aurelius Victor, *de Caesaribus*, 24.9.

political division of power and strict economic changes such as the Edict of Maximum.⁴ Later, Constantine religiously reformed the Empire by embracing formerly prosecuted Christianity and found a new capital for the Eastern Roman Empire or the Byzantine Empire. This led to further division of the Roman Empire and later internal struggles where Rome was sacked by Barbarian Invasions, and the Western Roman Empire ended in chaos under the Visigoths.

Many historians accredit the fall of the Roman Empire as caused by these civil instabilities, economic downturns, and weakening of military security for the empire as the golden age of Pax Romana ended. However, the end of this golden age is set off by an often-overlooked plague that lasted from 165 to 180 A.D. — The Antonine Plague taking place near the end of the Antonine Dynasty. This first epidemic ever experienced by the Roman Empire led to the loss of 10% of the Empire's population, accounting for approximately five to ten million deaths and severely declining the prestige of Roman imperial power.⁵ While the Roman Empire is known for "Dominus Et. Deus," standing for Lord and God, the epidemic possessed just as much authority and superiority over its citizen's lifestyles, health, and imperial development. In reality, the strike of the Antonine Plague led to a severe decline in the Roman economy, Pagan Beliefs, and social well-being along with a destabilization of the military establishments and political climate. These consequential impacts would synergistically end Pax Romana, trigger the Roman Imperial Civilization's decline, and set the pace for its later downfall.

⁴ **Edict of Maximum:** Maximum price ceilings set for a variety of commodity goods by Roman Emperor Diocletian in 301 A.D; See note 2 above.

⁵ John Horgan, *Antonine Plague* (World History Encyclopedia, 2019).

The Decline in Economy, Pagan Beliefs, and Social Wellbeing

The Antonine Plague, or the Plague of Galen named after Greek Physician and Author of *Methodus Medendi* Claudius Galenus who recorded the outbreak, infected those who suffered from illness for nearly two weeks with high mortality rates of twenty-five percent, even leading to the death of Emperor Marcus Aurelius. As Galen described the symptoms and cure:

Of some of these which had become ulcerated, that part of the surface called the scab fell away and then the remaining part nearby was healthy and after one or two days became scarred over. In those places where it was not ulcerated, the exanthem was rough and scabby and fell away like some husk and hence all became healthy.⁶

Without many dated inscriptions in Rome from 167 to 180 A.D., the severity of mortality can be estimated to have a depopulated population from five to ten million to a controversial thirty-three percent mortality among the approximately 75 million inhabitants of the Empire.⁷ From the Far East, the Roman Soldiers returning victorious from the Parthian conflict carried an unknown plague believed to be some form of smallpox or typhus. The epidemic led to an overall reduced life expectancy, striking Italy especially hard where the plague's joint existence with malaria and other seasonal diseases caused severe fatalities. These fatalities spread to Asia Minor, Egypt, Greece, and Italy across the Empire's integrated transit network.⁸ Even in the

⁶ R.J. Littmann and M.L. Littmann, *Galen and the Antonine Plague* (Baltimore: The American Journal of Philology, 1973), 3 (94) 246.

⁷ Christer Bruun, *The Antonine plague in Rome and Ostia* (Rhode Island: Journal of Roman Archaeology, 2003), 16, 426-434.

⁸ Damir Huremović, *Brief History of Pandemics (Pandemics throughout History)* (Psychiatry of Pandemics, 2019).

capital of Rome, the plague accounted for nearly 2,000 daily fatalities at its peak. From this perspective as compared to the other epidemics during the Classical Era, such as the Plague of Athens under Pericles and the Justinian Plague that occurred a millennium after the former, Antonine Plague was often ignored as the important turning point for the Roman Empire. During the Antonine Plague, many economic activities staggered, thus leading to the depreciation of the value of goods and services, a decline of facilities, and severe economic downturn. Archaeologically, the decrease in air pollution and Iberia's mining activities denoted decreasing active economic facilities.⁹ Documented records from Roman Egypt suggested modest levels of labor income, but more conclusive evidence revealed similar trends across economic sectors and imperial administrative regions.¹⁰ These tendencies of weakening economic development and living standards relate to the Plague Era due to depopulation.

As the population declined, the land-to-labor ratio increased, making incomes lower and land yields cheaper as the overall price level depreciated. Between 158 to 219 A.D., the total amount of land cultivated decreased, and transaction records showed a significant decline in the production of commodity goods like wheat and an increase in consumption of wines and other luxuries as wages rose quicker than the prices of goods during the beginning of the plague.¹¹ From the switch in production demand, a smaller-scale economy focusing on profitable luxuries becomes more favorable than planting commodity crops on large fields. This would lead to a future rise in the price of commodity goods due to the recovery in population but limited

⁹ W. Scheidel, I. Morris, and R. Saller, *The Cambridge Economic History of the Greco-Roman World* (Cambridge: Cambridge, 2007).

¹⁰ W. Scheidel, *A Model of Demographic and Economic Change in Roman Egypt after the Antonine Plague* (Rhode Island: Journal of Roman Archaeology, 2002), 15, 97-114.

¹¹ See note 10 above.

production. Though some may argue that the average food prices rose quicker from 165 A.D pre-Antonine Plague to 180 A.D than before and after the Crisis of the Third Century, the failure to consider coinage policies and later Diocletian economic reforms tarnished the comparability between these trends.¹² Regardless of inflation and policy factors, decreasing annual rent of wheat and major crop fields can best exemplify a significant decline in capital investment during the plague. From the second century A.D. period before the plague, land rents accounted for three major wheat crops Arisnoite, Oxyrhynchite, and Hermopolite ranging around 7.5 to 8 artabas per aroura.¹³ Over time in the late second century A.D., the price for these crops decline to 5.5, 6, and 3.6, respectively, indicating a decrease over the time frame of the epidemic.¹⁴ As the population diminished, these demands for land decreased and the rent was lowered to encourage more cultivation of land and agricultural production activities. This seems to be an efficient supply-based policy, but it proved ineffective. From recorded harvests around 180 A.D after the plague, the percentage of total wheat harvested was only 27.5% of the projected amount, causing widespread starvation.¹⁵ Considering this happened after Aurelius' reign and the plague, a below-expectation harvest could only hinder population and economic recovery. Because recovery staggered, economic facilities were gradually deactivated, especially factories

¹² R.S. Bagnall, *The Effects of Plague: Model and Evidence* (Rhode Island: Journal of Roman Archaeology, 2002), 15, 114-120.

¹³ **Artabas per Aroura:** an agricultural unit developed during Hellenistic Egypt. Artabas refer to a dry capacity of agricultural crop volume, while Aroura refers to the area a team of oxen can plow within a day. The exact quantities vary by region.

¹⁴ Peter Van Minnen, *The Changing World of the Cities in Later Roman Egypt* (J.-U. Krause, 2006).

¹⁵ Peter Van Minnen, *P. Oxy. LXVI 4527 and the Antonine Plague in the Fayyum* (Germany: Zeitschrift Für Papyrologie Und Epigraphik, 2001), 135, 175–77.

and mines, which led to further downturns. A further decline in land value and economic depression drastically increased real prices and rents of goods relative to average income. This cascade of effects would have lasting economic impacts even after the plague. Before and after the plague, wages in wheat units increased by one-fifth, while the nominal increase in essential goods like wine and oil rose by nearly one-half.¹⁶ In imperial regions such as Egypt, economic situations fared worse for the workers due to its export-based economy centered around grains. A peaking demand of international or regional buyers drove up price levels that worsened the economy, leading to economic decline long after the plague ended. These changes made it difficult for Roman Citizens to purchase necessities and have a sustainable individual living. Diving deeper into the individual perspective, not only did the plague shorten average life spans, but its economic implications also led to nutrition deficiency and economic infrastructural devastations varying regionally. Anthropometric studies indicated that body height was higher either during the Iron Age or in the Middle Ages compared to the era after the Antonine Plague era; in exceptions like Britain, citizens' body statures steadily increased during the period due to its long-term stability with the separation of English Channel from the Imperial Mainland.¹⁷ Body heights are clear indications for nutrient intake, standards of living, and growth and development before adulthood – a decrease in body height reflects low living standards for the general public during this period due to the effects of the plague. But how destructive was the plague, such that developed Roman agricultural and transport infrastructures couldn't facilitate basic needs for its citizens? Though the Roman Empire consisted of these sophisticated

¹⁶ J. Munro, *Ad Deverticulum: scavi archaeologici Lungo la Bretella Nomentana* (Rome: Generalvie SPA, 2006), 73-80.

¹⁷ R.S. Stephan, *The Height of the Romans: Stature and Standards of Living in Ancient Britain* (Stanford Department of Classics, 2008).

infrastructure and food production technologies, skeletal features from human remains during the plague era exhibited *cibria orbitalia* and *cibria cranni* physical symptoms.¹⁸ These features corresponded to iron-deficiency anemia and hypoplasia respectively. Both health concerns are induced by nutritional deficiencies, parasitism, and disease proliferation in urban, suburban, and rural sites – nearly 70% of individuals developed enamel hypoplasia in Rome, Vallerano, Isola Sacra, and Osteria del Curato.¹⁹ These deficiencies and hypoplastic underdevelopment rates in a developed imperial state far exceeded normal levels. Such rare attributes of diseased body stature reflect low physical well-being and a drastic decline in living standards in all regions of varying development across the empire.

For theists living during the pandemic, Roman Pagan polytheistic religious institutions declined in influence, while monotheistic religions such as Christianity surged across the empire. From the Pilgrims of the New World at Plymouth Rock in the 17th century praying for their journey of establishing their first colony to the Roman Siege of Masada in the Classical World when Jewish residents faithfully committed suicide for their beliefs, religious believers sought comfort amid challenges throughout history. In the case of the Antonine Plague, the Greco-Roman Cult of Medicine Asclepius is the central Pagan Deity known to heal the wounded and sick and came from Greece to Rome in 293 B.C. per mythological origins. Usually, during these medical crises, people demand good health and protection from contagious diseases from the god of healing. However, during the Antonine Plague, Roman Citizens didn't have clear tendencies to pray towards Asclepius. In quantitatively analytical research conducted by modern scholars,

¹⁸ A. Buccelato et al., *La nécropole de Collatina* (Dossiers d'Archéologie, 2008), 330, 22-31.

¹⁹ B. Bonfiglioli, P. Brasili, and M.G. Belcastro, *Dento-Alveolar Lesions and Nutritional Habits of a Roman Imperial Age Population (1st-4th c. AD)* (Molise, Italy: Quadrella, 2003), 54, 36-56.

Latin inscriptions, epigraphic evidence, results centered around a data-based Monte Carlo model show that Asclepius did not increase in popularity over the plague with a stagnant number of inscriptions, monument establishments, and text mentions of the deity. These declining tendencies in trust towards key pagan deities like Asclepius amid crisis resemble an epitome of the decrease in the influence of the Roman Religion and increasing acceptance of monotheistic beliefs, especially Christianity. Before the plague, an estimated 40,000 Christian adherents accounted for merely 0.07% of the Empire's population and were often prosecuted by state laws.²⁰ Many Christians however, per biblical-related records, were willing to provide ethical care for those infected and at times, offered an opportunity for pagans to be evangelized. Throughout the plague, then Emperor Marcus Aurelius invested in restoring temples and monuments for Roman deities while continuing prosecuting policies of the Christians who refused to believe in the Greco-Roman religion – once again, Christianity served as the scapegoat for a natural crisis.²¹ Humanitarian assistance of Christians amid difficult times surpasses in popularity of normal Romans over the latter's discriminating policies. This is partly because focusing purely on religious cults but not on providing foundational help blemishes the Pagan mission's credibility. In turn, missionary assistance converted many Roman Pagans to Christians; though the exact numbers are unknown, global Christian networks accounted for 100,000 followers in 180 A.D.²² A significant increase of approximately 150% highlights the decentralization of religions within the Roman Empire and an increasing acceptance of

²⁰ Andrew Latham, *Classical Corner: The Antonine Plague and the Spread of Christianity* (Washington D.C.: Biblical Archaeology Society, 2019).

²¹ See note 6 above

²² Thomas Kidd, *How Many Christians Were There in 200 A.D.?* (Illinois: The Gospel Coalition, 2017).

monotheistic religions like Christianity, whose members offer actual support for each other. Though these sources regarding the Christian spread of love are mainly provided by biblical organizations and Christian records, the general trend for an increasing acceptance of Christianity is nevertheless true. This developing tendency casts realistic effects on imperial policies. Later, the Roman Empire prohibited prosecuting Christians under Emperor Gallienus, and Christianity surged in popularity amid another epidemic, the Cyprian Plague named after the Christian Bishop of Carthage. Cyprian refused to renounce his Christian beliefs similarly to the apostles and saints of before, so his execution marked him a Christian Saint of martyrdom. Along with the widespread influence of Christianity due to the Antonine Plague, Cyprian's death sets a foundation for the later recognition of Christianity.²³ The event marks a significant turning point in which Christianity is not only recognized as a reliable religious organization but also one that is sympathized by others for its discrimination despite their persistence throughout time. Around 200 A.D., Christians were still invisible from institutional records; but as the believers grew, Christians were notified on papyri, crafted on Roman Burials, and eventually in 313 A.D. when Emperor Constantine issued the Edict of Milan. A seeming acceptance of diversity and openness towards monotheistic religions bears not only from Constantine's view of the victory cross at the Battle of Milvian Bridge but also an undeniable, necessary concession towards Christianity's dominant influence and the eventual decline of Pagan beliefs.

²³ Tomáš Glomb, Kaše Vojtěch, and Hermankova Petra, *Popularity of the Cult of Asclepius in the Times of the Antonine Plague: Temporal Modeling of Epigraphic Evidence* (Massachusetts: Journal of Archeological Science, 2022), 43, 103466–66.

Destabilization of the Military Establishment and Political Climate

An economic downturn, decline in social well-being, and increasing influence of Christianity over paganism lowered public confidence in the Empire and decentralized the Empire's spiritual foundation. Compared to Antonius Pius's reign, infrastructure investments declined by half, standards of living dropped, and the Empire's foundation weakened despite wealth accumulation over Pax Romana. But what's more at stake are the existing military establishments and political system, which directly impact the national security and stability of the Empire's rule. As soldiers brought the smallpox diseases from frontline campaigns at the Battle of Seleucia led by co-emperor Lucius Verus returned to Rome, the contagious epidemic spread throughout the Roman Empire and led to heavy casualties. Some sources even reveal a greater net casualty within dozen years of the Antonine Plague compared to the more often emphasized Justinian Plague that lasted two centuries.

Due to the Antonine Plague, demographic shifts occurred with rapid depopulation from plague, starvation, and fleeing from urban areas.²⁴ This reduced availability for conscription, lowered the tax base for military funding, and threatened existing military establishments for securing vast territories from the Danube River to the frontlines of Anatolia. Thus, when the soldiers returned from the frontline, the military became especially vulnerable to the disease. This is because harsh training and living environments amid war can weaken their immune system and caused higher mortality among military men service. A higher mortality rate causes panic and decreases available service men for dispatchment while threatening the continuity of

²⁴ Rebecca M. Seaman, *Epidemics and War: The Impact of Disease on Major Conflicts in History*, eds (Santa Barbara: ABC-CLIO, 2018), 20.

existing campaigns. On top of their physical susceptibility to the plague, Roman Soldiers lived in tight quarters and barracks returning from the Middle East, thus providing a natural breeding ground for the disease's spread. A lack of a sanitary environment proved deadly, facilitating an efficient spread of the disease within Rome, the Italian Peninsula, and the empire through its developed networks. This forced the Roman Empire to postpone military campaigns and turn its focus on conscripting soldiers after the Parthian Campaign, such as the Marcomannic Wars against Germanic and Gothic Tribes lasting from 166 to 180 A.D. Postponing these campaigns revealed internal weaknesses to Rome's opponents, thus providing an opportunity for these belligerents to take over bordering Roman territories without abilities for advancing the fronts. In grim reality, Rome's military consisted of around 150,000 men after the Parthian Campaign, but the plague decimated and gradually "De-Romanized" the military such that freed enslaved people, criminals, and mercenaries were hired into the legions. During the plague, Roman Scholars emphasized that the army was almost extinct during the outbreaks of 168 and 172 A.D alone, to the point that Emperor Marcus Aurelius armed the Diogmitae, hired German Auxiliaries, and employed gladiators as soldiers.²⁵ Not only were the profession and loyalty of these mercenaries questionable in safeguarding the Empire's security, but the conscription amount itself was unable to restore Rome's military might. These questionable soldiers rebel against orders and limit campaign efficiency, impairing overall progress instead of contributing like former legions. At the same time, German tribes started to provoke and gradually encroach upon Roman territories across the Rhine River for the first time, leading to a lack of border security that demanded more dispatchment. More dispatched directly correlates to more conscription, paid wages, and investment in national security, which were heavily restricted

²⁵ François Pachoud, *Historia Augusta, Volume II*. (Harvard University Press, 2022).

during the plague due to an overall decline. Politically, the Antonine Plague reformed bureaucratic traditions, destabilized Roman traditions, and led to more frequent violent changes in power. As the plague worsened, gladiator fights and festive carnivals were canceled by Aurelius, raising concerns about the political changes within the Empire. By tradition, only a man from an affluent family who is at least a third-generation Roman Citizen can work in the government; under Aurelius, Romans without social background were recruited to administrative positions based on his Stoic Philosophies and a grim reality — depopulation within the elite class. The pandemic affected all social classes, leading to a destabilized meritocracy and the loosening of power from the “Five Good Emperors” era into dark centuries for the Empire.

After the plague ended, the Roman Empire was left with a deteriorating economy, unpopular pagan religion, declining social welfare, and unstable territorial control, resulting in political instability from the third to the fifth century. After the Antonine Plague, the Empire’s citizens experienced increased taxation of the remaining population, debased currency, border upheavals, civil insurgencies, and other crises. These long-lasting effects, worsened by succession problems and the greed of military leaders for power, undermined the Roman political institutions as the social problems and uncertainty in policies weakened the Empire’s ability to maintain control.

Conclusion

Today, the end of another global pandemic COVID-19 encourages reflections on, to some degree, the first known pandemic in the world. The Antonine Plague was often overlooked in historical studies compared to seemingly more significant diseases, such as the longer time span and implication of the Justinian Plague, the remarkable renovation period after the Black Death and the WWI game changer of the Spanish Flu. Meanwhile, though conventional associations of the fall of the Roman Empire with Diocletian reforms, barbarian invasions, and the declining centralization of religiousness and politics are true, the Antonine Plague marks the Empire's history as a notable turning point. Such a black swan incident set a foundation for military upheavals and collapse, religious conversion to Christianity, and remnants of economic problems never tackled successfully. These unfavorable changes and an uncertain political climate contributed to the Empire's unavoidable decline that ended the Pax Romana and deported the Roman Civilization towards three centuries of crisis, division, and hopelessness for the years to come.

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