

Archaeology
of Crisis

Edited by Staša Babić

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Archaeology (in Times) of Crisis

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ANCIENT EPIDEMICS: STRENGTHS AND LIMITATIONS OF ANCIENT SOURCES AND THE (BIO)ARCHAEOLOGICAL APPROACH

Abstract: The main idea of this paper is to present two different approaches in researching social responses in times of major health crisis in the Roman Empire. By dealing with the written sources and the (bio)archaeological remains concerning the Antonine and Cyprian Plagues, we shall try to understand the strengths and limitations of these complementary perspectives. We will point out the advantages and weaknesses of both disciplines – archaeology (including bioarchaeology) and classical philology. Finally, we will offer conclusions that lean towards interdisciplinarity and contextualization of the material.

Keywords: Antonine Plague, Plague of Cyprian, written sources, bioarcheology, contextualization

Introduciton

The World Health Organization (WHO, 1946¹) defined health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Every incident of infirmity in a society has dual agency: biological, pertaining to the pathological changes of the bodies of those afflicted, and social, which encompasses the behavior

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1 Preamble to the Constitution of WHO as adopted by the International Health Conference, New York, 19 June–22 July 1946; signed on 22 July, 1946, by the representatives of 61 States (Official Records of WHO, no. 2, p. 100) and entered into force on 7 April, 1948. The definition has not been amended since 1948.

of the afflicted and their community, which is in turn influenced by the cultural patterns of behavior particular to that society. Outcomes of a disease depend on both the pathogen and the social response of the community, but barring an epidemic, modern medicine is much more focused on the biological aspects (disease) than on the social ones (illness). By separating the disease from illness we are left with an incomplete picture of the health of both an individual and a population, as defined by WHO. Most studies of health in archaeology fall under the purview of paleopathology – a subdiscipline of bioarchaeology which studies osteological evidence of human and animal diseases from archaeological contexts (Katzenberg and Saunders, 2007). Paleoepidemiology, on the other hand, examines the etiology of a pathogen, but it also includes investigation of the causal relationship between the disease, demographic, social, and cultural factors in archaeological contexts (Pinhasi & Turner, 2007; Gordis, 2000). Health, being a complex concept, needs an interdisciplinary approach, especially when our subject of investigation is a population which perished a long time ago. In the last decade a growing number of researchers has issued a call for change in the way we study health of past populations, with emphasis on careful contextualization of a disease and analysis of both the biological and social aspects of it (DeWitte, 2014; Klaus, 2014; Tanner et al., 2014; Temple & Goodman, 2014). In this paper we will endeavor to understand the strength and limitations of two different approaches to the study of societal response to two great epidemics (Antonine and Cyprian's plagues) that struck the Roman Empire in the 2nd and 3rd century AD – archaeology (including bioarchaeology) and classical philology.

The Antonine Plague (165–180 AD) struck the Roman Empire during the “golden age,” when the Roman Empire was vast, well urbanized, and very well connected (Harper, 2017). Population growth and movement, landscape transformation (deforestation, river relocation, and swamp drainage) could have exposed the Romans to natural disasters and new emerging pathogens (Harper, 2017, p. 17). This pestilence has been suspected to have been either smallpox or measles, but the true cause still remains undetermined (McNeill, 1976, p. 93). Many authors who deal with this topic see the Antonine Plague as one of factors that contributed to the decline of the Western Roman Empire.

The Plague of Cyprian (251–270 AD) added to the misery of the *Crisis of the Third Century* – a time when barbarians kept attacking the frontiers of the Empire and traditional political elites were replaced by a series of provincial and military emperors. The Roman Empire was debilitated by the monetary collapse and citizens were burdened with heavy taxes intended to maintain the imperial army. Its appearance amplified the religious tensions in the Empire and all the upheaval contributed to mass

spread of Christianity (Harper, 2015, 2016a), as it seems that the combination of pestilence and persecution hastened the spread of the Christian religion (Harper, 2017, p. 155).

The Power of the Written Word

Written sources (when we have them) are often presumed to be more reliable than archaeological artefacts (Baker, 2013, p. 6). This attitude is in part due to the differences in disciplines of history and archaeology – texts are more likely to have been written about important events and by and for a certain social class, while archaeologists are just as likely to analyze everyday mundane activities as they are to study the elites. Even though there are many archaeological findings – like medical instruments, votive offerings, structures for healing and sanitation, charms, and human remains – medical history is largely text-based. Texts are invaluable sources of information, but they too should be studied as any other artefact. They need to be contextualized and analyzed for social, geographical and temporal context, fragmentation, possible mistakes in transcription and translation, biases of the author, intended form and audience, and lastly our own cultural biases that might impact the way we interpret the text (Hodder, 2007; Baker, 2013). Most studies into great plagues of the ancient world are based heavily on texts, partly because they were published by historians (Bruun, 2007; Harper, 2015, 2016a, 2016b, 2017), but also because clear mortuary evidence of epidemics are rare, and furthermore because the bioarchaeology of the Roman Empire has only recently started to reach for its full potential (Killgrove, 2014; McCormick, 2016). Ancient sources are not absolute “truth” and should be always read and used with a grain of salt.

The most prominent source for studying the Antonine Plague (sometimes referred to as the Plague of Galen) is certainly Galen, a famous Roman doctor of Greek origin, as it gives us information about the spread of the disease and its symptoms. A couple of Galen’s contemporaries wrote about the epidemic: Publius Aelius Aristides, the pious worshiper of Asclepius, gives an account of how his household was ravaged by the pestilence in his text *Sacred Tales* as a gift for his salvation (Aristid. *Or.* XLVIII, pp. 38–44; McNeill, 2017, pp. 65–66), and satirist Lucian of Samostata criticized authors who wrote encomia upon Lucius Verus after his victory over Parthians saying that one of them in his account of the plague in Nisibis imitated Thucydides’ description of the Athenian plague (Luc. *Hist. Conscr.* 15). Later authors (Tab. 1) also dealt with the Antonine Plague, mostly in passing. Herodian of Antioch tells us that the worst situation was in

Rome – the city was overcrowded and suffered great loss of both men and animals (Hdn. XII). Cassius Dio inform us that 2000 people died daily in Rome during this pestilence which, in his opinion, was the greatest of all (Cass. Dio. LXXIII, 14). In the biography of Marcus Aurelius (SHA) we read that bodies were taken away in carriages and buried by strict laws; the emperor erected statues to the most prominent deceased and organized funerals for the poor (SHA, Marc. XIII, 3–6).

In the biography of his co-emperor Lucius Verus, there is one interesting account on how the plague began. In the temple of Apollo in Babylon a soldier opened the golden casket so the *spiritus pestilens* flew out and spread over Parthia and the rest of the world (SHA, Verus, VIII, 1–3). A similar account comes from Ammianus Marcellinus whose story about the plague outbreak goes like this: the troops took away the statue of Apollo Comeus from his shrine in Seleucia, and brought it to Rome where the priests put it in the Palatine temple of Apollo. During the plundering of the Seleucian temple, the pestilence came out from a crack, and spread from Persia to the Rhine River and Gaul (Amm. *Res gest.* XXIII, 6, 24).

Table 1. List of sources for the Antonine plague

1.	Galen	129–200/216.
2.	Lucian of Samostata	125–180.
3.	Aelius Aristides	117–181.
4.	Cassius Dio	155–235.
5.	Philostratus	170–247/250.
6.	Herodian of Antioch	170–240.
7.	<i>Scriptores Historia Augusta</i> (biographies of Lucius Verus and Marcus Aurelius by Iulius Capitolinus	late 3 rd and early 4 th century
8.	Ammianus Marcellinus	330–391/400.
9.	<i>Epitome de Caesaribus</i>	end of 4 th c.
10.	Saint Jerome	342/347–420.
11.	Eutropius	363–387.
12.	Orosius	385–420.

Even though it had fallen into almost complete oblivion among scholars of antiquity, there are many literary sources for the Plague of Cyprian (Tab. 2). The pestilence began in Ethiopia and spread north and west across the empire, raging for fifteen years (Zonar. *Epit. Hist.* 12. 21; Evagr. Schol. *HE* 4. 29). We do not have medical records like Galen's con-

cerning this plague, but Cyprian's descriptions are also detailed (Cypr. *De mort.* 8; 14), although the main aim of his sermon *De mortalitate* as the bishop of Carthage was to console the Christian community and ennoble the victims of the disease, comparing their suffering to that of the martyrs. In particular, Cyprian is fighting against the religious persecution of Christians for spreading the plague. On the other side, for example, polytheist Porphyry sees the cause for the plague as punishment of Asclepius and other gods for the lack of faith and expansion of the Christian sect (Eus. *Praep. Ev.* 5. 1. 9).

In the biography of Emperor Gallus, we read that the alleviation of the plague was sought in Sibylline books and a sacrifice was made to the Jupiter Salutaris (SHA, *Gall.* 5. 5). We could say that the ancient mind, pagan or Christian, perceived the plague as divine anger. The Antonine Plague revived the cult of Apollo, while the Plague of Cyprian allowed Christianity to spread around after the foundations of ancient civic polytheism were cracked (Harper, 2017). According to K. Harper, in the period between the 2nd and the early 4th century, the estimated number of Christians changed massively, as could be witnessed by a sudden spread of Christian personal names (Harper, 2017, p. 155). Numerous sources claim that the plague struck every house (Oros. *Hist. adv. pagan.* 7. 21. 5–6; Pont. V. *Cypriani* 9); it hit the largest cities in the Roman Empire but also arrived to the remotest places affecting pagans and Christians alike (Cypr. *De mort.* 8). High mortality has also been reported (Oros., *Hist. adv. pagan.* 7. 27. 10) (5000 died daily in Rome and in the cities of Greece) (SHA, *Gall.* 5. 5) so by arranging burials for the poorest the emperors gained popularity (Aur. Vict. *De Caes.* 30. 1–2).

Table 2. List of sources for the Plague of Cyprian based on Harper's researches (Harper, 2015; 2016):

1.	Dionysius of Alexandria	early 249
2.	Cyprian of Carthage	252
3.	De laude martyrii	252–253
4.	13 th Sibylline Oracle	before 253
5.	Pontius of Carthage	after 258
6.	Porphyry	c. 301
7.	Chronograph of 354	325–337
8.	Aurelius Victor	360–361
9.	Eutropius	369
10.	Gregory of Nyssa	380
11.	Jerome	c. 380

12.	<i>Scriptores Historiae Augustae</i>	late 4 th c.
13.	[Aurelius Victor]	after 395
14.	Orosius	416–17
15.	Talmudim	4 th or 5 th c.
16.	Zosimus	early 6 th c.
17.	Peter the Patrician	mid-6 th c.
18.	Jordanes	551
19.	Ps.-Dionysius of Tel Mahre	c. 775
20.	George the Monk	late 9 th c.
21.	<i>Excerpta Salmasiana II</i>	10 th c.
22.	Symeon Logothete	late 10 th c.
23.	George Kedrenos	c. 1100
24.	John Zonaras	12 th c.

From just a cursory glance at the papers and books written on both plagues, it becomes clear that the Antonine Plague captured far more attention from historians, classical philologists, and archaeologists than the Plague of Cyprian. In fact, until K. Harper published his first work on the Plague of Cyprian in 2015, hardly anyone else had written anything about it. This discrepancy is even more curious when we compare the abundance of historical sources on the Plague of Cyprian (Harper, 2015, 2016a, 2017) to the significantly smaller number of those pertaining to the Antonine Plague (Harper, 2017). The reasons for this difference might be various, but we would argue that most of them stemmed from the perspectives and the authors of the studies in question.

Aside from Galen's record (which is only a couple of pages long), there are only a few other contemporaneous sources on the Antonine Plague. The rest of the sources are of later date – so they had to rely on previous works and witness accounts. The apparent preference for the Antonine Plague might be tied to the inclinations and preconceptions of the researchers; the historical sources might be sparser, but they include texts written by the most famous ancient Roman doctor, which lends them gravitas and relevance. Cyprian's description of the plague comes from a sermon, a religious source concerning the position of Christians in the disrupted society as much as the illness itself. Giving the context of the Crisis of the Third Century and the position of Christians, Galen's medical text could appear much more objective than a sermon written by a bishop in times of hostility towards his flock. Crisis of the Third Century might be another reason why the Plague of Cyprian failed to step into the limelight – with political, monetary, and social upheav-

als ravaging the Empire, the plague was left in the background, almost a part of the scenery, only commented on in passing. The choices and biases of the researchers led to almost complete disregard of an event which was, by all accounts, historical and archaeological, just as impactful as the Antonine Plague.

The Archaeology of an Epidemic

Archaeological finds employed in the analysis of ancient health can be studied through architecture, images, human remains, and small finds. Contextualization is key, but with keeping in mind that our modern ideas about health and sanitation were not practiced in the Roman Empire in the same way. Public baths and toilets, aqueducts and the sewage system, the existence of public doctors and *valetudinaria* in military camps, might compel us into thinking that our perception of public health and hygiene was not that different, so finding a privy just next to or inside a kitchen in the home of a wealthy Pompeian is quite a jarring argument against such thinking (Baker, 2013; Harper, 2017, p. 81). Small finds like medical instruments are a good example of the dangers of limiting our thinking to our expectation of what medical instruments should and could be used for. They are usually divided into surgical instruments (scalpels, specula, forceps, etc.) and toilette instruments (tweezers, ear probes, spoon and spatula probes), i.e. tools used by professionals (doctors) and tools used by everyone for their daily hygiene and beauty regimes (Baker, 2013). This classification was made by archaeologists who compared Roman instruments with modern day ones, assigning them functions, places, and roles with little support from ancient texts and disregard for the possible multifunctionality of each tool, and the general attitude that they are uniquely Roman objects used only in Roman medicine, even when found in the farthest parts of the Empire (Baker, 2013, p. 90).

Studying health through osteoarchaeology has a set of limitations due to the very nature of the skeletal remains. First, skeletal series are cumulative (unless we have a highly specific context, i.e. a burial place used only for victims of a violent event or an epidemic) and they are made of the most unhealthy individuals of each age cohort (Milner, Wood, and Boldsen, 2007; Porčić, 2016). The population we get from a necropolis is not a representative snapshot of a living population; it is the result of a series of transformations: LIVING → DEAD → BURIED → PRESERVED → FOUND → COLLECTED → STORED. When dealing with cremated remains, while paleopathological analysis is possible, it is much more

restricted and difficult, and the chance of finding a trace of a disease is further reduced. Second, no matter how serious an infection, bone tissue involvement takes a long time, which is why most of the diseases an osteologist can diagnose are chronic conditions. Acute infections usually kill the afflicted before his bone system has any sort of response, so they remain invisible to us. Keeping this in mind, J. Wood and his colleagues defined *The Osteological Paradox* which states that the skeletal remains with no pathological changes could have belonged to the sickest and weakest members of the population who were killed by the disease in such a short time that no lesions formed on the skeleton (Wood et al., 1992; DeWitte and Stojanowski, 2015). This is particularly pertinent to the investigation of epidemics, since the victims of the disease do not have any visible traces of the pathogens on their skeletons, so we have to heavily rely on context of the burial and the nascent discipline of paleomicrobiology (Pinhasi & Turner, 2007; de Souza et al., 2003).

Most of the archaeological evidence tied to the Antonine Plague are also text related – building dedications (Duncan-Jones, 1996), dedications to gods and goddesses (Jones, 2005), protective amulets (Jones, 2016), and coins (Duncan-Jones, 1996). Exploring the impact of the Antonine Plague to the Empire, R. Duncan-Jones (1996, p. 125) argued that there was a cessation of imperially-funded building during the reigns of Marcus and Commodus (compared to the reigns of other emperors) caused by the epidemic. For his analysis he relied heavily on the inscribed dedications of the buildings that were dated to the reigns of the aforementioned emperors, excluding literary and archaeological evidence, as well as inscriptions with a more broad “mid-2nd century” dating (Bruun, 2007). And while other authors (Bruun, 2007; Horster, 2001) also remarked on a decreased number of public building dedications in this period, as always when evidence is “lack of evidence” it is impossible to tie it to any one cause: limitations of the chosen sample, the amount of builds done by previous emperors, imperial self-glorification and *damnatio memoriae* (Bruun, 2007), and the apparent lack of any public building strategy – the emperors usually reacted to a need when erecting/repairing structures (Horster, 2001).

Evidence of a religious response noted in ancient sources were also found in archaeological material – as dedication to gods and goddesses connected to the oracle of Apollo of Claros. They were incorporated into walls of private houses or public buildings, presumably to provide protection from the calamity, and have been found spread out in the Western part of the Empire (the easternmost point was a dedication from Dalmatia) (Jones, 2005). A protective amulet found in London was also tied to Apollo of Claros – it was meant to protect a certain Demetrios with an

added warning from the god himself that kissing should be avoided (Jones, 2016, p. 471) as a measure of stopping the spread of the epidemic. These dedications could be interpreted as the proclamation of Marcus Aurelius to publicize the oracle he consulted because of the plague (Jones, 2005, p. 301) and the intensification of the cults of Apollo and other “old gods.” Coins were employed in similar fashion during both epidemics: the name of the goddess Salus appears as a legend on coins minted during Marcus Aurelius’ reign on two occasions, once at the beginning of the emperor’s reign – for its long duration – and again in the years between 169 and 171 AD, a time-frame which corresponds with the timing of the plague (Duncan-Jones, 1996, p. 130). During the Plague of Cyprian, Trebonianus Gallus minted coins (251–253 AD) with an image of himself wearing a laurel wreath on the obverse and Apollo with a laurel on the reverse, and the inscription APOLL-SALVTARIS (Mattingly, 1946). Apollo has a dual nature as a protean god who causes the epidemics, but also provides relief with his healing powers. His image serves as assurance that the laurel-crowned emperor has his blessing and will thus protect the people from the plague, but also as a reminder that it was Apollo’s wrath that caused it in the first place (Mattingly, 1946; Manley, 2014).

But what about the victims? Ancient sources are consistent in their claims that many lives were taken by both plagues, and historians, even though not everyone agrees on the exact number, assure us that it was significant (Harper, 2017). So far, only four mass graves have been linked to these plagues – a mass grave in Gloucester is interpreted as a consequence of the Antonine Plague (Simmonds, Marquez-Grant & Loe, 2008), and two mass burials in the catacombs of San Pietro e Marcellino in Rome (Blanchard et al., 2007) and the funerary complex of Harwa and Akhimeru in Thebes, Egypt (Tiradritti, 2015), were probably results of the Plague of Cyprian. However, for events with such high mortality, the small number of funerary contexts connected to them is quite conspicuous, and probably more related to the hard boundary between archaeology and bioarchaeology rather than to the inherent limitations of the disciplines. Bioarchaeology is still in many cases (but not always) seen as separate from archaeology, a tool for the analysis of skeletal remains, without much use for wider contextual analysis, by both archaeologists and bioarchaeologists. In the study of ancient Roman contexts bioarchaeology has only now started to gain its footing – human remains were not given priority in the past, and modern methodologies have been employed more regularly only in the last couple of decades. Even in cases when the bioarchaeological analysis was done, the reporting is often incomplete and easy to misinterpret. In the analysis of the mass burials from San Pietro e Marcellino

catacombs, authors caution us that many of the skeletons were too damaged to be sexed or aged, but that the percentage of male skeletons was unusually low (27.5%), without providing us with the number of skeletons that could not be determined as male or female (Blanchard et al., 2007, p. 996). They also highlighted a predominance of “young adults” without any explanation of the term “young adult” which is not a standard age category in bioarchaeology. These demographic markers are important for any paleoepidemiological study, and could lead us to wrong conclusion about the patterns of morbidity and frailty in a society. Moreover, due to the scarcity of similar findings, these results are being reported and included in analyses of other authors, often taken at face value, especially by researchers unfamiliar with bioarchaeology (Mitrofan, 2014, p. 10). To be fair, the divide between archaeology and bioarchaeology is not the only reason behind the lack of human remains that can be connected to these two plagues. Acute infections which could lead to death in a matter of days do not leave any pathological changes on the skeleton that we could analyze. Furthermore, we should not assume that epidemics always produce mass graves. Any other type of significant deviation from normative burial – specific body treatment, different funerary rites, traces of burning and soot, individual graves separated from the rest of the necropolis, etc., could potentially be caused by an epidemic event, although they are much harder to connect with any certainty to a specific public health crisis. We should also keep in mind the possibility that a society will strive to hold on to normalcy by employing the usual funeral customs until they completely run out of capacity for it (O’Shea, 1984, p. 32). Mass graves would always be the absolute last resort, even in times of a pandemic. That being said, we could argue that a significant number of the people who fell victim to these plagues were probably buried according to the usual custom based on their social status in the place they would have been buried anyway. This, coupled with the fact that acute infections usually kill the victim before affecting the skeletal system, makes searching for potential plague victims very hard.

Analysing Ancient Public Health

When studying such a complex subject as public health in the context of ancient cultures, the first hurdle the researcher has to face is the fact that modern ideas about health and hygiene are vastly different from those upheld by the Romans. Public health is both influencing and influenced by human behavior and social and cultural norms, which can be illustrated by the population of Japan wearing masks every flu season and the

rising anti-vaccination movements in Western countries propped up by human and religious rights. In ancient Rome, consideration for salubrious environment and health and cleanliness was both religious and practical (Porter, 2005). The practicality of sanitary architecture was in large part an expression of an ideal of both spiritual and material purity and cleanliness pushed for and provided by the elites (Porter, 2005). When studying ancient health we must be aware that their actions were not only informed by their understanding of causes of maladies but by their understanding and views on hygiene and cleanliness as well. During both the Antonine Plague and that of Cyprian, most of the identified evidence can be tied to questions of religion and hybris. For the Romans, as we can find out from written sources, the culprit for both plagues was hybris – in the second century calamity escaped from the plundered temple of Apollo Claros⁹ and spread through the Empire, while the Plague of Cyprian was the punishment inflicted to the Empire because of the spread of the Christian cult and abandonment of the cults of the “old gods”¹³. The responses were similar – dedications to the gods and goddesses through inscriptions, coins, amulets, and erected statues, even when the circumstances were different, emphasizing the significant ties between religion and health and well-being for the Romans. The biggest difference between these two plagues seems to be in our own biases towards the veracity of ancient texts and their authors. Even though we can see that for the Romans illness was inextricably connected to the sacred, our modern assumptions that illness is the purview of doctors and medicine, caused the discrepancies in the visibility of these epidemics. Galen’s medical text seems to carry far more weight than Cyprian’s sermon for our modern medical reasoning.

Concluding Thoughts

The research of ancient texts has a much longer history than archaeology, so naturally both classics and history have more numerous and detailed studies on ancient plagues. Surprisingly or not, ancient sources are still largely seen as a more reliable and relevant means to exploring past epidemics, despite their limitations. Texts are, in their essence, artefacts as well, and they need to be analyzed accordingly – their contextualization is crucial. We need to be aware of the biases of the authors/transcribers of the texts and the researchers employing them in their analysis – how Galen might have been perceived as more “objective” than Cyprian and how that perception might have influenced the research of these two epidemics. Archaeological and bioarchaeological evidence should be used as more than a mere illustration of the ancient sources and employed in a more in-

terdisciplinary and contextualized manner together with the said sources. Given the limitation of each discipline (inherent to it or self-imposed by the attitude of the researchers) the study of ancient plagues cannot afford to merely pilfer results from other fields of study without critically assessing them first. We need to reevaluate if, for example, texts regarding one place have been unjustifiably applied to a far away part of the Empire, or if mass graves are the only contexts in which we should expect plague victims as opposed to a number of “deviant” burials scattered across the provinces that might be tied to the calamity among other things, etc. Although in recent years some steps have been made to bridge the gulf between these disciplines and provide us with a more complete picture of ancient plagues, true interdisciplinarity still lacks. We can only hope that with the development of new methods and points of view interdisciplinarity will be applied more habitually in the future.

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АНТИЧКЕ ЕПИДЕМИЈЕ: МОГУЋНОСТИ И ОГРАНИЧЕЊА АНТИЧКИХ ИЗВОРА И (БИО)АРХЕОЛОШКОГ ПРИСТУПА

Апстракт: Главни циљ овог рада је да сагледа два различита приступа у истраживању промена у друштву изазваних кризом јавног здравља у Римском царству. Бавећи се писаним изворима и био(археолошким) остацима који се тичу Антонинске и Кипријанове куге, покушаћемо да разумемо могућности и ограничења ових комплементарних перспектива. Указаћемо на предности и слабости обе дисциплине – археологије (укључујући биоархеологију) и класичну филологију. На крају ће бити изнети закључци који нагињу ка интердисциплинарности и контекстуализацији материјала.

Кључне речи: Антонинска куга, Кипријанова куга, писани извори, (био) археолошки остаци, контекстуализација

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