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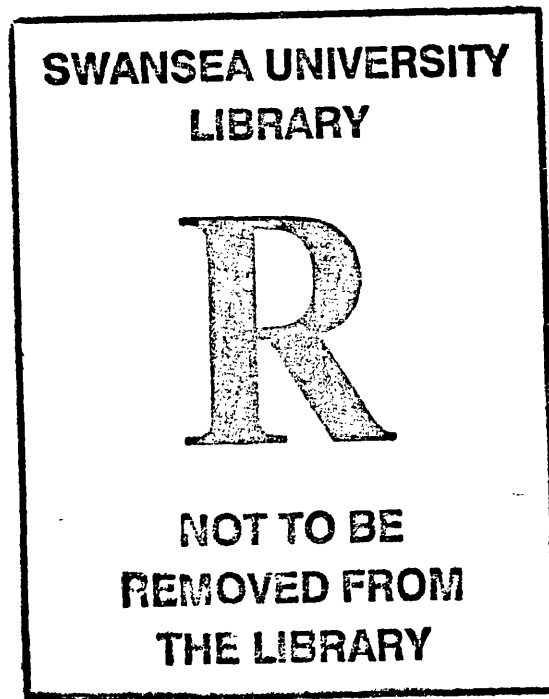
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Fire and its consequences in the city of Rome in antiquity, 390 BC – AD 410

Volume I: The Text

Richard Byles

8/7/2013



Submitted to the University of Wales in fulfillment of the requirements for the Degree of Master of Philosophy



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Abstract

This thesis is a systematic examination of fire in the city of Rome in the period 390 BC-AD 410. The principal aims of the work are; to show the reasons behind the outbreaks of fire in antiquity; the uses of fire in the city, as well as how fires started and spread both within a structure and within the city generally; the damage fires could cause, both physically (to the city and its inhabitants) and mentally; the aftermath of a fire and how Rome recovered; and, finally, the equipment of the *vigiles* and how they used this to fight fires in the capital.

This research is, perhaps inevitably, interdisciplinary, drawing on evidence from literature, inscriptions, and archaeology. All three sources of information reveal different aspects about fire and, taken together, they enable us to construct a much more complete picture of the phenomenon. Other sources of information are needed to complement the ancient evidence. As such, this study draws on both comparative historical material and modern theoretical studies of various aspects, most importantly the study of fire dynamics.

Ultimately this research aims to take a broad overview of the issue of fire in the city of Rome in antiquity, and place it in the emerging field of social history, by bringing the reality of the impact of this problem of urban living on the ordinary inhabitants of the city to the fore.

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Preface

One of the principal themes of this study, and the one that I am most interested in, is the impact of fire on the inhabitants of an urban settlement. I should make clear at the outset that I have never been the victim of a fire. However, people I know have been (including my maternal grandparents) and seeing or hearing of their reactions to a certain extent inspired aspects of this work. To itemise every inspiration behind this study would be a meaningless exercise, but suffice to say they are numerous and varied.

The work itself is the result of three years of research at Swansea University. I am indebted to a number of people for all their hard work and support (as well as putting up with me for all that time!). I am most indebted to my supervisor, Dr Nigel Pollard who has guided me through the perils and turbulent waters of my research and kept me focussed on the task at hand. I would also like to thank Prof. John Morgan for facilitating my learning the Greek language by making his classes constantly entertaining and Prof. Ceri Davies for giving me a deeper understanding of Latin. Special mention and thanks must go to Mrs Lee Poole, departmental secretary, who has been supportive in far too many ways to enumerate them all here.

I am indebted to a number of other people for more personal reasons. Miss Jacqui Walsh and Mrs Lynda Horgan deserve special thanks both for employing me as an exam invigilator (thereby providing me with the financial resources to keep my research going) but also for being there to listen to me rant when things were not going well. Also, everyone on the Menswear department at Debenhams, Swansea, who have all had to put up with me talking about this for the last couple of years! My two best friends Rich Hughes and Ieuan Evans: their support has been priceless. My long-suffering wife Tanith, without whom this would never have been finished. To my parents and my Nan: their love and support has been essential, and they have provided much needed food parcels when I have been going hungry or running low on coffee! And, finally, to my grandfather Fred Wiltshire, someone who inspired so much in my life and who I never had the chance to thank for everything.

Richard Byles
Swansea
22 August 2012

Introduction

“Therefore, because of the discovery of fire, there arose at the beginning, concourse among men, deliberation and a life in common. Many came together into one place, having from nature this boon beyond other animals, that they should walk, not with head down, but upright, and should look upon the magnificence of the world and of the stars.”

Vitruvius 2.1.2.

Vitruvius summarises the importance of the discovery of fire to mankind as being the foundation on which society and civilisation were built. While this idea has merit and Vitruvius rightly highlights the positive aspects of fire, this work considers an aspect of fire not discussed in this passage, namely its destructive nature. The histories of the Roman world, and Rome in particular, are littered with references to the occurrence of fire (whether merely a brief note or a detailed exposition of a specific fire) but no ancient work survives which deals with this issue in a comprehensive manner. Modern works on the topic of fire are also lacking, the subject mostly being dealt with as part of the wider subject of urban hazards. This work aims to address this lack.

Aims

The fundamental aim of this work is to provide a systematic examination of fire in the city of Rome in antiquity, from the Gallic sacking of the city in the early fourth century BC until the Gothic sack in the early fifth century AD. Although this study is focussed primarily on Rome, it does draw on evidence from other towns and cities throughout the Roman Empire in order both to supplement the evidence from the capital, and to fill gaps where such evidence is unavailable.

Some scholars say that Rome was struck by fire often and that the principal reasons for this were due to the widespread use of fire and extensive timber construction.¹ However, the lack of a systematic examination of these two issues

¹ E.g. Carcopino 1941: 44; Morris 1994: 64; Croke 2005: 70.

means that such an argument is unverifiable. There are also no models of how a fire might break and spread within a room, building, and the wider urban landscape of the city. As such, this work aims to address this lack and build a framework for the discussion of these various issues. The first aim is to analyse the root factors leading to fires in the city of Rome, whether a fire started due to accident, arson or warfare, in so far as is possible within the limitations of the source material. Where we do know the root cause of the fire, we can use these to help build a picture of how a fire might start, and how it develops from a small fire concentrated in one place to a widespread urban conflagration.

The second aim is to provide a broad overview of how fire was used in the capital. This has not been undertaken in a systematic way before, although work on a variety of the connected issues has been done, typically in the context of general discussions of urban living or specific discussions of work that involved fire often without discussion of the concomitant risks this entailed. When the fire risk posed is discussed, it is usually in isolation. For example, the health risk posed to metal smiths by using fire without a more general discussion of fire risks.² The third aim is directly connected with this one, and that is to model how a fire might break out. It is important to understand how a fire ignites, spreads within its initial confines, usually a room in a building, and then from this into the wider structure and the urban landscape of Rome more generally.

The fourth aim of this research is to analyse the damage a fire could cause. This encompasses the destruction of buildings within the city, as well as the harm a fire could inflict on people. The latter topic includes consideration of flame and smoke injury, as well as those caused by falling debris, often a result of a building losing its structural integrity. I also aim to make some comments regarding the psychological trauma inflicted on survivors and the *vigiles*, the people who were exposed most frequently to the horrors of a fire. An associated issue is how Rome recovered from a major fire. This includes a number of different topics, such as providing food and shelter for homeless survivors, clearing up and rebuilding the damage caused by the fire, and compensating people.

² Burford 1972: 72-75; Rehder 2000: 113-114.

The final aim is to examine the role of the *vigiles* in fighting fires in the city. An important aspect of this is assessing the equipment connected with fire fighting in the ancient world and to develop an understanding of whether and how these various items were used in suppressing fires. This will enable us to construct a model of how the *vigiles* might have fought fires. An associated problem is whether the *vigiles* were responsible for suppressing fires themselves, or for organising the inhabitants of the city in fighting the fire. The answer to this question may lie somewhere between the two.

Evidence

What evidence is there from the ancient world that will permit discussion of the issues raised above? There is a good deal, albeit quite widely dispersed, but inevitably the study is interdisciplinary, drawing on literature, inscriptions and archaeology. The references to fire at Rome found in the extant literature and inscriptions are collected together in two appendices at the end of this work. The aim here is to provide an overview of the evidence, an understanding of the strengths and weaknesses, the issues and limitations, in order to weave together all these disparate pieces of evidence to build a picture of fires at Rome. The discussion is divided into three sections, in the same manner as the evidence itself, namely literature, inscriptions and archaeology.

Literature

Roman literature provides us with lots of useful information concerning fires in the capital. It gives us information regarding the dates and destructiveness of particular fires, occasionally with additional details such as the length of time a fire lasted, how it might have started, and whether any atmospheric conditions had an impact on the fire. It also provides occasional information on the people affected by fires. The surviving legal texts also provide an insight into the challenges posed by fire and that the Romans felt could be dealt with through legislation, at least on some level.

There are a number of challenges posed by the ancient literature. The greatest is that no work survives that specifically discusses the issue of fire or the Romans' understanding of its workings and hazards. Authors mention fire and sometimes talk about it at length, but there is no single work devoted to it. As such, references to fire

are scattered throughout a variety of different works, of different genres, written by a multitude of different authors with a variety of different aims.³ Discussing and describing fire in detail is not the specific aim of any of these authors. They are most likely to consider fires that affected the city on a grand scale, or fires with political causes or implications. They are not really interested in ordinary lives apart from as a backdrop to these, or the technical details, as these tend to bog down the literary character of a text.

The different genres provide a variety of different information on fires. Historical works, for example, tend to mention fires if a prominent public building was destroyed or if the fire resulted from warfare or civil unrest. This is concordant with the principal interests of most ancient writers of history, namely warfare and politics. For example, Livy writes of the fire associated with the Gallic sack of Rome, as the importance of the fire is relevant to the debate he includes regarding whether to stay and rebuild on the site of Rome, or move to Veii.⁴ Similarly, Tacitus and Cassius Dio both write about the fire of AD 64 due to the extensive nature of the destruction caused by this.⁵ Chronicles, like the late antique source Jerome, tend to write brief entries of the major events in a given year. Therefore, they tend only to mention those fires that were on a scale large enough or unusual enough to be noteworthy. For example, Jerome records the fire in the Colosseum caused by a lightning strike because this fire was both devastating and unusual.⁶ The final principal genre is biography. The authors of this genre, such as Suetonius and the *Historia Augusta*, tend to discuss an outbreak of fire when it reveals something about the character of an emperor. For example, when discussing the fire of AD 64, Suetonius focuses more on Nero's behaviour and actions (or lack thereof) rather than the fire itself.⁷

Other genres of literature besides history and biography furnish us with issues and problems caused by fire. The surviving legal texts, particularly the *Codex Theodosianus* and the *Digest*, reveal some of these. These cover a large array of different issues connected with fire. For example, laws survive concerning whether a man can be prosecuted for pulling down his neighbour's house when his own is

³ These disparate references are collected together in Appendix I.

⁴ Livy 5.50-55.

⁵ Tacitus, *Annals*, 15.38-41; Cassius Dio 62.16.1-18.5.

⁶ Jerome, *Chronicle*, 296b.

⁷ Suetonius, *Nero*, 38.

threatened by fire;⁸ the punishment of individuals caught looting from a fire;⁹ the requirement that individuals living on the upper floors of buildings should keep a supply of water ready in case of fire;¹⁰ and the space to be kept empty around buildings to protect them from fire.¹¹ This is only a limited sample.

However, while both of these legal codes are useful sources of information there are problems with them. The principal one with the *Digest* is that the juristic opinions it contains tend to focus primarily on the legally problematical rather than the ordinary.¹² Also, the manner in which it was compiled in the sixth century AD, principally a compilation of second and third century AD legal opinions, is perhaps distorting due to the selectivity of the compilers. A similar problem occurs for the *Codex Theodosianus*. Here the laws are often rescripts written by emperors in response to questions of clarification or interpretation of certain issues from subordinates.¹³ However, these are often detached from their original context meaning that there may be some distortion in these laws caused by the compilers. With the legal codes it is important to remember that laws are not passed for theoretical situations but due to the occurrence of specific problems. There should be no doubt that the issues raised in these codes were real problems affecting Rome.

Likewise, the letters of Pliny the Younger, the satirical poetry of Juvenal and Martial, and Petronius' *Satyricon* all reveal aspects of fire or issues related with it. In Pliny's case this is due to a fire occurring in one of the cities (Nicomedia) under his purview as governor of Bithynia-Pontus, and asking the emperor Trajan to approve the creation of a fire brigade there as a preventative measure against future fires.¹⁴ Pliny's account provides further information regarding how people might have acted when a fire broke out, and the role of nature during a fire. Juvenal, Martial and Petronius mention incidents involving fire. The first two authors satirise individuals burning

⁸ *Digest* 9.2.49.1 (Ulpian, *Disputationum*, 1); *Digest* 43.24.7.4 (Ulpian, *Edictum*, 71); *Digest* 47.9.3.7 (Ulpian, *Edictum*, 56).

⁹ *Digest* 47.9.1.pr (Ulpian, *Ad Edictum*, 56); *Digest* 47.9.5.pr (Gaius, *Ad Edictum Provinciale*, 21); *Digest* 48.6.3.3 and 5 (Marcian, *Institutionum*, 14).

¹⁰ *Digest* 1.15.3.4 (Paul, *De Officio Praefecti Vigilum*, 1).

¹¹ *CTh.* 15.1.4; *CTh.* 15.1.38; *CTh.* 15.1.46.

¹² Humfress 2005: 167-168.

¹³ For the method by which the laws were gathered together, see Matthews 1993; Errington 2006: 87 and 92.

¹⁴ Pliny, *Epistulae*, 10.33.

down their own properties; in Juvenal perhaps to exploit the patron-client relationship;¹⁵ in Martial perhaps to defraud the state.¹⁶ Juvenal also mentions how people in *insulae* were affected by fire.¹⁷ Petronius mentions the *vigiles*, and has them accidentally summoned to the dinner of Trimalchio by a trumpet blast, bringing an end to this as they smash the door in and proceed to try and put out a non-existent fire.¹⁸ All of these are interesting, but the satirical aims of these authors mean that they cannot always be taken at face value.

A further challenge is the fragmentary or incomplete nature of the source material at certain times. For example, during the third and fourth centuries AD there is a lack of sources. Once Cassius Dio's history reaches its conclusion in the early third century AD, there is no historical work until that of Ammianus Marcellinus in the fourth century AD. Even with Dio, some of his work only survives in epitomes and these preserve few details, meaning that even our knowledge of the second century AD is incomplete. As such, there are few references to fires in the capital during the third century AD, despite the fact that these probably continued to occur. Even with Ammianus Marcellinus' history in the fourth century AD, our knowledge of fires in the capital is limited. He mentions only two, and provides scant details of either of them; one is only dated vaguely.¹⁹ This reflects the interests of the author, and the dwindling importance of Rome at this time, rather than reflecting a lack of fires in the capital at this time. The one source that does mention fires during the second and third centuries AD, the *Historia Augusta*, is a singularly problematic source.²⁰ The issues with this source are principally associated with the date and reliability of these biographies.²¹

The incomplete nature of the source material does not just affect our knowledge of the final few centuries of this study, but also the early period. For example, Livy is our principal source for the history of the early Republic. However, he records only one significant fire at Rome during the fourth century BC, when Rome was sacked by the Gauls in 390-385 BC.²² The next one he records is around a century and a half

¹⁵ Juvenal, *Satires*, 3.212-222.

¹⁶ Martial 3.52.

¹⁷ Juvenal, *Satires*, 3.197-202.

¹⁸ Petronius, *Satyricon*, 79.

¹⁹ Ammianus Marcellinus 23.3.2 (AD 363); 27.3.4 (after AD 365).

²⁰ For example, a fire during the reign of Antoninus Pius (HA, *Antoninus Pius*, 9.1) and one in AD 283 (HA, *Carus, Carinus and Numerian*, 19.2).

²¹ See, for example, Barnes 1972: 152-153; Bird 1976: 123-127.

²² Livy 5.41-43.

later.²³ How do we account for this large gap? Does it reflect reality (which seems unlikely), the limitations of the information to which Livy had access, or simply the selectivity of the author? Most probably, it reflects the nature of the information Livy had for the early history of Rome, basic sources that recorded major events (such as the *Annales Maximi*) of a given year. Presumably only those fires that had a major impact on the city were deemed worthy of record in such sources. Livy was writing during the reign of the emperor Augustus (27 BC – AD 14) and, therefore, several centuries after the first fire with which this study is concerned. This does not necessarily cast doubt on Livy's reliability as an author, but it does mean we need to treat his work with caution and look for inconsistencies in his reporting in order to ascertain its usefulness.

Inscriptions

There are a number of inscriptions that record fires at Rome, principally due to these recording the restoration of buildings in the aftermath of fires. These were collected through a search on the Clauss-Slaby epigraphic database. This yielded a total of twelve inscriptions.²⁴ These inscriptions are often very brief, none more so than the following:

Senatus populusque Romanus / incendio consumptum restituit

The Senate and people of Rome restored [this] when it was consumed by fire.²⁵

Many of the other surviving inscriptions provide more information than this, although few contain details about the fire or the extent of the damage – what needed restoring, how much damage was inflicted on the structure, and so forth. However, this is not a surprise as this was not the intention of these inscriptions. They were there to commemorate primarily the individual who restored the building and the restoration of the building itself. It was not just buildings that were restored; two of these inscriptions commemorate the restoration of statues that were destroyed as a result of fire, one the statue of Silvanus, the other the statue of Minerva.²⁶ An interesting point about the

²³ The next fire mentioned is in 241 BC. See Livy, *Periochae*, 17.

²⁴ These are collected in Appendix II.

²⁵ *CIL* 6.937.

²⁶ *AE* 1995, 175; *CIL* 6.526.

latter of these is that it records that the statue of Minerva was destroyed by a fire set during civil unrest.

While revealing interesting information, there are some drawbacks of these sources. It is not their brevity that is the problem, but rather the patchy and chance nature of their survival. Those from Rome never record the restoration of more than one building making it difficult to link these with known fires, as well as impairing our ability to gauge the extent of the fire that destroyed the structure. There is at least one inscription from elsewhere in the Roman Empire where we are told of a number of buildings destroyed, meaning that we can a fairly destructive fire based on this evidence. This inscription is from Narbonne and records the destruction by fire of three buildings and the furniture associated with one of these; a fourth building or some other feature destroyed by the fire was in the text originally, but that part is now missing.²⁷

Archaeology

Archaeological evidence is very useful for certain aspects of this work and this type of evidence can be divided into three categories. The first is the topographical knowledge of Rome in antiquity. This can help us to locate particular fires and attempt to plot their extent on maps of the city. Such a task is particularly useful for the fire of AD 64, as it reveals the extensive nature of this fire and suggests the level of destruction it must have caused.²⁸

The second category is the physical remains left behind in the archaeological record following fires. This covers both excavated evidence of fire damage and rebuilding following this, and the visible restoration of structures connected with fire. There are a number of examples of the former discussed later in this study, and as such a brief summary will suffice here. The most important ones from Rome are both fairly recent examples. Panella's excavation of the *Meta Sudans* fountain and *Curiae Veteres* sanctuary reveal significant destruction and rebuilding connected with the fire of AD 64; this included the raising of the ground level by 4-5 metres.²⁹ Similarly, Manacorda's excavation of the area of the *Crypta Balbi* reveals fire damage to the *Crypta* itself and the adjacent *Porticus Minucia Frumentaria*. The pavement of this area

²⁷ *CIL* 12.4342.

²⁸ This is discussed in more detail in Chapter 2.

²⁹ Panella 2011. This is discussed in greater detail in Chapter 3.

was also raised as a consequence of the fire, primarily by sealing rubble underneath this. This damage is connected with the fire of AD 80.³⁰ This information is further complemented by discussion of fire damage from Roman Britain, from the city of Verulamium and the remains of the villa at Fishbourne.

The best example of the restoration of a structure as a consequence of fire is that of the Colosseum following a lightning strike and subsequent conflagration in AD 217. As there is a detailed discussion of this later in the study, a brief summary will suffice here. The remains of the Flavian amphitheatre confirm the account of Cassius Dio that a lightning strike and fire did serious damage to the building.³¹ However, they also reveal in stark detail the exact nature of this damage and how they went about restoring the building following this in the Severan period. It is relatively easy to distinguish between the original parts of the building and those that were restored.³²

The final category of archaeological remains is that relating to domestic architecture and need not necessarily be connected with fire. For example, there is extensive archaeological material relating to domestic architecture and the materials used in construction. There is a variety of information from various cities in Roman Italy concerning this, at places such as Pompeii, Herculaneum, Ostia and Cosa.³³ Other works include the location of different types of features that used fire, both in a domestic context and in the wider urban landscape. There are also more specific archaeological works, dealing with some aspects that have a bearing on this research, that are discussed in detail at appropriate places in this research.³⁴

A final brief point to make regarding archaeological evidence is that it can allow us to ascertain the minimum peak temperature a fire reached, dependent on the nature of the surviving remains. For example, in the excavations revealing the fire damage at Verulamium, melted glass was noted amongst the debris. Depending on the exact nature of its composition, glass does not melt until around 1400°C.³⁵ This allows us to

³⁰ Manacorda 2001. See also *NTD*, s.v. Area Sacra di Largo Argentina; *LTUR*, s.v. Feronia, Aedes; Claridge 2010: 215-219. This is discussed in greater detail in Chapter 3.

³¹ Cassius Dio 79.25.2-3.

³² Lancaster 1998. This is discussed in greater detail in Chapter 3.

³³ See Carrington 1933 and Ling 1997 (Pompeii); De Kind 1998 (Herculaneum); Packer 1971 (Ostia); Bruno and Scott 1993 (Cosa). There are also general works on building materials such as Blake 1947 and Adam 1994.

³⁴ E.g. Mols 1999 on the wooden furniture found at Herculaneum.

³⁵ This is discussed in greater detail in Chapter 3.

posit a minimum peak temperature for this fire. The same is true at Fishbourne, where the excavations revealed puddles of lead where the fittings in the roof had melted; again, this allows us to posit a minimum peak temperature of 327.5°C, the temperature at which lead melts.³⁶

Modern scholarship

A number of works have been written on the topic of fire. For example, Werner and Canter compiled lists of fires recorded in the literature, the former focussing on the Imperial period, the latter covering both the period of the Republic and the Empire (390 BC-AD 425).³⁷ Van Ooteghem also discussed fires at Rome in a very general way.³⁸ There are also a number of important works on other key aspects important to this research. Works on the *vigiles*, Rome's fire brigade, fall into this category. Baillie-Reynolds' work is a key starting point for this and is very useful despite its age, which means it lacks analysis of recent discoveries.³⁹ Sablayrolles' more recent examination complements Baillie-Reynolds' well, as it incorporates new material and collects together all the inscriptions relating to the *vigiles*.⁴⁰ There are other important works on the *vigiles*, although these tend to focus on specific aspects relating to the corps; Rainbird's analysis of the archaeological remains of their *castra* at Ostia falls into this category.⁴¹ A useful work connected with these is Lafer's research on fire-fighting conducted by *collegia*.⁴² There are a number of other works that are important to this study, but these are the principal ones; these other important works are discussed below.

There are a number of ways that this work differs from those mentioned above. The principal one is the scope of this work. Werner and Canter, for example, primarily wanted to draw together all the literary source material for fires in the capital; neither appears to have intended to do anything more or to use this evidence as a starting point for deeper analysis. This study builds on these works by mining the literature for information beyond the simple notification of a fire and any damage associated with it,

³⁶ This is discussed in greater detail in Chapter 3.

³⁷ Werner 1906; Canter 1932.

³⁸ van Ooteghem 1960.

³⁹ Baillie-Reynolds 1926.

⁴⁰ Sablayrolles 1996.

⁴¹ Rainbird 1986.

⁴² Lafer 2001.

for example, by compiling information regarding the origins and impact of fires. Similarly, works on the *vigiles* tend to confine their discussions to the history and equipment of the corps, as well as what evidence exists regarding them. Little is said about how they actually undertook the task of fighting fires that occurred in the capital, something this study aims to do by building a model of how fights might be fought by the *vigiles*. The other key way this work differs from other types of modern scholarship on fire is that this study uses works that were not written with the intent of engaging with the issue of fire, but which can be used to study a number of aspects of it.

Discussions of fire tend towards one of two positions. The first is where fire forms part of a more general discussion of urban living, alongside discussion of such issues as crime, sewage, and the food and water supply. A number of works do this including Robinson's work on the administration of ancient Rome, Scobie's work on the nature of housing and sanitation in the city, as well as a number of others.⁴³ The other position is where scholars discuss a specific fire, or even a specific aspect of one. Most of these works revolve around the fire of AD 64.⁴⁴ For example, the discussion of who was to blame for the fire is a common one. These often form part of larger works on Nero, although there is at least one work dedicated to this alone.⁴⁵ Other important discussions are Daugherty, who discussed the role of the *vigiles* during the fire of AD 64; Newbold, who discusses its social and economic effects; and Panella, who discusses specific archaeological damage caused by the fire of AD 64.⁴⁶ There are works that discuss other fires, although there are far less of these than ones regarding the fire of AD 64. For example, Tucci's discussion of the loss of Galen's research during the fire of AD 192, or Lancaster's discussion of the damage caused to the Colosseum by the lightning strike and subsequent fire in AD 217, as revealed by the archaeological remains.⁴⁷

Other works that are important to this research are those that were not written with the intent of engaging with fire, but which can be used in such a discussion (and, indeed, are used in this research in this way). There are a number of different works that deserve consideration. Mols' catalogue and discussion of the wooden furniture at

⁴³ Robinson 1992; Scobie 1986. Others include Robinson 1977 on fire prevention at Rome and Hermansen 1982: 207-225 on fire hazards at Ostia.

⁴⁴ Beaujeau 1960 discusses the fire in depth.

⁴⁵ E.g. Bishop 1964; Warmington 1969; Champlin 2003. Böhm 1986 discussed this specifically.

⁴⁶ Daugherty 1992; Newbold 1974; Panella 2011.

⁴⁷ Tucci 2008; Lancaster 1998

Herculaneum is important as it provides an important indication of the type of material that will burn during a fire.⁴⁸ Likewise, Ulrich discusses woodworking in the Roman world and his discussion reveals further wooden features that added to the flammability of Rome in antiquity.⁴⁹ Carrington discusses the materials and construction techniques in use at Pompeii at the time of its destruction in AD 79; such techniques and materials were also probably seen in the capital.⁵⁰ A final important discussion is that of the water supply of Rome, as this has an impact on the ability of the *vigiles* to fight fires in the city, in terms of the delivery of water, its availability, and the seasonal variation in the amount of water reaching Rome.⁵¹

The final types of modern scholarship that need to be discussed are those dealing with the comparative historical evidence, and modern works on fire and disaster. The principal comparative evidence comes from the Great Fire of London in 1666. This is a very useful example for a number of aspects of this study, due to the survival of the diaries of two witnesses to it; namely, Samuel Pepys and John Evelyn. Both of these give us detailed eyewitness accounts into all the aspects of the fire while it was burning, but also provide a wealth of information about the impact of the fire on the city and its inhabitants over an extended period. This example is certainly warranted as Imperial Rome and seventeenth century London possessed similar levels of fire-fighting technology. London had gunpowder, but Rome had both a professional fire brigade and its siphons were much more sophisticated than the water squirts used by those trying to fight the Great Fire (these were giant syringes from which water was squirted onto a fire).⁵²

Modern works regarding both fire specifically and the aftermath of disasters more generally have a part to play in this study. These often reveal avenues of research that would otherwise go unexplored if only the ancient evidence and modern scholarship related to this is used. The most important of these is Drysdale's work on fire dynamics. This is a key work for understanding how fire behaves, as well as revealing other important aspects connected with fire, such as the nature of smoke and

⁴⁸ Mols 1999.

⁴⁹ Ulrich 2007.

⁵⁰ Carrington 1933.

⁵¹ Hodge 1989; Evans 1994; Taylor 2000.

⁵² The principal modern works are Bell 1920; Reddaway 1940; Porter 1996; Tinniswood 2003.

its inherent dangers to those exposed to it for extended periods of time.⁵³ Other key modern works include Curson *et al* and Wisner *et al* discuss the general repercussions of disasters on the surviving population of the city or area that has suffered from them;⁵⁴ Assar and Adams who discuss the sanitary measures that are required as a result of a disaster;⁵⁵ and Morgan and de Ville de Goyet who discuss the aftermath of disasters with regards to the dangers posed by dead bodies, both to survivors and to aid workers.⁵⁶

What is fire?

This may seem a mundane question, but it is central to the thesis. All of us can recognise fire, but fire's scientific and technical characteristics – what it is, how it starts and how it behaves - are not as well known. This discussion is a brief one given the limitations of space and the complexities of fire dynamics, and focuses almost exclusively on features directly relating to this research.⁵⁷ Also, certain aspects are discussed in greater detail later in relation to specific ancient fires. The issue of smoke produced by fires is discussed in a separate section below due its distinctive characteristics, and its impact on people's behaviour during a fire.

What is fire? Fire is the oxidation of flammable material releasing heat, light and various reaction products such as carbon dioxide. The reaction products vary to a certain extent depending on precisely what is being burned. For a fire to start, however, a number of elements are needed. First is a supply of flammable material; then there needs to be an adequate supply of oxygen; there must be enough heat present to cause the ignition of the flammable material; finally, in the presence of these first three components, the fire needs to be able to sustain a chain reaction, usually with the input of additional oxygen and fuel. All of these prerequisites make up what is known to fire fighters and investigators as the Fire Tetrahedron.

⁵³ Drysdale 2011.

⁵⁴ Curson *et al* 1989; Wisner *et al* 1994.

⁵⁵ Assar 1971; Adams 1999.

⁵⁶ de Ville de Goyet 2000; Morgan 2004.

⁵⁷ This discussion, and that on smoke that follows, is based on the work of Drysdale 2011 whose volume on fire dynamics is a key text for fire safety engineers and arson investigators.

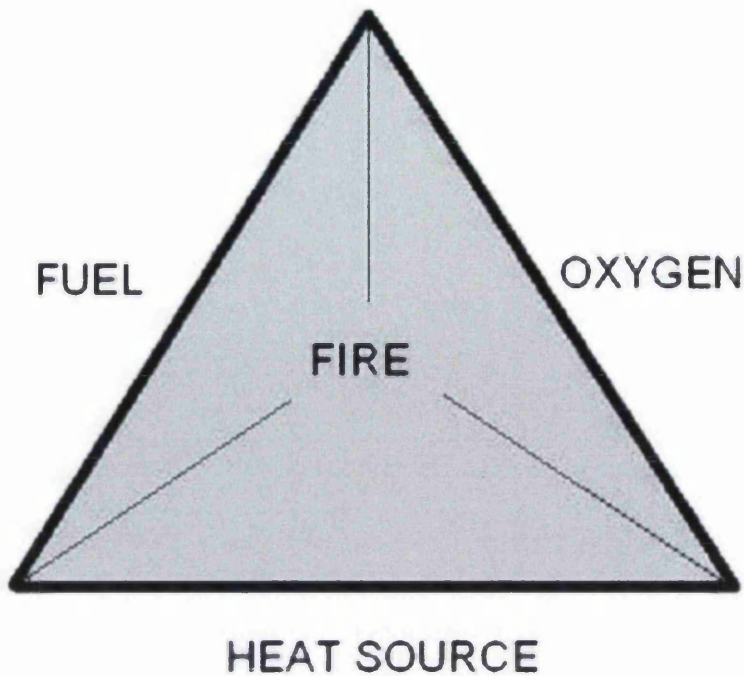


Figure 1: Simplified version of the Fire Tetrahedron (adapted from original diagram at www.fire-fightingind.blogspot.com)

These are the basics of what a fire is and how it starts. How does it behave? This discussion can be divided in two. The first part of fire behaviour is the initial burning phase, i.e. the period immediately after the fire has started. The second section of the discussion concerns when a fire has broken out from its initial confinement into a wider conflagration. The former discussion relates to compartment fires (i.e. a fire confined in a room or similar enclosure in a building) and this initial phase is referred to as the pre-flashover period. Essentially a fire is in this stage when it is still small and burning freely and confined largely to the initial item set alight, as well as perhaps some nearby items, but certainly not burning every available combustible item in the compartment. At this stage, the average temperature is low, but there are high local temperatures in and around the area of the burning zone.

As the object burns a layer of hot smoky gases forms under the ceiling and is pushed downwards as the smoke concentration, thickness and general temperature increase. All of this speeds up the rate of burning and raises the average temperature in

the room. It also promotes flame spread from the initial area to other adjacent combustible items, thereby increasing the area of burning and the rate of generation of fuel vapours. All of this promotes the onset of flashover. This is defined as the transition from a localised fire to a general conflagration within the compartment, where all fuel surfaces are burning. It is also through flashover that a fire spreads from one room or area into the building as a whole, by causing flames to be ejected from the initial room where ignition occurred through available openings (such as doors and windows). The period of flashover is very small, the whole event being similar to an explosion, and following this the fire enters the post-flashover stage. The transition from a fire being one in a pre-flashover state to being in a post-flashover one happens very quickly, but the time leading up to and following flashover varies.

There are three main factors governing this: fuel, weather, and topography. These are often referred to by fire fighters and investigators as the Fire Triangle.

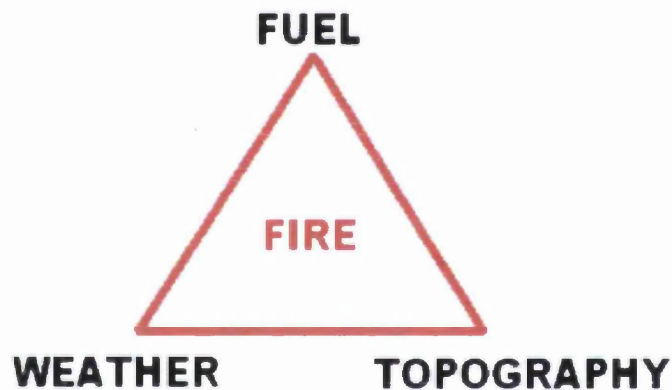


Figure 2: The Fire Triangle (www.forestencyclopedia.net/p/p140/view)

How do these factors affect fire behaviour? The fuel that is feeding a fire causes it to burn and spread in different ways, as well as affecting the production of smoke by the fire. For example, wood burns with a yellow or orange flame and, due to the agglomeration of soot in the air, generally produces smoke that is dense. On the other hand, formaldehyde has a non-luminous flame (in other words, one free of soot) and produces no smoke. Both require different approaches in order to put these types of fires out.

Similarly, different fuels will cause a fire to spread and behave in different ways. Some substances are explosive, while others will smoulder over very long

periods without necessarily breaking into a raging inferno. Even when burning the same fuel fires can behave in different ways. With wood, for example, different types of wood catch fire at different temperatures, while the moisture content of the wood will affect the initial ignition of the fire, how it then burns, and the nature of the smoke produced.

Weather is a very important variable when discussing fires. It can have both a positive and negative impact on a fire. Positive elements in this regards are those that help the fire to spread, while negative ones are elements that slow it down or help it to be extinguished. For example, a strong wind can aid the spread of a fire in two ways.⁵⁸ Firstly, it can help the fire more easily reach unburned fuel, by speeding the passage of the fire front (in other words, by blowing the flames along more quickly). Secondly, it can help the spread of a fire by blowing hot embers into areas otherwise unaffected by the fire, and these areas may not necessarily be positioned along the spread of the fire front. For example, a fire could be burning in a westwards direction unaided by the wind due to it not being strong enough to affect the flame front, but strong enough to carry embers in another direction (say, northwards) and spread the fire there. Negative weather elements slowing the spread of fire can be fog and rain, the high moisture content slowing the spread of the fire by both saturating potential fuel and (if heavy and sustained enough in the case of rain) actually extinguishing the fire.⁵⁹

Weather can even affect the ability of fire fighters to put fires out in non-industrial societies. For example, during the Great Fire of New York in 1835, the ambient temperature was -17C meaning that the Hudson River was frozen over. The fire fighters had to drill holes in the ice in order to give their pumps access to the water beneath, but due to the conditions the water then froze in the pumps and the hoses. They then had to resort to demolition to stop the spread of the fire, causing much more damage than they perhaps would have, all because of the prevailing environmental conditions.⁶⁰

⁵⁸ Strong winds often accompany devastating fires, including that of Rome in AD 64, that of Nicomedia recorded by Pliny the Younger, and the Great Fire of London in 1666. It continues to have a significant impact in the modern era, particularly in relation to wildfires.

⁵⁹ In the May 2009 California wildfires, Chris Hahn, a deputy fire chief, was recorded as saying that cooler temperatures and an ocean fog were helping in containing the fire and needed to continue in order to help fire crews finally extinguish it (<http://news.bbc.co.uk/1/hi/world/americas/8043460.stm>).

⁶⁰ Lankevich 1998: 81-82.

The final factor that can have an impact on fire behaviour is topography. For example, fires burn faster when going up slopes. This is because the flames are closer to unburned fuel higher up the slope and, therefore, pre-heat these making them easier to light when the fire front reaches them. While being a major problem in forest fires, it is even more of a problem in urban ones.⁶¹ When a fire starts on the lower floor of a building, the fire spreads more quickly throughout the structure. In the same way that flames preheat the flammable material above, the hot gases rising from the fire have exactly the same effect and there is less opportunity for these to dissipate into atmosphere, as they often do in forest fires. This high rate of heat transfer makes it easy for a fire to spread quickly through the floors above the fire, although those below the fire will remain relatively undamaged likely until the building loses structural integrity. Within the city of Rome, this may have caused serious problems with buildings constructed further upslope being more susceptible to fire spread from those further downhill.

Smoke

As mentioned above, fires are often attended by smoke. For the purposes of this research, it is presumed that smoke was present at all ancient fires. This is a fair presumption because the substances that cause fires to burn without smoke (e.g. formaldehyde) were either unavailable or not produced and stored in high enough quantities in the ancient world to cause smoke-free fires. Also, given the nature of the other available fuels, if a fire began without smoke, it quickly would acquire it as it reached these other fuel sources.

What is smoke? It is a by-product of fire caused by the agglomeration of soot particles in the air. Smoke will largely dissipate if the fire is outside or in a well ventilated structure. Such a situation is true of the pre-flashover phase of a fire. However, if the area is poorly ventilated and the fire fully developed, smoke will accrue in greater concentrations. This is consistent with the post-flashover phase of the fire.

An important point to consider in relation to smoke is that it is often highly combustible, due to the unburned and partially burned fuel vapours and particulates it contains. This can lead to explosions or explosion-like events (dependent on the nature

⁶¹ Johnson 1992: 22-38.

of the fuel feeding the fire) as well as back draught. This latter phenomenon is where ventilation is provided to fuel-rich smoke, causing the flames to rush outwards from their confinement and use the oxygen provided to them. This phenomenon, therefore, normally occurs when a fire is poorly ventilated, as this allows the atmosphere to acquire more particulates.

Why has the topic of smoke been raised separately to fire? Normally when modern scholars discuss fires in the city of Rome the effects of smoke are ignored.⁶² Indeed to read these discussions, one would believe that the fire was not attended by smoke. This is incredibly unlikely. Also, as said above, smoke causes a specific set of problems on individuals caught in fires. This is discussed at greater length in the work, but some of the key problems are the disorientating effect on individuals, as well as the debilitating nature of smoke caused by the presence of irritants and asphyxiants in the smoke.

From a purely aesthetic point of view, smoke is also incredibly dirty and it is very easy to overlook the impact this would have on structures affected by a fire directly, but also those in the path of the smoke. Beyond the negative aesthetic aspect of smoke is the associated economic one. Smoke could cause extensive spoilage of food and other materials, potentially leading to extensive economic loss, as well as the additional time it would add to clean-up operations. All the spoiled material would need to be moved and disposed of, as well as cleaning the smoke that would accumulate on surviving buildings.

Having established the parameters of the work and completed the analysis of the source material that is most revealing in this study, we must now turn to the systematic analysis of fire in the ancient world. The best place to begin this is with what we know about the reasons behind outbreaks of fire, whether due to accident, arson or warfare, information that is sometimes recorded.

⁶² This is probably because ancient sources do not mention it. The exception is Cassius Dio's account of the fire of AD 64, where he notes the confusing impact of the smoke and shouting on those trying to escape the fire (62.16.5).

Chapter 1: Why do fires start?

There were three main causes of fire at Rome in antiquity. The most common of these was accident. The other two were arson and civil unrest, and warfare. These last two were more dramatic but also less frequent than accident, especially warfare as a cause of fire in the capital. The aim of this chapter is to show that accident was the most common cause of fires at Rome, despite the more dramatic and memorable accounts of arson and warfare. I will examine the evidence for the causes of fire from Rome itself, but supplement this with evidence from other Roman cities where necessary.

To better understand the relative significance of different causes of fire at Rome, a visual representation is provided in Figure 3 (below). The fires are listed under four headings; the three causes to be discussed in this chapter, with a fourth being those fires for which no cause is recorded in the extant source material. There is a brief discussion of this fourth category at the end of the chapter. In total there are 46 source entries for fires in this study. Accident accounts for eight of these, arson seven, and war only three. No cause is listed for the remaining 29.¹

¹ The total number is 47, two more than the total number of source entries. This is because the origins of the AD 64 and AD 192 fires are disputed by the surviving sources.

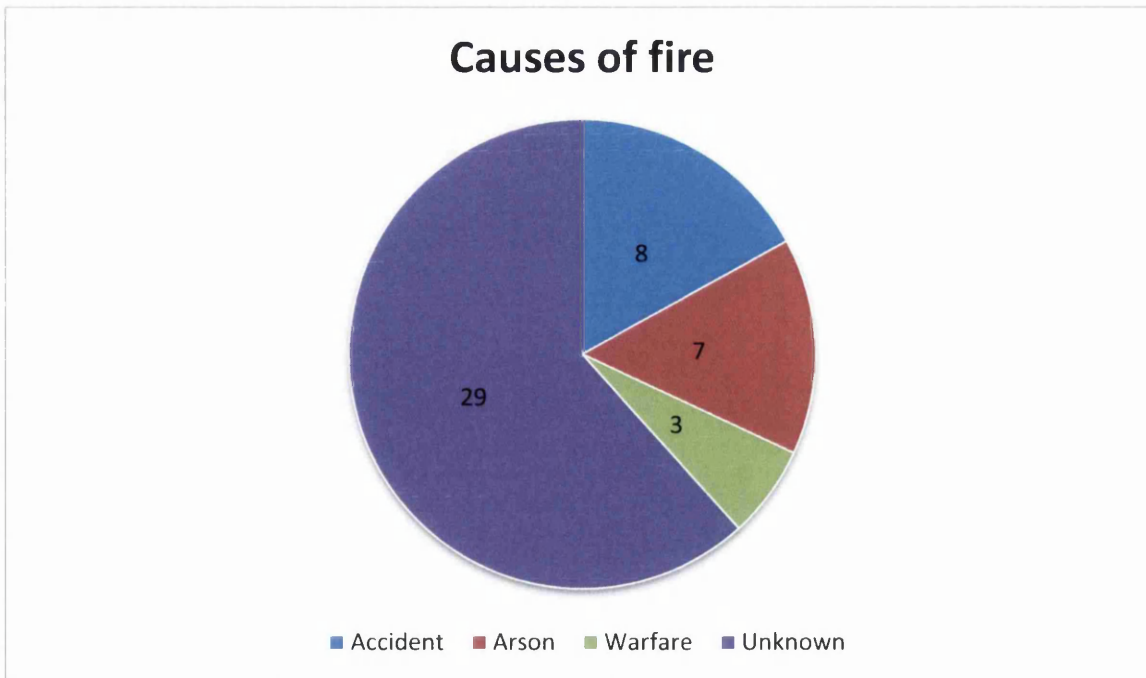


Figure 3: Chart showing the causes of fire

Some analysis of the fires with no recorded cause is undertaken at the end of this work, as such a large number of incidents cannot be passed over without comment. One may wonder what can be said of such fires that is of relevance to this chapter, but we can draw some inferences from some of these accounts regarding possible causes. This task is attempted only where it is feasible and justified to do so.

Accident

Accidents were probably the most common cause of fires at Rome. They account for approximately 44% of the fires mentioned in the source material where the cause is known (17% of the overall total). Indeed, a number of fires are specifically described as having started by accident. Even the fire of AD 64, perhaps the most devastating fire in Rome’s history, is claimed by one source to have perhaps started by accident, although all the other sources state it was deliberate arson.² This is discussed in greater detail below. While some fires are specifically recorded as accidents, the causes of many others are not stated. Can we, therefore, ascribe these fires to accident? Possibly, but I would argue against doing so. If we lack a definite cause of a fire, we should simply record it as unknown even if accident is the most likely cause. However, there

² Tacitus (*Annals*, 15.38) admits the possibility of accident. Pliny, Suetonius, Cassius Dio and Jerome all place the blame for the fire on Nero.

is one simple reason why accidents were the most common cause of fires. No matter how careful, no matter how many preventative measures are in place, if a confluence of the right (or wrong!) factors occur in the same place at the same time, a fire will result.

A number of fires that occurred at Rome in antiquity were clearly the result of accidents. Tacitus provides two examples from the reign of Tiberius. The first *ignis fortuitus* ('accidental fire') required Tiberius to restore the Theatre of Pompey.³ Tacitus does not specify when this fire occurred, but we know from Jerome that it was in AD 21.⁴ Similarly, the fire that struck the Caelian hill in AD 27 was almost certainly an accident, given Tacitus' comment *fortuita ad culpam trahentes* ('they [the people] convert the fortuitous into the culpable', in other words they ascribe blame to something that happens by chance).⁵ If there had been doubt regarding the cause, it is likely that Tacitus (or Suetonius, who also mentions this fire) would have recorded it.⁶

Likewise both the fires of AD 80 and AD 192 were almost certainly accidents. That of AD 80 is described by Suetonius as one of three chance events that occurred during the reign of the emperor Titus, the other two being the eruption of Vesuvius and a plague in Rome.⁷ Likewise, Cassius Dio describes this fire as of divine rather than human origin.⁸ If there had been doubts, it is likely one of these sources would have recorded them. Accident is, therefore, a safe conclusion. Regarding the AD 192 fire, at the end of Commodus' reign, it is likely that this too was accidental. Herodian reports that the fire was considered to have started and ended by divine will, like Cassius Dio's point made concerning the fire of AD 80.⁹ The context of Cassius Dio's account of the AD 192 fire is also suggestive of accident. He reports that the fire began in a dwelling near the Forum of Peace and makes no mention of any specific cause.¹⁰ An accident could easily occur in a domestic setting given the number of tasks in which fire was employed and, again, if there had been the suspicion of something other than accident,

³ Tacitus, *Annals*, 2.72.

⁴ Jerome, *Chronicle*, 254d.

⁵ Tacitus, *Annals*, 4.64.

⁶ This fire is mentioned in Suetonius, *Tiberius*, 48.

⁷ Suetonius, *Titus*, 8.

⁸ Cassius Dio 66.24.2.

⁹ Herodian 1.14.6.

¹⁰ Cassius Dio 73.24.1.

Cassius Dio would probably have recorded it.¹¹ Accident is, again, a safe conclusion here.

It is also possible that the fire of AD 64 was a simple accident, and I would strongly argue this to be the case. Tacitus concedes this point at the beginning of his account with his opening words *forte an dolo principis incertum* ('by chance or the malice of the emperor is uncertain').¹² Although his account is critical of Nero, he does at least allow the possibility of accident, unlike all the other sources. These all blame Nero for the fire and admit no other explanations.¹³ There are other reasons to suggest that this fire was the result of an accident rather than arson. Firstly, it has been calculated from Tacitus' account that the fire began on 19th July (or, more specifically, the night of 18th July).¹⁴ Hülsen noted that astronomical calendars show that 17th July AD 64 was a full moon.¹⁵ This would be a bad time for individuals attempting to commit arson under the cover of darkness.¹⁶ Secondly, fire is an odd choice means of urban clearance, a motive attributed to Nero for arson, as there is no guarantee that it would spread in the direction intended and, once set, all control over it would be lost.¹⁷ As a result, unintended damage might occur. Nero's palace, the *Domus Transitoria*, was destroyed by the fire but, given that it had only recently been completed, it is unlikely that he intended this.¹⁸ The final evidence that this was an accidental fire is the motives ascribed to Nero for setting it.¹⁹ None of these alleged motives are consistent with his actions. If he was setting fire to Rome to end his life, why was he at Antium when the fire broke out?²⁰ Why was he still alive when it ended? Likewise, Nero's concern with fighting the fire, his determination that it should be extinguished and his provision for those affected by it conflict with his alleged motives for starting it, and

¹¹ On the uses of fire, see Chapter 2.

¹² Tacitus, *Annals*, 15.38.

¹³ See Pliny, *Natural History*, 17.1.5; Suetonius, *Nero*, 38; Cassius Dio 62.16.1-18.5; Jerome, *Chronicle*, 265g.

¹⁴ Hülsen 1909: 46. Tacitus, *Annals*, 15.38-41.

¹⁵ Hülsen 1909: 46-47.

¹⁶ Hülsen 1909: 47.

¹⁷ A caveat to this is that fire was a recognised form of urban clearance in antiquity according to a passage in Lactantius (*De Mortibus Persecutorum*, 12.3-5). This is discussed in the section on Arson below.

¹⁸ Tacitus, *Annals*, 15.39. This also argues against the supposed motive that he wanted to clear slum areas.

¹⁹ The alleged motives are Nero's desire to clear the slum areas of Rome (Suetonius, *Nero*, 38); Nero's desire to end his life and the world (Cassius Dio 62.16.1 and Suetonius); Nero's desire to see what the fall of Troy looked like (Jerome, *Chronicle*, 265g).

²⁰ This is revealed in Tacitus' account of the fire (*Annals*, 15.39).

suggest that he may, in fact, have been innocent after all.²¹ All of this is circumstantial evidence for declaring this fire an accident, but the weight of the evidence exonerating Nero is greater than that implicating him.²²

Before moving on to discuss cases of arson, two natural phenomena that could cause fires need to be discussed. These are lightning strikes and earthquakes. The first can cause fire by directly striking buildings in the city.²³ Lightning falls into two categories; cloud flash and ground flash. The latter is when a bolt of lightning strikes the ground and it is this type that concerns us here.²⁴ In the ancient world, lightning was considered an omen or the work of the gods, whether signifying their approval or anger at a course of action.²⁵

A number of fires at Rome started as a result of lightning strikes. For example, Cassius Dio tells us that the temple of Quirinius was damaged by a fire caused by a lightning strike in 49 BC; this fire also damaged a number of other buildings in the city.²⁶ Similarly, a lightning strike was the cause of a fire that destroyed the Gymnasium in AD 62, during the reign of the emperor Nero. The fire was so hot that it melted a bronze statue of Nero into a shapeless mass of metal.²⁷ Herodian suggests that the fire at the end of Commodus' reign, in AD 192, was caused by lightning.²⁸ However, caution needs to be exercised in this instance as Herodian himself offers an alternative explanation for the cause of the fire, and Cassius Dio offers a different explanation again.²⁹ However, the possibility of lightning must have been something Herodian's readers would have recognised, otherwise Herodian's motive for suggesting

²¹ For the relief measures, see Tacitus, *Annals*, 15.39 and 42. These are discussed in greater detail in Chapter 5.

²² There will always be doubt, given the doubt in the extant literature, and this is reflected in opinions regarding Nero's guilt and innocence. Beaujeau 1960: 11-13, Bishop 1964: 77-78, and Warmington 1969: 124 all exonerate Nero. Böhm 1986: 401 and Champlin 2003: 191 condemn him. Hülsen 1909: 47 declares the fire an accident and clears Nero by implication.

²³ For an overview of the physics of lightning, the dangers it can cause, and the precautions used in the modern world to defend against it, see Uman 1969.

²⁴ Wallace and Hobbs 2006: 254.

²⁵ For example, Pliny the Elder (*Natural History*, 28.4.14) relates how King Tullius Hostilius was killed by a lightning bolt and how this was punishment for his failure to conduct a religious ceremony correctly. Similarly, Cassius Dio (41.14.1-3) records a number of lightning strikes hitting the Temple of Jupiter Optimus Maximus in 49 BC and how these were interpreted as omens of Pompey's imminent defeat.

²⁶ Cassius Dio 41.14.3. The temple had also been struck by lightning in 206 BC, but it is not clear how much damage resulted or indeed whether there was a fire at all at this time (Livy 28.11.4).

²⁷ Tacitus, *Annals*, 15.22.

²⁸ Herodian 1.14.2.

²⁹ Herodian (1.14.2) also suggests an earthquake as a cause of the fire. Cassius Dio (73.24.1) suggests the fire was an accident that started in a house.

this is very odd. The clearest example of a fire caused by a lightning strike at Rome is that which struck the Colosseum in AD 217. This occurred during the brief reign of the emperor Macrinus and the fire that resulted caused significant damage to the building, rendering it unusable for a number of years.³⁰ Cassius Dio's account implies that the building was reduced to little more than ash, but it is clear from the archaeological work done that the damage to the building, while extensive, was not as extreme as Dio suggests.³¹ Lightning was not a cause of fire at Rome alone. For example, John of Nikiu records that the fire that struck Antioch in AD 525 was the result of a lightning strike.³² Like the fire of Rome in AD 192, however, alternative explanations for this fire were put forward in antiquity.³³

How much of a problem was lightning as a cause of fires at Rome? It certainly was the reason for a number of fires. Those fires that did result led to significant damage, but not every lightning strike caused a fire. It is probable that there were more fires that began because of this than are recorded in the city, given its topography and the tendency to build extensively on Rome's hills. Typically they are only recorded if a significant temple or public building was damaged or destroyed.

Fires are often a threat following a destructive earthquake. Indeed, they can often be the cause of more damage and loss of life than the earthquake itself.³⁴ This is true in a number of well-documented modern examples.³⁵ However, these were the result of a number of features of modern cities (e.g. the presence of gas, electricity and petroleum) that were not present at Rome. Indeed there is only one fire recorded at Rome that began because of an earthquake. This was the fire of AD 192, which Herodian records was possibly caused by an earthquake.³⁶ However, several alternative explanations are recorded, and it is possible that the fire was not the result of an

³⁰ For the damage, see Cassius Dio 79.25.2. For the reconstruction, see HA, *Heliogabalus*, 17.8; *Alexander Severus*, 24.3.

³¹ Lancaster 1998: *passim*. This is discussed in greater detail in Chapter 3.

³² John of Nikiu, *Chronicle*, 90.24.

³³ Evagrius Scholasticus, *Ecclesiastical History*, 4.5 suggests that an earthquake was the cause of the fire.

³⁴ Assar 1971: 17.

³⁵ For example, the fires following the San Francisco earthquake of 1906 (Berlin 1980:195-200; Winchester 2005: 261-271) and the Great Kwanto earthquake of 1923 (McGuire 2005: 143-144) were the primary cause of the widespread damage and large loss of life.

³⁶ Herodian 1.14.2.

earthquake at all.³⁷ However, it must have been something that was plausible to Herodian's readers for him to include it as a possible cause.

Despite the lack of examples from Rome itself, there are examples of earthquakes causing fire elsewhere in the Roman Empire. For example, the fire of AD 525 at Antioch was possibly the result of an earthquake; Evagrius Scholasticus asserts this, although his account is disputed by John of Nikiu.³⁸ Tacitus associates fires with earthquakes in his account of a severe earthquake that struck Asia in AD 17.³⁹ Strabo also connects fires and earthquakes.⁴⁰ However, how much of a problem was this at Rome? Certainly earthquakes striking Italy might be felt at Rome and the tremors could cause an oil lamp (for example) to be knocked over and cause a fire. However, these were infrequent enough that they were not a significant cause of fires at Rome.

Arson

Arson is the act of deliberately starting a fire to cause damage and for the purposes of this study excludes those started in wartime. Cases of arson account for approximately 39% of the total where the cause of the fire is known (15% of the overall total).

Arson was committed for a number of reasons. One motive for starting a fire was to commit theft, something mentioned in the *Digest*:

Incendiarium capite puniuntur, qui ob inimicitias vel praedae causa incenderint intra oppidum: et plerumque vivi exuruntur.

Arsonists who start fires within a built-up area for enmity or for gain are subject to capital punishment; generally, they are burned alive.⁴¹

Although this is the only law that specifically links starting a fire with theft, such events must have occurred often enough for a law to be passed. There are other laws that associate fire with theft, but none of them implies that those committing the theft started the fire. There are three other laws in the *Digest* that discuss the punishment of looters

³⁷ Herodian also suggests lightning was to blame. Cassius Dio 73.24.1 suggests an accidental house fire as the cause.

³⁸ Evagrius Scholasticus, *Ecclesiastical History*, 4.5; John of Nikiu, *Chronicle*, 90.24.

³⁹ Tacitus, *Annals*, 2.47.

⁴⁰ Strabo 12.8.18.

⁴¹ *Digest* 48.19.28.12 (Callistratus, *De Cognitionibus*, 6).

at the scene of a fire.⁴² These laws do not assume that such individuals started the fires in question, but there is an assumption in the *Digest* that they did so in some cases at least. As far as I am aware, there are no surviving examples that discuss this specifically. The closest is Cassius Dio's account of the fire of AD 64, where he accuses the *vigiles* and other soldiers of looting rather than fighting the fire.⁴³ Dio does not accuse either of actually setting the fire, merely of benefiting from it, but it does reveal the sort of situation that might lead people to start fires in the hope of gain.

The poetry of Martial and Juvenal suggest an unusual form of arson. The poem of Martial reads as follows:

*Empta domus fuerat tibi. Tongiliane, ducentis:
abstulit hanc nimium casus in urbens frequens.
Collatum est deciens. Rogo, non potes ipse videri
incendisse tuam, Tongiliane, domum?*

You had bought a house, Tongilianus, for two hundred thousand. An accident, all too common in Rome, took it away. A million was subscribed. I ask you, Tongilianus; couldn't it look as though you set fire to your own house?⁴⁴

Before analysing this, we need to look at Juvenal's account of something very similar to that described by Martial:

*Si magna Assaraci cecidit domus, horrida mater,
pullati proceres, differt vadimonia praetor.
Tum gemimus casus Urbis, tunc odimus ignem.
Ardet adhuc, et iam accurit qui Marmora donet,
conferat impensas; hic nuda et candida signa,
hic aliquid praeclarum Euphranoris et Polycliti
aera, Asianorum vertera ornamenta deorum,
hic libros dabit et forulos mediamque Minervam,
hic modium argenti. Meliora ac plura reponit
Persicus orborum lautissimus et merito iam
suspectus tamquam ipse suas incenderit aedes.*

If the grand mansion of Assaracus has been destroyed, then his mother is in mourning and the nobles are in black and the praetor adjourns his hearings. That's when we lament the disasters of Rome and that's when we detest its fires. Before the flames are out, someone's already rushing

⁴² *Digest* 48.6.3.3 and 5 (Marcian, *Institutionum*, 14); *Digest* 7.9.1.pr (Ulpian, *Ad Edictum*, 56); *Digest* 47.9.5.pr (Gaius, *Ad Edictum Provinciale*, 21).

⁴³ Cassius Dio 62.17.1.

⁴⁴ Martial 3.52. This is discussed in Watson 2003: 301-303.

up to offer marble and contribute building materials. They'll bring gifts: one man some gleaming nude statues, another a masterpiece by Euphranor or bronzes by Polyclitus, antique adornments belonging to the gods of Asia, another books and bookcases and a Minerva centrepiece, and another a heap of silver. Persicus, the richest of the childless, replaces what's gone with more and better things. He's now suspected of setting fire to his own house – and not without reason.⁴⁵

Both of these texts are discussing arson for personal gain, despite some differences between the two. It is possible that both are satirising the exploitation of the patron-client relationship, although this is also similar to modern insurance fraud. The most obvious question that arises immediately is; did such incidents actually occur? This must have occurred at some point, or at least something similar happened, in order that both Martial and Juvenal recorded and satirised it. There would be no humour if it were not familiar in some form. Exploiting the patron-client relationship or committing fraud in such a manner is not likely to be a common phenomenon; this is not seen in other literary genres. Perhaps there was some incident around this time that these two authors picked up on and incorporated into their respective works. Juvenal seems to be satirising the patron-client relationship using fire, rather than the idea of the upper classes starting fires due to *ennui* or pyromania. Fire appears here simply as the means to satirise this exploitation of the patron-client relationship.⁴⁶ Martial's account is slightly more difficult to get to grips with as his account does not suggest compensation coming from clients, but rather being paid out by some central authority, likely the emperor himself.⁴⁷ Martial's account is much more like fraud. Why people undertook such acts is, ultimately, a question that is insoluble.⁴⁸ It is, however, an interesting possibility for arson in the city of Rome.

An interesting use of arson is as a tool for urban clearance, a possibility mentioned above in connection with the AD 64 fire. Lactantius claims that, during the Great Persecution of the Christians in AD 303, Galerius wanted to burn down the church in Nicomedia. However, he was overruled in this by Diocletian who, while acknowledging the viability of the tactic, points out the inherent weaknesses of using

⁴⁵ Juvenal, *Satires*, 3.212-222. This is discussed in Courtney 1980: 183-185; Rudd and Barr 1991: 158-159.

⁴⁶ Courtney 1980: 184 says that Juvenal is highlighting the absurdity of giving gifts to the rich man yet not to the poor.

⁴⁷ This issue is discussed in Chapter 4.

⁴⁸ Although Watson (2003: 301) notes that this crime is almost perfect as it is completely undetectable.

fire.⁴⁹ These were; the danger to nearby buildings; that the instigators lose control of the fire once set; and, that there was no guarantee the fire could be extinguished. Diocletian ends by ordering the church destroyed with axes and other tools.⁵⁰ This anecdote highlights an awareness of fire as a plausible method of urban clearance and cautions against the easy dismissal of the use of fire in such a context.

We now must turn to look at fires associated with civil unrest. Perhaps the best example is the funeral of Clodius in 52 BC. A mob took the body from where it was on display in the Forum Romanum and put it in the Senate House. There they used the benches to form a pyre, lit it, and burned both Clodius' body and the building itself.⁵¹ Presumably the benches in the Senate House were made of wood, given the ease with which Cassius Dio implies this impromptu pyre was lit. There was a similar situation at Caesar's funeral where, upon seeing the body, people lit an impromptu fire, snatched up firebrands from it and went to the houses of the assassins to burn them down, although they were eventually dissuaded.⁵² At times of political turmoil, particularly in the twilight of the Republic, arson was a tactic often employed by members of the various factions.

The conspiracy of Catiline in 63 BC is also interesting with regard to arson. Although no fires were actually set both Cicero and Sallust accuse Catiline and his followers of plotting to start fires in the city.⁵³ Neither author offers any specifics concerning this accusation. Presumably, part of the logic behind this accusation is that Catiline would have used the inevitable confusion caused by a fire in order to carry out his plan. Such confusion can often be found in depictions of fire (e.g. the accounts of the fire of AD 64 in Tacitus and Cassius Dio) although this confusion may be a literary *topos*, it reflects, to some extent, the very real panic a major conflagration could engender. However, this accusation may also reflect, in part, the fear of fire felt by the population (or at least the upper classes?) of Rome.

Ammianus Marcellinus mentions an instance of arson in the city when a mob burned the house of Lucius Aurelius Avianus Symmachus in the Transtiberine region of Rome. This took place sometime after Symmachus' tenure as *praefectus urbi* (AD

⁴⁹ Lactantius, *De Mortibus Persecutorum*, 12.3-5.

⁵⁰ Lactantius, *De Mortibus Persecutorum*, 12.5.

⁵¹ Cassius Dio 40.49.1-3.

⁵² Plutarch, *Life of Caesar*, 68.

⁵³ Cicero, *In Catilinam*, 2.1 and 2.3; 3.4 and 3.9; Sallust, *War with Catiline*, 24.4 and 27.2

364/5) and, according to Ammianus, was a result of the people's anger at Symmachus' statement that he would rather use his wine for quenching lime-kilns than sell it to the people of the city at the price they desired.⁵⁴ Exactly what the people were unhappy with is not clear (although it is possible that Symmachus was hoarding wine and thereby inflating the price) nor is it clear whether his house was burned during the unrest or whether the mob gathered specifically with the intent of burning his house.⁵⁵

There are other examples from Rome, notably the fires set by freedmen prior to the battle of Actium, to protest against Octavian's raising of funds for his campaign by taxing that class.⁵⁶ There are also examples of arson committed in other cities throughout Rome's empire. One of the most notable instances occurred in Antioch in AD 70 and is recorded by Josephus. Titus was in the city at the time of the fire, celebrating his victory over the Jews, and the blame for the fire was placed on them. Josephus asserts that it was actually set by debtors.⁵⁷ Although it could be argued that Josephus was shifting blame for the fire from his co-religionists, the list of buildings destroyed supports his claim. The marketplace, the archives and the public records office were all destroyed and, by burning these, indebted individuals perhaps hoped to escape their burden, or at least ease it.⁵⁸ This is not the only example, but enumerating others will add nothing to the discussion.⁵⁹ They merely show that arson was a fairly common feature of city living in the Roman Empire, although the number of fires that began in this way was much smaller than the number caused by accident.

Before moving on to look at warfare a final question needs to be raised and addressed; how exactly were these fires started? This may seem an obvious question, but nowhere in ancient texts or modern scholarship does anyone actually attempt to answer it. In contrast to the modern world, ancient rioters and arsonists could not use highly flammable substances like ethanol or petroleum to make Molotov cocktails, and therefore they had to rely on simpler methods of starting fires. The example of Caesar's

⁵⁴ Ammianus Marcellinus 27.3.4.

⁵⁵ This is discussed further in Matthews 1989: 416-417.

⁵⁶ Cassius Dio 50.10.3-6.

⁵⁷ Josephus, *Jewish War*, 7.54-62.

⁵⁸ This fire is discussed by Downey 1961: 204-205. He also argues for this interpretation of events, theorising that indebted individuals hoped that, by burning the records office, they could escape their financial difficulties.

⁵⁹ E.g. at Constantinople in AD 404 following John Chrysostom's expulsion from the city (Marcellinus Comes, s.a. 404; *Chronicon Paschale*, s.a. 404; Theophanes AM 5898); at Calama in North Africa in AD 408 following fighting between pagans and Christians (Augustine, *Epistulae*, 91); at Constantinople in AD 409 following a food shortage (*Chronicon Paschale*, s.a. 412).

funeral, where the mob snatched lit pieces of wood from the pyre, is the most likely answer to this problem; carrying firebrands would be the tool by which they started fires.

Warfare

The most dramatic accounts of fire are usually those involving warfare. The accounts that begin and end this study, of the fires caused by the invasion of the Gauls in the fourth century BC and the Gothic sack led by Alaric in the fifth century AD, are both very dramatic. However, while there are these two prominent examples, there are very few others of fires caused by warfare at Rome. Indeed, warfare only accounts for 20% of the fires whose causes are known, and this figure drops to only 6% of the overall total of recorded fires.

As noted, the two most prominent examples of fires caused by warfare at Rome are those involving the sacks of the city, by the Senones in the fourth century BC and the Goths led by Alaric in the fifth century AD. The Gallic sack of Rome occurred between 390 and 385 BC.⁶⁰ Livy's account of the aftermath of the fire suggests that little was left of the city, but earlier on he suggests that the Senones merely burned some houses in an attempt to force the Romans into surrendering.⁶¹ Likewise, the Gothic sack was not as extensive as is perhaps implied by that term. According to both Orosius' and Procopius' accounts, fires were confined to houses and some nearby buildings; Orosius even draws a direct comparison with the Gallic sack and states that the Goths were not as destructive.⁶²

One example from Rome that does stand out, and is worthy of some discussion, is the burning of the Capitol during the civil war between the Vitellian and Flavian forces in AD 69. At this time, supporters of Vespasian in Rome, under the leadership of Atticus and Sabinus, fled to the Capitol after trying to confront Vitellius. According to Suetonius and Cassius Dio, they were attacked by forces loyal to Vitellius who set fire to the area around the Temple of Jupiter Optimus Maximus in order to compromise the defence of those who had taken refuge there. This gave Vitellius' forces an

⁶⁰ For a discussion of the dating of the Gallic sack, see Rosenberger 2003.

⁶¹ Livy 5.41-43.

⁶² Orosius 7.39; Procopius, *Wars*, 3.2.24.

advantage which they pressed home in order to dislodge the defenders. Following this, Vitellius' forces slaughtered the survivors, plundered the temple and then burned it down.⁶³ Tacitus' account disputes that of Suetonius and Dio. He claims that it was uncertain who threw the firebrands that began the conflagration and that the temple was not plundered because the gables or pediments that supported the roof had caught fire and meant the temple burned to the ground.⁶⁴ This was not the first time that the temple had burned in a civil war, as it was also destroyed by fire in 83 BC when Sulla marched on Rome.⁶⁵ However, in this instance it is not clear if the fire in the temple was the result of the civil war, or just occurred coincidentally due to an individual setting the fire unconnected with the forces fighting the civil war.

While warfare was rarely the cause of fire at Rome, it was the cause of fires elsewhere in the Roman Empire. For example, several cities in Britain were burned by Boudicca during her revolt against Roman rule in AD 60.⁶⁶ Likewise, at the culmination of the Jewish Revolt, Josephus records the Romans putting the Temple in Jerusalem, as well as the rest of the city, to the torch.⁶⁷ Sulpicius Severus disputed Josephus' account of the motivations of this act.⁶⁸ Debate has raged in modern scholarship about whether this was a deliberate act on the part of the Romans or whether this was simply an accidental by-product of war.⁶⁹ Similarly, during his assault on Carthage at the culmination of the Third Punic War (149-146 BC) Scipio Aemilianus set fire to the houses lining the three streets leading from the forum to the fortress on the Byrsa Hill to prevent missile attacks on his troops from their roofs.⁷⁰ This example is interesting in that the fire spread much further than intended, causing more damage and significant civilian casualties, and meant that the attack on the

⁶³ Suetonius, *Vitellius*, 15; Cassius Dio 64.17.1-4.

⁶⁴ Tacitus, *Histories*, 3.71.

⁶⁵ Cicero, *In Catilinam*, 3.9; Sallust, *War with Catiline*, 47.2; Tacitus, *Histories*, 3.72; Plutarch, *Sulla*, 27; Appian, *Civil War*, 1.83; Julius Obsequens 57.

⁶⁶ Tacitus, *Annals*, 14.29-37; Cassius Dio 62.1.1.

⁶⁷ Josephus, *Jewish War*, 6.249-270.

⁶⁸ Sulpicius Severus, *Chronicle*, 2.30.

⁶⁹ Thackeray 1929: 45-48 raises doubt concerning the trustworthiness of Josephus' account, but does not pass judgement on whom (if anyone) decided to burn the Temple. Goodman 1987: 237-238, Faulkner 2002: 350 and Sorek 2008: 132 argue that Titus deliberately had the Temple burned. However, in a later work, Goodman 2007: 441 argues there is no reason to doubt Josephus' account of the war council where Titus argues for saving the Temple, suggesting that he did not have it burned deliberately after all.

⁷⁰ Appian, *Roman History*, 8.128.

fortress was delayed while Scipio's troops cleared away debris to clear their passage to the fortress (interestingly using axes, mattocks and hooks).⁷¹

There are also a number of examples of cities being set on fire during the various civil wars that periodically struck the Roman world. One such example is that of the sack of the city of Cremona during the civil war between Vitellius and Vespasian in AD 69.⁷² Once the Vitellian troops defending Cremona were defeated, first in a night battle and then again when their camp outside the city was stormed, we see the first use of fire by the Flavian forces. Their general, M. Antonius Primus, first ordered his troops to set fire to houses outside the city walls in an attempt to persuade the inhabitants to surrender. This was successful and, according to Tacitus, the Vitellian troops and the inhabitants of the city were taken away from Cremona.⁷³ The city was then turned over to the Flavian troops to plunder and it was during this that fires were kindled in the city and it was burned to the ground, with only the Temple of Mephitis surviving.⁷⁴ According to Cassius Dio, it was the Vitellian troops who plundered and burned the city in the confusion of the Flavian attack, although this seems unlikely.⁷⁵ As noted elsewhere, and as is evident from these examples, fire often accompanied the sack of a city.⁷⁶

Unknown causes

Although it might seem an unusual exercise to analyse fires where no cause is listed, it is worthwhile in the case of those authors who write about a number of fires over a period of time. This is particularly worthwhile given that the causes of around 62% of all the fires from Rome are unknown. This is because patterns may emerge within an author's work. There is one fire for which we can suggest a cause, namely that of 50 BC. Julius Obsequens merely notes that the fire was large and destructive, and regarded as an omen, although he does not say by whom; he offers no explanation as to its cause.⁷⁷ However, in his account of the Gothic sack of Rome, Orosius states that the

⁷¹ Appian, *Roman History*, 8.129.

⁷² Tacitus, *Histories*, 3.33-34; Cassius Dio, 64.15.1-2.

⁷³ Tacitus, *Histories*, 3.32.

⁷⁴ Tacitus, *Histories*, 3.33

⁷⁵ Cassius Dio, 64.15.2. Morgan 2006: 213 notes the implausibility of Dio's account.

⁷⁶ E.g. Morgan 2006: 212.

⁷⁷ Julius Obsequens 65

fire of 50 BC was an accident.⁷⁸ In this case, we can add this fire to the list of accidents, despite the length of time between this fire and when Orosius made this statement. It is tempting to suggest that the fires of 178 and 148 BC were also accidents, as Julius Obsequens offers no explanation for either of them.⁷⁹ However, in neither case is there any other evidence to support such a conjecture.

It is very tempting to suggest that every fire recorded in the ancient sources without a direct explanation of its cause was the result of an accident. This is especially appealing with certain sources. Livy is one such source. He records a number of fires at Rome where he offers no suggestion as to the cause. These include the fires of 241, 213, 203 and 192 BC.⁸⁰ Elsewhere, Livy is quick to record, or at least to suggest, that fires were the result of foul play. Such is the case with the fire of 210 BC where, immediately after his discussion of its effects, he launches into the details of the investigation and punishment of those suspected of setting it.⁸¹ There is a good argument for labelling both of these fires as accidents.

Some of the fires mentioned by Cassius Dio are in a similar situation to those in Livy already discussed. For some examples, Dio is quick to record that a fire was the result of arson, as he does with the fires of 31 BC and AD 64, blaming the former on the freedmen and the latter on Nero.⁸² Dio fails to comment on the causes of a number of fires, but his recording of these fires is so brief as to suggest accidental causes. This is the case with the fires of 49, 16 and 14 BC, as well as AD 16 and 38.⁸³ The problem with this argument, unlike Livy's, is that Dio also notes a number of fires specifically as accidents.⁸⁴ It is possible that he simply did not know the causes of some of the ones mentioned here, meaning that the situation remains ambiguous.

In the case of Dio, there is one fire for which he offers no explanation as to the cause. This is the fire of AD 6, and while this fire might have been an accident, it also

⁷⁸ Orosius 7.39.

⁷⁹ Julius Obsequens 8 (178 BC) and 19 (148 BC). Livy (*Periochae*, 50) also mentions the fire of 148 BC, and although he makes no mention of the cause, his account of this does not survive in its entirety meaning no firm conclusion can be reached.

⁸⁰ Livy, *Periochae*, 19 (241 BC); Livy 24.47.15-16 (213 BC); 30.24.5 (203 BC); 35.40.8 (192 BC). The first example, despite only surviving in an epitome, is supported by the lack of any suggestion of foul play in other sources that discuss this fire. See Dionysius of Halicarnassus 2.66.4; Valerius Maximus 1.4.5.

⁸¹ Livy 26.27.1-5.

⁸² Cassius Dio 50.10.3-6 (31 BC) and 62.16.1 (AD 64).

⁸³ Cassius Dio 41.14.3 (49 BC); 54.19.7 (16 BC); 54.24.2 (14 BC); 57.16.2 (AD 16); and 59.9.4 (AD 38).

⁸⁴ Most notably that of AD 80. Cassius Dio 66.24.1-3.

might have been a complete invention to rationalise Augustus' creation of the *vigiles* in this year. It is worth quoting the description of this in full:

Ἐπειδὴ τε ἐν τῷ χρόνῳ τούτῳ πολλὰ τῆς πόλεως πυρὶ διεφθάρη, ἀνδρᾶς τε ἐξελευθεροῦς ἑπταχῆ πρὸς τὰς ἐπικουρίας αὐτῆς κατελεξάτο, καὶ ἀρχόντα ἵππεα αὐτοῖς προσεταξεν, ὡς καὶ δι' ὀλίγου σφᾶς διαλύσων. οὐ μὲντοι καὶ ἐποίησε τοῦτο· καταμαθῶν γὰρ ἐκ τῆς πείρας καὶ χρησιμωτάτην καὶ ἀναγκαιοτάτην τὴν παρ' αὐτῶν βοήθειαν οὐσᾶν ἐτήρησεν αὐτοὺς. καὶ εἰσι καὶ νῦν οἱ νυκτοφυλάκες οὗτοι ἴδιον τινα τρόπον οὐκ ἐκ τῶν ἀπελευθερῶν ἐτι μόνον ἀλλὰ καὶ ἐκ τῶν ἄλλων στρατευομένοι, καὶ τειχῆ τε ἐν τῇ πόλει ἔχουσι καὶ μισθὸν ἐκ τοῦ δημοσίου φέρουσιν.

When many parts of the city were at this time destroyed by fire, he [Augustus] organized a company of freedmen, in seven divisions, to render assistance on such occasions, and appointed a knight in command over them, expecting to disband them in a short time. He did not do so, however; for he found by experience that the aid they gave was most valuable and necessary, and so retained them. These night-watchmen exist to the present day, as a special corps, one might say, recruited no longer from the freedmen only, but from the other classes as well. They have barracks in the city and draw pay from the public treasury.⁸⁵

Initially this seems fairly straightforward; there was an extensive fire in the city causing lots of damage and Augustus decided that the measures that had been in place for a number of years to tackle fire were insufficient. For this reason, he came up with a new solution in the form of a new force to fight fires with their own commander from the equestrian order; namely, the *vigiles* and the *praefectus vigilum*. The creation of both of these is indisputable, supported by other literary evidence, as well as being confirmed further by both archaeological and epigraphic evidence. The fire, however, is more problematic and it is possible that it existed solely in Dio's mind, a creation to explain Augustus' decision to establish the *vigiles* at this time.

What evidence is there to suggest that this fire might be an invention? Compared to other fires that Dio mentions, there is much missing that we would expect, particularly given that he states that this fire affected many parts of the city. For

⁸⁵ Cassius Dio 55.26.4-5.

example, the detail Dio provides regarding the two most devastating fires he records, those of AD 64 and 80, is extensive.⁸⁶ With both he provides details of specific buildings that were consumed by the flames, as well as more general comments about areas that also were affected during these fires. For example, for AD 64 he states that the whole of the Palatine was burned, as well as the amphitheatre of Statilius Taurus, while concerning the fire of AD 80, the damage is recorded as primarily affecting the area of the Campus Martius, although Dio informs us that the temple of Jupiter Capitolinus was also destroyed.⁸⁷ These two fires do not prove that AD 6 was an invention, as they are two of the most famous fires to have struck Rome in antiquity; we would expect more information about these than about any other. However, they reveal the level of information Dio could include regarding fires and if we look at two lesser examples we can see how the fire of AD 6 does not concord with his usual details.

The fires of 12 BC and AD 36 are useful in this regard.⁸⁸ Neither are particularly prominent examples and yet Dio provides some important details regarding both. It is worth quoting the details he provides about the fire of 12 BC in full:

και πυρι ἄλλα τε τῆς πολεως συχνα και ἡ τοῦ Ῥωμυλου σκηνη ἐκαυθη, κορακων κρεα ἐς αὐτην ἐκ βομοῦ τινος ἐμπυρα ἐμβαλοντων.

Many buildings in the city were destroyed by fire, among them the Hut of Romulus, which was set ablaze by crows which dropped upon it burning meat from some altar.⁸⁹

Given the brevity of Dio's notice of this fire, he still provides specific information about a building destroyed by it, namely the Hut of Romulus. It is also noticeable that the descriptions of both fires begin in a similar manner, as in both cases Dio writes of their destructiveness as extensive, with many buildings destroyed in 12 BC and many parts of the city affected in AD 6. Dio does not suggest that the fire of AD 36 was of a similar magnitude to that of AD 6, and yet he still provides more information on the former than he does on the latter. Regarding AD 36, he says that a large area in the

⁸⁶ Cassius Dio 62.16.1-18.5 (AD 64); 66.24.1-3 (AD 80).

⁸⁷ Cassius Dio 62.18.5; 66.24.2.

⁸⁸ Cassius Dio 54.29.8 (12 BC); 58.26.5.

⁸⁹ Cassius Dio 54.29.8.

vicinity of both the Circus and the Aventine was affected by the fire.⁹⁰ There are no specifics of buildings destroyed, but we are given the general area affected.

Does any of this prove that the fire of AD 6 was an invention? By no means, but the fact that Dio's description of the fire does not fit into his regular pattern of reporting them provides significant doubt. Another important point is that our other source for the creation of the *vigiles*, Suetonius, makes no mention of a fire in connection with their creation.⁹¹ Again, this is not conclusive that Dio invented this fire, but it does raise another point of doubt. Also, there is no archaeological evidence from the city connected with a fire at this time. Once more, this is not conclusive or surprising, particularly considering the incomplete nature of excavations in the city given its continual occupation since antiquity, but it raises further doubt. The only piece of evidence that supports Dio's version of events is from the *Digest*, and even this only supports him in a very oblique way. This is the extract from Ulpian preserved in the *Digest*, where he states that the corps was created following several fires on one particular day in the city.⁹² While this supports Dio in some respects, in that the *vigiles* were created following a fire, it seems odd that Ulpian talks about several fires and makes no mention of their destructiveness, while Dio talks about a single destructive one. Overall there are significant doubts regarding this fire.

Does this mean we should doubt the veracity of any fire mentioned in an ancient source? The fire of AD 6 is the only fire for which there is any real doubt. We should not, of course, simply accept these accounts at face value; to do so would be naïve. However, we should only raise doubt concerning the veracity of accounts when there is sufficient cause for doing so. Certainly there is exaggeration regarding some fires, but AD 6 is the only one that might be an invention.

Conclusion

It may be obvious to state here, but we can safely conclude that accident was the principal cause of fires in the city of Rome in antiquity. Somewhat surprisingly, of the recorded causes, there are only 2% more fires caused by accident (17%) than by arson

⁹⁰ Cassius Dio 58.26.5.

⁹¹ Suetonius, *Augustus*, 30.

⁹² *Digest* 1.15.2.pr (Ulpian, *De Officio Praefecti Vigilum*, 1).

(15%). This is if we consider the total number of fires; the figure rises to a 5% disparity if we use just the numbers of fires where the cause is known (where accidents account for 44%, as opposed to the 39% for arson). However, this most probably reflects the nature of our source material rather than the reality. In actuality, there were probably many more accidents, and at least some of those for which we have no cause were probably the result of accident. Fires caused by warfare account for only 6% of the total. This should not surprise given the lack of external enemies on Italian soil for much of the period with which this study is concerned.

And yet, despite the importance of accident as a cause of fire, the most prominent examples from the city of Rome in antiquity are those that were caused by either warfare or arson. The sackings of Rome by both the Gauls in the fourth century BC and the Goths in the fifth century AD are examples that are well known, as is the example of AD 64, which is generally believed to be the result of arson on the part of Nero. The reason such examples are more famous is principally due to the fact that they provide a richer and more dramatic episode than a fire that began by chance.

It is also worthwhile to note here that the variety of causes of fire found at Rome is not unique to this city in antiquity. These were the reasons for fires that occurred in any urban settlement in the Roman world. The narratives surviving of fires at Rome are similar in their basic form to those that occurred in Constantinople in Late Antiquity. It would be an interesting and illuminating exercise to compare the reasons behind fires at Rome with those at Constantinople in Late Antiquity and ascertain whether our source material for the latter example would present a skew towards arson or warfare as a primary cause of fire. We must now turn our attention to the sources of fire at Rome, and how one might break out and spread in the city.

Chapter 2: Uses, fire starting and spreading

This chapter has a number of aims. First, it aims to paint a broad picture of the uses of fire in the city of Rome, particularly its use in a domestic context. The key word here is ‘broad’; this will not look at every use. Rather what this chapter will do is collect evidence into four principal categories and provide a discussion of the ability of these to cause a fire at Rome. Second, it aims to build a picture of what happens when a fire starts, looking at the availability of flammable objects in the immediate vicinity and what will happen once these are set alight. Third and last, it aims to construct a model of fire spread beyond the initial area of ignition, into the wider structure, and then into the urban landscape more generally. There are a variety of pieces of evidence spread throughout the extant literature and bringing these together with surviving archaeological material will allow for a good overview of the issues. Within this, aspects of the urban landscape that both prevented and assisted the spread of fire will be discussed, as will the part played by nature which could be both a force for good and ill during a fire.

During this discussion, a number of technical terms relating to fire will be used. These are found in modern literature relating to fire dynamics and will be explained as and when they are encountered. However, one term that needs to be clarified now is ‘compartment’. In the context of fire, compartment refers to the room or area in which a fire begins. Hence, when I refer to a fire in a compartment reaching flashover, for example, what I am saying is merely that the fire had achieved a certain stage in its evolution in the area in which it began. For the most part in this discussion, compartment will refer to a room or area within a room, but this does not have to be the case.¹

¹ For example, the fire at Bradford City Football Club’s ground in 1985 began under one of the stands. This area was neither a room nor in an enclosed space, but is still referred to as a compartment fire.

Uses of fire

One may organise the use of fire in the city of Rome into four principal categories: heating, cooking, illumination, and the work of artisans and craftsmen. The discussion of the first three of these will be confined largely to the domestic context, although some non-domestic uses are discussed where appropriate. For example, discussion of heating contains an analysis of hypocausts found principally in bathhouses throughout the city. Within this broad discussion, comments are made regarding the potential or otherwise of these uses to cause fires. This will help when we reach the discussion of fire starting that follows. During this analysis, one assumption will be made throughout each category; that in every instance these processes were being conducted correctly. Accidents could, and indeed did, occur, but if people were negligent with fire then using it for anything could cause an outbreak. I will assume throughout that people were using it as intended and not being negligent, although I acknowledge that negligence might have occurred.

Heating

This section focuses largely on hearths and hypocausts. Some modern scholars view the hearth of a Roman home being lit twenty-four hours a day.² This entails the fire burning during waking hours and then banked up when the household retired for the night. In this way it could be re-lit relatively easily the next morning. This argument is advanced on two bases. The first is religious, relating to the Temple of Vesta, the goddess of the hearth. The fire in her temple was kept burning at all times, for the symbolic health and well-being of Rome.³ Scholars view the same motivation behind this practice in the home.⁴ The second reason is more mundane and relates to a practical consideration. It is far easier to rake over embers and re-light a fire from these, than to set a fresh fire every day. This is especially true in an era before the invention of matches.

What are the implications of this? Is it likely that fires would start because of hearths? Partly this will depend on circumstances, and a combination of these being

² E.g. Adam 1994:264.

³ Beard, North and Price 1998a: 53.

⁴ See e.g. Hales 2003: 141.

present at the same time in order for a fire to break out. Leaving objects that could easily catch fire near the hearth during the day might let a fire start. Such carelessness is possible around something that people use every day and perhaps take for granted how much of a risk it poses. At night it is unlikely as, in the absence of a chimney, there would be no method by which wind could blow hot embers from the hearth. Both at night and during the day, flammable objects within the vicinity of the hearth would also be needed to allow a fire to spread. During the day, it is probable that the fire would be noticed fairly quickly and extinguished before any real damage was done.

Such a situation may explain the following exhortation in the law codes. In this the *praefectus vigilum* is ordered to ensure that occupants had a supply of water to hand in case of fire:

Ut curam adhibeant omnes inquilinos admonere, ne negligentia aliqua incendii casus oriatur. Praeterea ut aquam unusquisque inquilinus in cenaculo habeat, iubetur admonere.

He must be careful to notify all occupants of houses not to allow any fire to occur through their negligence, and such occupant must be directed to always have water on his upper floor.⁵

The upper storeys of a structure would contain more wood, both the roof and for structural purposes even in concrete buildings. This part of the *Digest* needs to be viewed in this context and was perhaps even directed at those living in the attic spaces (*cenacula*) of Rome, but it might not have been confined solely to them. It would certainly make sense if it was more generally applied, given the lack of ready access to water in many buildings in the capital.⁶ This would affect everyone in the building, not just those living on upper floors. This legislation recognises that a lack of available water could allow a fire to spread and that those lighting and maintaining fires were an important first line of defence against this. They could both prevent a fire from breaking out and stop one spreading if it did. Negligence in keeping a fire, possibly including a failure to keep water nearby, was a serious issue and one that led to the empowerment of the *praefectus vigilum* to punish with a whipping those who committed this offence. This could be commuted to a stern warning for some

⁵ *Digest* 1.15.3.4 (Paul, *De Officio Praefecti Vigilum*, 1).

⁶ Frontinus, *On Aqueducts*, 78-86 notes that only those granted water rights by the emperor had access to water in their home.

individuals, perhaps reflecting the difference between *humiliores* and *honestiores* in Roman law.⁷

How common were hearths at Rome? The *Curiosum* and *Notitia* (the fourth century AD regionary catalogues of the city) record a large disparity between the number of *domus* and *insulae*.⁸ This disparity probably existed much earlier than the fourth century AD, perhaps even the whole of the Imperial period, given the estimated size of Rome's population.⁹ Hearths probably featured in the *domus* of the capital, but were typically not a feature found in *insulae*. They are certainly absent from those surviving at Ostia, an urban landscape that reflects Imperial Rome closely. The inhabitants of these buildings probably relied on braziers for cooking, and possibly used these for heating as well.¹⁰ Given the relatively small number of *domus* and the lack of hearths in *insulae*, I would argue that heating in this context is unlikely to have caused many fires at Rome.

The other principal means of heating a structure was a hypocaust system.¹¹ This was most commonly employed for heating the bathhouses of Rome, the *thermae* and *balnea*, but it could also be used in a house in a similar fashion to a modern central heating system. How common were hypocaust systems at Rome? Looking again at the *Curiosum* and *Notitia*, there were eleven *thermae* and 856 *balnea* in the capital by the fourth century AD.¹² These might have been heated by braziers, but given that baths in Pompeii were undergoing conversion from this earlier method to hypocaust heating at the time of the eruption of Vesuvius, I would argue that the majority, if not all, of the bathhouses at Rome were heated by hypocausts. In this case hypocausts were the norm, rather than just being common.

What about hypocausts in a domestic context? There were certainly hypocausts employed in domestic bath suites. We know from a letter written by Pliny the Younger

⁷ For a discussion of the difference between the two in the Roman legal system, see Harries 2007: 36.

⁸ In total, they record 46,602 *insulae* and 1790 *domus*. See *Breviarium* 20 (p. 572).

⁹ Robinson 1992 and Patterson 1999 are two examples of those who believed the population of Imperial Rome was around one million inhabitants. Storey 1997 argues for a population of around half a million.

¹⁰ Although, as is discussed below, there were kitchens in *insulae* in Ostia and it is likely that they also existed in Rome. This would have a potential impact on the frequency of fires, although it is not clear whether these were communal or individual. As such, braziers may have continued to feature in individual apartments.

¹¹ For a technical discussion of the hypocaust system, see Nielsen 1990: 14-22; Yegül 1992: 356-373; Adam 1994: 265-269. On the development of the system, see DeLaine 1989; Fagan 1996.

¹² *Breviarium* 8 (p. 568) (*thermae*) and 23 (p. 573) (*balnea*).

that his villa at Laurentum possessed such a domestic suite. He says in the letter that if his suite in his villa was unavailable, he would simply use one of the three public bathhouses in nearby Vicus Augustanus.¹³ There is also archaeological evidence for domestic suites. A good example can be found in the Casa del Menandro (I 10, 4). This bath suite had an *apodyterium*, a *tepidarium* and a *caldarium* and at the time of the eruption it was not in service and was undergoing renovations.¹⁴ As such, this suite had no impact on the flammability of Pompeii at that time. The domed oven that provided the heat for the hypocaust was still in place and was located in cellar room D, one storey below the bath suite.¹⁵ However, it was not always necessary for the furnace to be located on a lower level. For example, in the Casa dell'Albergo (III, 1-2, 18-19) at Herculaneum there was a similar domestic bath suite to that in the Casa del Menandro. Like that at Pompeii this bath suite had an *apodyterium*, a *tepidarium* and a *caldarium* (rooms 12-14), with the furnace (room 17) located at the end of a corridor, forming an annex to the bath suite. All of these rooms were located on the same level.¹⁶

There is also evidence for hypocausts used in a manner akin to a modern central heating system, although none specifically from Rome, in part due to the limited number of excavations of *domus* there. Pliny the Younger mentions a number of hypocausts in his villa at Laurentum, in a letter addressed to Gallus. According to Pliny, this estate had three separate hypocausts providing heating. One was used to heat the bath suite the villa possessed, the furnace room for this hypocaust located between an oiling room and the bath's hot room. This also provided the heat for the swimming pool.¹⁷ The other two hypocausts provided heat for bedrooms. The first heated a whole wing, the floor of which was raised and fitted with pipes through which the hot air could circulate.¹⁸ The other is specifically described by Pliny as a small hypocaust and this provided heat for one bedroom set away from the rest of the house, the implication being that Pliny used this room when he wanted some privacy. This hypocaust was unusual compared to the other two in the house in that it had a device fitted to it that

¹³ Pliny, *Epistulae*, 2.17.26. A discussion of this letter can be found in Sherwin-White 1966: 186-199.

¹⁴ Ling 1997: 61-64.

¹⁵ Ling 1997: 95.

¹⁶ De Kind 1998: 91.

¹⁷ Pliny, *Epistulae*, 2.17.11.

¹⁸ Pliny, *Epistulae*, 2.17.9.

either allowed the hot air to circulate under the floor, or kept it trapped when it was not required.¹⁹

There is also archaeological evidence for the use of a hypocaust in a domestic structure unconnected with a bath. At Ostia, the *Domus del Tempio Rotondo* (I, XI, 2-3) included a furnace in room 7 with a *praefurnium* that funnelled hot air into the four adjoining rooms (9-12). The floor of room 7 is 79 centimetres lower than that of the corridor outside and the surrounding rooms and was accessed by two steps. The adjoining rooms all preserve traces of the system: rooms 9 and 10 have channels and fragments of the *tubuli* preserved in the walls; rooms 11 and 12 have channels where the hollow terracotta pipes were located.²⁰ There was a risk that fire would escape the confines of the furnace, but this would depend on circumstances involving frequency of use, the presence of flammable material in the immediate vicinity of the furnace, and the structural context around the furnace. We must now try to answer the question of the fire risk posed by hypocausts.

There are a number of issues relating to hypocausts and fire risks. These can be divided into three broad categories: frequency of use, the structural context of the building, and the presence of an available fuel source for the fire to feed on. Let us tackle each of these in turn. There is more danger of a fire breaking out from something that is used with great frequency, than from something used infrequently or rarely. The hypocausts in the *thermae* were probably kept going most of the time, whereas those in the *balnea* of Rome may have been used less frequently.²¹ Such usage would be impossible to reconstruct now, but would likely have varied over time, principally because the eleven Imperial *thermae* were constructed over a period of centuries. As such demand would have been higher in the other bathing establishments at earlier periods, but later perhaps less so. Concerning the frequency of use of domestic hypocausts, we can say that their existence would suggest they saw some use, perhaps during the winter months. Concerning the bath suite in his villa at Laurentum, Pliny the Younger says that if people arrived unannounced they could go and use one of the three baths in the nearby village of Vicus Augustanus, rather than waiting for the bath to

¹⁹ Pliny, *Epistulae*, 2.17.23.

²⁰ Packer 1971: 155-156.

²¹ See e.g. Nielsen 1990: 17 and Yegül 1992: 381.

reach a sufficient temperature.²² This suggests that the usage of domestic suites was planned and that they were not lit simply on a whim.

Frequency of use alone is not sufficient for a fire to occur; the fire needs something to set alight and then feed on. The structural context surrounding the furnace is important here. The *thermae* were almost entirely constructed from brick and concrete, meaning there was little or nothing in the structure that a fire could exploit.²³ If bathhouses at Pompeii and Herculaneum, as well as elsewhere are representative of those in the capital, the same would be true concerning these establishments also.²⁴ The structure surrounding furnaces in domestic hypocausts may have varied widely. If the furnace in the Domus del Tempio Rotondo is representative of the situation, however, then it is unlikely that they posed much of a risk. Here the furnace was in a small room and there was no evidence of anything flammable being present that a fire could exploit.²⁵

The final aspect is the presence of flammable material in close proximity to the furnace. This would principally concern the storage of fuel and can be subdivided in two: how much fuel was stored at any time and where it was stored in relation to the furnace. The principal fuel used in bath houses was probably wood; the evidence from both literature and inscriptions supports this. For example, the *Historia Augusta* records that in the third century AD the emperor Alexander Severus allocated forests as a source of income for Rome's bath houses; presumably it was designed to meet the demands by these establishments for wood.²⁶ That wood was the main fuel is also suggested by the exhortation in some sources not to use certain types in bath houses.²⁷ The *Digest* states that olive wood and acorns should be used for fuel and burned, as

²² Pliny, *Epistulae*, 2.17.26.

²³ DeLaine 1997: 85-101 discusses the various materials used specifically in the construction of the baths of Caracalla, none of which were particularly flammable. Yegül 1992: 130-172 discusses the construction and layout of most of the major *thermae* at Rome (Agrippa, Nero, Titus, Trajan, Caracalla, Diocletian and Constantine) and, again, the materials discussed are non-flammable.

²⁴ See Kolowski-Ostrow 2007 for a general discussion of bath houses at Pompeii; Pappalardo 1999 for a specific discussion of the Suburban Baths at Herculaneum.

²⁵ Packer 1971: 155-156.

²⁶ HA, *Alexander Severus*, 24.6. It has been argued that the emperors assumed responsibility for ensuring that the baths of Rome had adequate fuel supplies sometime in the third or fourth century AD, principally because it would be politically dangerous if baths ceased to function in a similar way to interruptions in the corn supply. See Meiggs 1982: 259.

²⁷ E.g. both Plutarch (*Quaestiones Convivales*, 3.10) and Macrobius (*Saturnalia*, 7.16.24) advise against the use of olive wood, the former saying that it spoils the plastering and weakens the foundations, while the latter says it damages the fabric of the baths by loosening the joints of the marble. Concerning this Nielsen 1990: 19, n. 64 notes that the sulphur content of this wood forms sulphurous acid when burned and this would damage the joints fixing the marble, supporting Macrobius' assertion.

they are unsuitable for anything else; this has been connected with the fuel for bath houses, although the *Digest* does not mention them specifically.²⁸

While this is abstract evidence for the use of wood in bath houses, an inscription survives that records this specifically. This is in a grant for the baths at Misenum, which specifies hardwood logs for use here.²⁹ Another inscription concerning the fuel for bath houses provides some idea of how much fuel might be stored at any one time. This inscription comes from Altinum in Venetia shows that the donor expected the baths to spend around 12,000 sesterces on fuel per year.³⁰ Blyth argues that this equates to between 364 and 400 cartloads of fuel (roughly equivalent to 140-160 tonnes).³¹ This means roughly one cartload of fuel, or nearly half a tonne, was delivered per day. If the amount of fuel stored in public bath houses was that necessary for one day, this was a substantial amount of fuel in the *thermae* of Rome at any one time. Blyth argues that if Rome's population was 900,000, its baths would need 40,000 tonnes of fuel per year;³² this equates to 110 tonnes of fuel per day. Given what Pliny says about how he acquired fuel for his bath suite at Laurentum, it is possible that domestic suites did not store large quantities of fuel and just acquired it when necessary.³³

As to where this fuel was stored in relation to the furnace, this is a slightly harder question to answer, particularly as this varies between bath houses depending on their size. Large bath complexes, like the Baths of Caracalla at Rome, had extensive subterranean areas in order to allow access to the furnaces. These were 4-6 metres wide and could allow carts to move firewood from a storage area to each furnace.³⁴ The Imperial *thermae* were particularly large, probably an order of magnitude bigger than most bath complexes, and as such these smaller establishments presumably had to store their fuel nearer to the furnace, but they were also probably storing smaller quantities of wood. The risk in this case would be lessened. It is unlikely that those operating bath houses would risk an outbreak of fire by storing fuel near to the furnace. The

²⁸ *Digest* 32.1.55.1 (Ulpian, *Ad Sabinum*, 25). Nielsen 1990: 19 connects this law with fuel for bath houses.

²⁹ *CIL* 10.3687 = *ILS* 5689.

³⁰ *NSc* 1928, 283.

³¹ Blyth 1999: 88.

³² Blyth 1999: 91.

³³ Pliny, *Epistulae*, 2.17.26 where he says that a nearby wood furnished fuel for the bath suite.

³⁴ Yegül 1992: 371-373; DeLaine 1997.

stockpiled wood was, therefore, simply a source of fuel for any fire occurring in the city.

The furnace is the weak point in the system as it is from here that any fire would originate. Therefore, if any fuel was stored close to this, hot embers could escape and set it alight, while the quantity of any fuel would determine the severity of any fire. However, the presence of large quantities of readily available water in bathhouses, and the lack of any flammable structure surrounding the furnace, would limit the potential of any fire by restricting its ability to spread into the structure of the building. Indeed, the *thermae* may have acted as fire breaks in the city and limited the devastating impact of any fires that occurred.³⁵

Cooking

Cooking was an important daily task throughout Rome that involved fire. Some scholars suggest that the Romans rarely ate hot food or that they lived in a ‘take-out’ culture.³⁶ Even if the former is true, bread was still baked on a large scale. This originally took place in the home, and later was carried out in public baking establishments, but in either case there was a fire risk.³⁷ The difference here is between an extensive and an intensive one. In the former case, the risk is spread throughout the city but might be lower given the limited needs of individual households. In the latter case, the risk was concentrated in fewer areas, but might be higher given that these fewer establishments needed to provide greater quantity. A similar situation would exist if the Romans lived in a ‘take-out’ culture, with the fire risk being either extensive or intensive depending on if cooking was taking place in homes or in taverns, inns and other eating establishments. There are a number of references to legislation regarding these establishments, discussed below. First, however, we must examine the evidence for cooking in a domestic setting.

Early in Roman history cooking probably took place in the hearth of the house.³⁸ However, as living spaces developed and housing types diversified, primarily due to social and economic development, this task moved from the hearth to a room dedicated

³⁵ See below on the section relating to factors limiting fire spread.

³⁶ E.g. Bober 1999: 176; Ellis 2000: 159.

³⁷ See Garnsey 1999: 121-122.

³⁸ E.g. Adam 1994:264.

to this task (i.e. the kitchen), although in *insulae* cooking may have taken place on braziers, as many *insulae* lack hearths or kitchens. There is evidence of kitchens from a number of sites. In the *domus*-type housing at Pompeii, Herculaneum and Cosa such evidence survives, probably reflecting the existence of kitchens in this type of housing at Rome. Ostia also reveals a number of kitchens in its surviving *insula*-type housing, and this perhaps reflects more accurately the situation in Imperial Rome, where the majority of people lived in such structures.³⁹

The kitchens in the Insula of the Menander at Pompeii show two distinct and recurring tendencies; they are normally isolated within the structure, whether located at the rear of the property or confined to one side; and they are almost always located next to a latrine. The reason for this is discussed below, but first some examples of this need to be mentioned. At Pompeii, this can be seen in the Casa del Menandro (I 10, 4) and the Casa degli Amanti (I 10, 10-11). In both instances the kitchen and latrine are located in close proximity to one another. In the former they are in rooms 27 and 26 respectively.⁴⁰ In the latter, the kitchen is in room 16, and the latrine is nearby in room 14.⁴¹

The same can be seen at both Herculaneum and Cosa. The Casa dell'Albergo (III, 1-2, 18-19) at Herculaneum has the kitchen and latrine in the same room (38) and isolated from the rest of the house, being tucked in the east corner.⁴² These same tendencies can also be seen at the Casa del Papiro Dipinto (IV, 8-9) and the Casa dello Scheletro (III, 3) at Herculaneum.⁴³ The House of the Treasure at Cosa had the kitchen and latrine located next to each other, the kitchen being identified by the presence of the stove platform.⁴⁴ Likewise with the House of the Skeleton, we have a kitchen and latrine in the same room (21). Here the kitchen was identified by the preservation of stones forming part of the hearth and located along the north-east wall.⁴⁵

³⁹ See above, n. 8.

⁴⁰ Ling 1997: 92-93.

⁴¹ Ling 1997: 202.

⁴² De Kind 1998: 91.

⁴³ For discussion of these, see De Kind 1998: 151 and 99 respectively. In the former, the kitchen (room 2) and latrine (room 10) are next to each other at the rear of the property. In the latter, the kitchen and latrine are in the same room (room 14) in a corner of the house, accessed by a corridor.

⁴⁴ Bruno and Scott 1993: 81.

⁴⁵ Bruno and Scott 1993:123-124.

The situation in the *insulae* at Ostia is similar, with the pattern seen at other sites repeated, albeit with less frequency. For example, the Casa di Bacco Fanciullo (I, IV, 3) had a combined kitchen and latrine (room 9) with this being away from the main areas of activity in the south east corner.⁴⁶ Likewise, the Casa delle Volte Dipinte (III, V, 1) had two kitchens, one on the ground floor (room 7) and one on the first floor (room 12). Only the first floor kitchen repeats the pattern of being near a latrine (room 11). Neither kitchen is particularly separate from the rest of the building.⁴⁷ This example is unusual amongst the surviving evidence in that there is a kitchen above ground level. This may have been a more common feature than the available evidence allows us to suggest.

While this is a common pattern at all of the sites examined, it should not be assumed that it was universal. There are plenty of examples where the kitchen and latrine are nowhere near each other, as well as examples where they are not isolated from the rest of the structure.⁴⁸ Why do these two tendencies recur? Was there a purpose behind this? It is attractive to speculate that the close proximity of a source of water to a fire risk was the purpose, but the truth is more mundane. Both these rooms required water for their primary function so it was mere convenience to locate the two in close proximity. The tendency to isolate kitchens is more difficult to answer.⁴⁹ Was it done to slow the spread of a fire? Possibly, but it might be that the architect or owner wanted the furnace away from the main body of the house. Also, it could be that the owners wanted the individuals who cooked the food out of sight of those who would consume it.⁵⁰ The whole issue may ultimately have come down to the most effective use of space within a structure.

⁴⁶ Packer 1971: 141.

⁴⁷ Packer 1971: 167-170.

⁴⁸ For the former, the Casa del Fabbro at Pompeii is a good example, the kitchen (room 11) being at the rear of the property, the latrine (room 1) at the front (see Ling 1997: 163). For the latter, the Casa dell' Alcova at Herculaneum is a good example, as while the kitchen and latrine are in the same room (5), this is surrounded by a whole suite of rooms (see De Kind 1998: 140). The Domus di Giove e Ganimede and the Casa delle Muse are examples of the absence of this tendency at Ostia (see Packer 1971: 135-137 and 175-176 respectively).

⁴⁹ Although Ellis 2000: 12 argues that the kitchen in the Villa Iovis at Capri was in a more isolated position due to the fire risk it posed and goes on (158-159) to argue the same for kitchens in houses at Pompeii.

⁵⁰ Although Hales 2003: 124-125 argues that there is nothing to suggest this was the case, although equally there is nothing to suggest it is not.

Another important activity for the provisioning of Rome was the baking of bread, a staple of the Roman diet, on a commercial scale.⁵¹ It was the scale and frequency of this baking that raised the potential for fire to occur. In Rome, some members of the population received free grain from the state and it was their responsibility to bake this into bread. This situation changed in the third century AD when the state handed out free baked loaves rather than grain. This change meant that the production of bread would have become both more centralised and more intensive in the areas where this took place. This change in situation would mean a corresponding change in fire risk, from one spread throughout the city to one concentrated in a smaller number of locations. In the case of Rome, there were still over 250 bakeries in the city in the fourth century AD, according to the regional catalogues, the *Notitia* and the *Curiosum*.⁵²

The potential of bakers to be responsible for the starting of catastrophic fires is most clearly exemplified by the Great Fire of London in 1666. Thomas Farriner banked up his oven for the evening, leaving the hot embers in order to re-light it quickly the next morning (a vital task for a baker) and some embers escaped from the oven, landed on some nearby fuel, and over the following days the consequent fire burned much of the city of London to the ground.⁵³ We also have a specific fire from the Roman world, although not, admittedly, at Rome, which began in almost identical circumstances to the Great Fire of London. This took place at Smyrna in around AD 155. A fire broke out at night when hot embers escaped from a baker's oven, set fire to some nearby fuel and spread into the shop. From here the fire spread into the wider city.⁵⁴

The final issue that needs to be discussed here is the cooking that took place in the inns and taverns of Rome. If, as has been suggested, the Romans lived in a 'take-out' culture these establishments fulfil some of this need. We know that cooking took place in such establishments from a number of references to emperors passing legislation banning the sale of hot food. Suetonius reports that Tiberius ordered the aediles to restrict the sale of food in these establishments.⁵⁵ Although Suetonius makes

⁵¹ Brothwell 1969: 95; Bober 1999: 183-184. This is also supported by Juvenal's assertion that the plebs only care about "bread and circuses" (*Satires*, 10.81).

⁵² *Breviarium* 25 (p. 573). The exact number given is 254.

⁵³ Porter 1996: 26-27.

⁵⁴ Pionius, *Life of Polycarp*, 28. The date is unspecified, but its context just before Polycarp's martyrdom suggests c. AD 155; Oleson 1984: 84.

⁵⁵ Suetonius, *Tiberius*, 34.

no specific mention of hot food, it is possible particularly given that he also reports that Claudius rescinded this because the aediles had fined some tenants of his estates for selling cooked food, prior to Claudius becoming emperor.⁵⁶ Cassius Dio also reports that Claudius abolished taverns and forbade the sale of both boiled meat and hot water.⁵⁷ This seems unlikely, but worthy of note here nonetheless. Nero also felt the need to legislate on this issue, banning the sale of cooked food in taverns with the exception of pulses and vegetables.⁵⁸ Vespasian also allowed no cooked food to be sold in taverns, with the exception of pulses.⁵⁹

What motivated this flurry of legislation? That four emperors within half a century had to legislate on this issue suggests that the law was ignored, poorly enforced, or both. However, there are no indications why they legislated on this in the first place. Did these establishments present a serious fire risk? Had they indeed been the cause of fires in the city? This is possible, but unlikely. It is more likely that these were measures connected with public order, particularly the prevention of organised opposition to these emperors.⁶⁰ As for the fire risk in these establishments, this was probably minimal. Of course accidents could occur, but the only time they represent a fire risk is when cooking is taking place and the presence of a number of people (owner, cook, patrons) would limit, to a certain extent, the ability of a fire to go unchecked for long.

Illumination

Illumination was an important aspect of urban living in ancient Rome. This was achieved through the use of both oil lamps and candles.⁶¹ This was an important domestic task, as well as one that would be carried out in public buildings in the city. It is also possible that there was a degree of street lighting in the capital, as there certainly was in at least one city (Antioch) in Rome's empire.⁶² Lighting was not solely confined

⁵⁶ Suetonius, *Claudius*, 38.

⁵⁷ Cassius Dio 60.6.7.

⁵⁸ Suetonius, *Nero*, 16.

⁵⁹ Cassius Dio 65.10.

⁶⁰ This is suggested by some commentators on Suetonius, e.g. Warmington 1977: 73 and Mottershead 1986: 130.

⁶¹ Boura and Parani 2008: 3-4 discuss how oil lamps worked and the types of oil most commonly used in them.

⁶² Ammianus Marcellinus 14.1.9; Libanius, *Orations*, 11.267; 16.41; 22.6; 33.36-37. Jones 1940: 214 and Downey 1961: 363, n. 210 accept this episode and the street lighting of Antioch as genuine.

to night and hours of darkness. As is discussed below, some rooms in houses at Pompeii, for example, had no source of natural light beyond the doorframe and, as such, would require some form of illumination in order to have been used during the day. Such was probably true of at least some rooms in structures at Rome. There are also references to buildings that were notoriously gloomy and these, likewise, would have required illumination in order to function. All of this lighting taking place, both during the day and at night, would have significantly increased the possibility of a fire breaking out.

What evidence is there for lighting in structures? While there are a few literary references, archaeology is by far the best type of evidence for the existence of methods of lighting. Before analysing any evidence in detail, two comments can be made. The first is that logic dictates that once darkness descended, people would attempt to banish this through artificial light; lamps and candles would be the obvious method of achieving this. It could be argued that people merely went to sleep once the sun set, and then rose again with the dawn, but this misses the literary evidence of banquets going on at night.⁶³ These were lit otherwise those in attendance would have been eating in darkness. The second is that there are a number of rooms in houses in Pompeii that received no natural light whatsoever beyond that let in by the doorway. To use these rooms efficiently (or indeed at all) they would have needed to have been lit by some form of artificial light, either lamps or candlelight. This can be seen, for example, in rooms 11 and 12 of the Casa del Menandro (I 10, 4), located in the south-east and south-west corners of the atrium respectively, neither of which received any light beyond that admitted by the doorway.⁶⁴

Similarly some public buildings required light in order to perform their function, as some were notorious for being gloomy. Martial, for example, makes two references to a bathhouse at Baiae (that of Lupus and Gryllus) as being gloomy.⁶⁵ This suggests the baths required light, but were not provided with it. Likewise, Vitruvius recommends late afternoon or early evening as the best time to visit the baths, although

Thompson 1947: 59 sees the whole episode as a myth on the grounds that no city of the ancient world had street lighting. Robinson 1992: 70-71 rules out street lighting for Rome.

⁶³ E.g. Nero's banquet hall in the Domus Aurea had a ceiling which revolved day and night for the enjoyment of diners, suggesting that dinner parties went on at night. See Suetonius, *Nero*, 31.

⁶⁴ Ling 1997: 50.

⁶⁵ Martial 1.59; 2.14.11-13.

he is not specific concerning why such a time is the most appropriate.⁶⁶ However, at such a time the light would have been waning, at least in the winter months, and some method of counteracting this gloominess was required.

That lighting was used in bathhouses can be seen in a number of different places in the extant literature. For example, Seneca the Younger mentions lamps used in bathhouses, something which might indicate that they were open at night, but may simply mean that they lacked natural light and required the lamps to banish the gloom.⁶⁷ The *Historia Augusta* also records the lighting in bathhouses in the capital, although indirectly. It mentions that the emperor Alexander Severus (AD 222-235) allowed baths to remain open at night and provided oil for the lamps used in these establishments.⁶⁸ This privilege was revoked during the time of the emperor Tacitus (AD 275-276) due to the problems it caused; he ordered all baths to be closed before lighting-up time.⁶⁹

The provision of light in bathhouses is also attested archaeologically. A large number of lamps were found during the excavation of the Forum Baths at Pompeii. Around 1500 lamps were discovered here.⁷⁰ More than 500 were found in one corridor alone (corridor E, running north to south in the building) while in the *apodyterium* of these baths there was a niche in the wall that had been heavily blackened by the soot from the lamp that had been used here.⁷¹ This lamp must have been used regularly to produce the blackness of the niche, and there are few uses for a lamp beyond providing illumination.

What risks are posed by oil lamps and candles? Oil lamps are divided into two categories; those with a nozzle for the wick and those where the wick is free-floating.⁷² It would be easier for the burning oil to be dispersed from the latter type, but given that clay predominated as the material from which these were manufactured, they would likely break when dropped, causing oil to be flung in many directions. Given that only a small amount of oil would be used in a lamp at any one time, the risk they posed is lessened. Candles would need to be placed near easily flammable objects to cause a

⁶⁶ Vitruvius 5.10.1.

⁶⁷ Seneca, *Naturales Quaestiones*, 1.2.4.

⁶⁸ HA, *Alexander Severus*, 24.6.

⁶⁹ HA, *Tacitus*, 10.2.

⁷⁰ Nielsen 1990: 136.

⁷¹ Koloski-Ostrow 2007: 231-232.

⁷² See Bouras and Parani 2008: 6.

fire. This does not mean that they did not cause fires merely that the circumstances had to be right for them to start one.

The work of artisans and craftsmen

A large amount and variety of manufacturing was undertaken by artisans and craftsmen at Rome, all of which used fire and all of which provide a potential source of an outbreak of fire.⁷³ There are a whole variety of processes that could be encompassed under this heading, including metalworking, dyeing, fulleries, and brick and pottery production. Before we ascertain the issues connected with these processes, it should be noted that some of these tasks would not have taken place on a large scale (or, perhaps, even at all) at Rome. This is because large scale production of bricks and pottery, for example, would take place at the sites where the raw materials for this were located.⁷⁴ This does not mean that bricks were not produced at Rome, but any that were would be on a small scale and their impact on fire hazard would be negligible. What arts and crafts work took place at Rome?

One type of work that may have taken place is the dyeing of textiles. It has been noted that this (like fulling) was not excluded from urban settlements, despite the vile smells involved.⁷⁵ There were two methods of dyeing in the ancient world (using either substantive dyes or adjective ones), but with either method heated vats of liquid are required. Adjective dyes require more vats as in this case the cloth requires pre-treatment with a mordant before being dyed, a stage not required with substantive dyes.

There were six or seven dyeing establishments at Pompeii.⁷⁶ These were located on the Via di Stabia, the Via di Nola, the Via dell'Abbondanza, as well as the Vicolo degli Scheletri and the Vicolo dell'Efebro. These workshops are located primarily on through routes within the city, and largely towards the centre, rather than being all zoned together in one specific part of Pompeii. Being located on through routes was probably for the ease of delivery of the raw materials to be dyed and then the

⁷³ This is especially true given the almost industrial level of pollution from copper smelting found in Greenland ice cores dated to the period 200 BC – AD 200. Such pollution levels would indicate intensive use of fire to smelt copper, but such work would not solely be confined to Rome as it would be taking place throughout the Roman world. For a detailed discussion of this pollution and the sampling of the ice cores, see Hong, *et al.* 1996

⁷⁴ For further discussion of this, see Sim and Ridge 2002: 44-46; Halkon 2002: 21-25.

⁷⁵ For discussions of the process of dyeing, see Wild 1970: 79-82.

⁷⁶ Jongman 1988: 166 identified six dyehouses, while Laurence 1994: 64 identified seven.

easy collection and movement of the finished products; considerations of bad smells or fire risks were either not taken into account or the risk they presented was deemed acceptable. Jongman identified a total of 32 furnaces and cauldrons in the six dyeing establishments he located, giving a ratio of furnaces to establishments of a little over five to one.⁷⁷ Given this high ratio of furnaces to establishments, there is significant potential for an accident to occur and a fire to break out, although given that we do not know the length of the working day, this may not be as significant as it first appears.

An interesting point Jongman raises is that, despite the scale of the dyeing capacity at Pompeii, this would not support a large export market, meaning that most if not all of the cloth would have been consumed locally. If this was the case here, it was also possibly the case at Rome, and it raises an interesting point regarding scale here. The risk at Rome would be much more substantial given that the industry would be on another scale altogether due to the size of the capital in comparison with Pompeii.⁷⁸ However, there are problems with Jongman's assertion. Most notably, we do not know the length of the working day, nor do we not know the output rate of each individual establishment or the level of consumption within Pompeii itself. All of this means we cannot know how much cloth was dyed or how much the local market could absorb.⁷⁹

Another type of work that took place was metalworking, from base metals such as iron, to luxury metals such as gold. On what scale would such work take place at Rome? It is unlikely that any large scale metalworking took place at Rome. It is probable that items were manufactured on a scale sufficient for local consumption, or perhaps even imported from nearby. Even if the latter were true, some level of metalworking industry would probably be required in order to affect repairs on items, particularly involving luxury metals such as gold and silver.

There is evidence of metalworking at Verulamium, both of baser metals and luxury ones. For example, in Insula XIV there is evidence of a bronze-smith's workshop from the beginning of the Roman occupation and continuing for almost a century. In Period I (c. AD 43-60) the workshop was located in room 27, identified on the basis of a large quantity of bronze powder and tiny lumps of bronze found here,

⁷⁷ Jongman 1988: 166.

⁷⁸ Jongman 1988: 166-167.

⁷⁹ Many of these objections are raised and discussed in detail in Pirson 2007: 463-466.

possibly as a result of lathe-turning, filing or engraving the metal.⁸⁰ During Period IIA (AD 60-c.105) this workshop was in room 9 and in room 13 during Period IIB (c. AD 105-130), identified on a similar basis to that for Period I.⁸¹ This was not the only type of metalworking that took place at Verulamium. During Period IID (AD 150-155/60), there was also a goldsmith's or a jeweller's in Insula XIV. Room 55 formed the storeroom of this establishment and here there were a number of finds of luxury items, as well as twelve small crucibles with minute globules of gold in each. This suggests that someone was melting down gold, either to create new pieces of jewellery or to repair old ones.⁸² Whatever the case, this would have required the heating of a furnace or furnaces to very high temperatures in order to carry out this work, and the inherent fire risk this entailed.

Fire starting

Some comments were made above concerning how a fire might start, but now we must look at this issue in greater detail. Once a fire starts there is only a small window of time in which to extinguish it before it achieves flashover and burns through the flammable material in the compartment in which it starts. If the fire is extinguished before flashover occurs, the damage will be minimal, largely confined to the item initially set alight and perhaps some adjacent or nearby items, as well as smoke damage.⁸³ This initial stage of the fire is what concerns us here. There are three principal questions that need to be answered. What might cause a fire to break out? What is there to burn in the initial stages of a fire? And how would a fire spread beyond the initial compartment into the wider structure of the building?

There are numerous scenarios that may lead to a fire starting. Hot embers might be blown out of a hearth or oven and set alight some nearby items, such as a stack of fuel or some item of soft furnishing. Perhaps a person reading or working by candle or lamplight fell asleep and knocked the light over, setting fire to a nearby blanket. Someone smelting metal and pouring it into a mould may have spilt some on

⁸⁰ Frere 1972: 18.

⁸¹ Frere 1972: 27 and 42.

⁸² Frere 1972: 81.

⁸³ This is discussed in the next chapter. It should be noted here that the damage caused by smoke will depend partly on the contents of the room in which the fire occurred.

themselves incapacitating them; the metal might also spill onto a nearby flammable object setting it alight. Almost any scenario could be posited, as the ancient source material only provides us with hints. For example, we are told that the fire of AD 64 started in a shop selling flammable goods, while that of AD 192 started in a dwelling near the Temple of Peace.⁸⁴ That is the most detail we have for any fire at Rome. We have a more detailed account only for the fire at Smyrna in c. AD 155. There the fire started in a bakery due to embers escaping the oven and setting fire to a nearby stack of fuel.⁸⁵ Similar situations must have caused many accidental fires at Rome.

While there are few detailed records of the exact origins of individual fires, there is a lot of evidence for the material that would burn in the initial stages of a fire and as it spread throughout the building more generally. Once a fire starts it would spread most easily amongst the furniture and soft furnishings in a domestic context, while the example of Smyrna perhaps reveals one mechanism for fires originating in a commercial context. The furniture and soft furnishings found at Rome would be similar to that preserved at Herculaneum by the eruption of Vesuvius, although given Rome's higher population density there would probably be a greater volume of both. This would, however, vary according to both the social and economic status of individual households.

Houses and *insulae* undoubtedly contained a variety of furniture. These included tables, couches, beds, and seating, as well as furniture for storage and display. The couches, beds and seating all required soft furnishing to make them useable as, for example, a bed or couch requires a mattress, while a blanket and pillow or cushion are common additions for sleeping, although neither is a requirement.

Known Roman tables were akin to modern coffee tables, low and small, and probably used mostly for dining. Six wooden examples survive from Herculaneum, all of them round, although presumably any shape required by a customer could be made.⁸⁶ Tables also find occasional mention in literature, although typically due to some exceptional or unusual characteristic. For example, Cicero mentions a table because Verres allegedly stole it, while Pliny the Elder and Seneca both mention particularly

⁸⁴ See Tacitus, *Annals*, 15.38; Cassius Dio 73.24.1.

⁸⁵ Pionius, *Life of Polycarp*, 28.

⁸⁶ See Mols 1999: 170-180, nos. 14-19 for details of these tables.

expensive tables.⁸⁷ One of these was even destroyed in a fire.⁸⁸ All of the tables recorded in the literature mentioned above were made from citrus wood, but any wood could be used to make a table and was probably dependent on what was locally available.⁸⁹

Couches, like tables, were used in dining. These could be stand-alone items or two could be joined at right angles to form a *biclinium*. Examples of both types have been found at Herculaneum. A particularly good example of the stand-alone type survives from the Casa del Mobilo Carbonizzato (V, 5), a rectangular wooden couch with boards on three sides and five wooden rails to take the weight of the mattress.⁹⁰ Two examples of the *biclinium*-type also survive, one in the Casa a Graticcio (III, 13), the other at the Casa dell'Alcova (IV, 4). These are both similar to the stand-alone couch; there are simply two of them joined at right angles.⁹¹ One point to note here is that neither tables nor couches may have been particularly common beyond *domus*-type housing. Certainly those living on the upper floors of *insulae* lacked, and perhaps did not require such, extensive dining facilities. However, such a generalisation should not be pushed too far as there was wide variation in the size and lavishness of apartments within *insulae* and, as such, some may have had tables and couches for entertaining. Although these would certainly have a role to play in allowing a fire to spread, this may have been limited one in the *insulae* at Rome.

Beds may have been similar in many respects to couches, particularly given the similarity of construction of those found at Herculaneum. Indeed, it is possible that beds doubled as couches and vice versa.⁹² The two beds found at Herculaneum are very similar to the couches mentioned above, only differing in dispensing with the back board, while retaining the head and foot boards. It should be noted, however, that these examples had much stronger supports for the mattress than the surviving couches.⁹³ Children's beds and cradles for babies also existed, an example of each surviving from

⁸⁷ See Cicero, *The Verrine Orations*, 4.37; Pliny, *Natural History*, 13.92 (he mentions one table bought for 500,000 sesterces and another for 1.3 million sesterces); Seneca, *De Beneficiis*, 7.9.2 (he mentions tables changing hands for the same as a senator's property qualification, which was one million sesterces).

⁸⁸ The 1.3 million sesterces citrus wood table mentioned by Pliny (*Natural History*, 13.92).

⁸⁹ Meiggs 1982: 296 notes, concerning furniture makers and carpenters, that "for the common man almost any wood was adequate".

⁹⁰ Mols 1999: 157, no. 7.

⁹¹ Mols 1999: 152-154, nos. 5 and 6.

⁹² This is argued, for example, by Liversidge 1955: 11 and Ulrich 2007: 232.

⁹³ Mols 1999: 147, no. 2 and 151, no. 4.

Herculaneum, and these were quite clearly single purpose items, both of which would have added to the flammability of the house.⁹⁴

Seats form another category of furniture recorded in Roman houses. This could take the form of benches, stools or chairs. Examples of the first two of these survive from Herculaneum, in the form of three wooden benches and a single stool.⁹⁵ Both are very basic, little more than pieces of undecorated wood fitted together, suggesting that, in the case of the benches at least, these were not intended for use for extended periods of time. No chairs were found at Herculaneum, but Liversidge argues that wooden and wickerwork ones were common in Roman Britain, Gaul and Germany, given their regular appearance on funerary reliefs from these provinces.⁹⁶ It is likely that they were also to be found at Rome, given their occasional mention in literature.⁹⁷

The final category of furniture to be discussed is that used for storage or display. This principally concerns cupboards and chests, although there are other types, such as the *abacus* (sideboard), mentioned in extant literature.⁹⁸ It is widely held that chests were the principal method of storing items throughout the Roman world.⁹⁹ The surviving example from Herculaneum is rectangular and while chests probably varied in size, they probably retained this shape.¹⁰⁰ Examples from Pompeii, preserved from casts, were also rectangular.¹⁰¹ The variety of items that could be stored in these is almost limitless, including documents, clothing, and valuable items.¹⁰² However, it is unlikely that a chest regularly provided the starting point for a fire due to the thickness of the wood used. This would have to be thick to protect any items and to retain their integrity if filled with heavy items. As such it would take a long time for the fire to burn through this to ignite whatever was inside. A fire that was burning well when it reached a chest would perhaps be slow in consuming it, but if it was not removed quickly from the scene anything inside would be lost.

⁹⁴ Mols 1999: 149, no. 3 and 163, no. 11.

⁹⁵ Mols 1999: 183-187, nos. 24-26 and 182-183, no. 23.

⁹⁶ Liversidge 1955: 15-26.

⁹⁷ For example, Varro, *On the Latin Language*, 5.167 mentions the *pulvinar* as a chair of honour, while Juvenal, *Satires*, 7.203 mentions a *cathedra* as a teacher's chair.

⁹⁸ For example, Cicero, *The Verrine Orations*, 4.35 accuses Verres of stealing all the items from Diocles Popilius' *abacus*, while Livy 39.6.7 states that they were first brought to Rome by Manlius Volso following his victorious campaign in Asia.

⁹⁹ See, for example, Liversidge 1955: 60; Richter 1966: 114; Mols 1999: 63; Ellis 2000: 146 and 152; Ulrich 2007: 229-230.

¹⁰⁰ Mols 1999: 217, no. 41.

¹⁰¹ See Allison 2006: 69, no. 229 and 89, no. 404.

¹⁰² For a discussion of the nature of items stored in these, see Richter 1966: 114; Ulrich 2007: 227-232.

A number of cupboards survive at Herculaneum, and these could have been used for storage or display (or both) if freestanding. Some were formed simply by placing a wooden door over a niche in a wall; these would have little impact on the flammability of a structure given that the door was the only part of the cupboard that could burn, and it is very unlikely that a fire would start here.¹⁰³ The five surviving examples are simple wooden structures, rectangular in shape, with one or two doors.¹⁰⁴ It is difficult to posit a scenario where a fire would start at a cupboard, but they would certainly provide a good source of fuel once a fire was burning in a structure. This would be especially true if they were being used to store flammable items.

As mentioned above, Roman furniture was uncomfortable without some form of soft furnishing, and beds and couches in particular could not be used without at least a mattress (and in the case of a bed, probably a blanket as well). Little of this material survives, but there are a number of references to it in literature which allow us to build a picture of its diversity. For example, Cato the Elder mentions mattresses, coverlets, cushions and table covers as items of soft furnishing he expected to see on a wine producing estate.¹⁰⁵ Varro mentions some in his discussion of the etymology of Latin, including mattresses and mattress covers, pillows, valances, and the *pulvinar*, something he says is so named either from the word for feathers or for fur. He also mentions bedspreads and bed curtains.¹⁰⁶ The feathers and fur have important implications once a fire starts.¹⁰⁷ Livy also provides a long list of soft furnishings brought back to Rome by Manlius Vulso in 187 BC, all of which were displayed in his triumph.¹⁰⁸ All of these references are to either wealthy estates or unusual items. We must remember that even the poorer inhabitants of *insulae* probably had a straw mattress to sleep on and a blanket to keep them warm at night. Soft furnishings would have been found throughout the urban landscape. The differences between the wealthier and poorer inhabitants were ones of quantity and quality.

So far we have seen that there was a wide variety of furniture and soft furnishings used by the Romans. We now need to answer the question of what

¹⁰³ Such a cupboard can be seen in the Casa della Gemma at Herculaneum. See Mols 1999: 212, no. 38.

¹⁰⁴ See Mols 1999: 207-217, nos. 35-40 for details of these.

¹⁰⁵ Cato, *On Agriculture*, 10-11.

¹⁰⁶ Varro, *On the Latin Language*, 5.167-168.

¹⁰⁷ This is discussed in chapter 3 in relation to the damage caused by smoke. Both fur and feathers would produce hydrogen cyanide when burned.

¹⁰⁸ Livy 39.6.

happened to this once a fire had started and then how it spread through the compartment in which it ignited. The circumstances that caused the fire to start are largely irrelevant once it begins. From ignition, there is a limited time frame in which to easily extinguish the blaze and for those in the structure to safely escape.

Fire spreading

Once flashover has occurred in a compartment fire, every available flammable item will then be burning.¹⁰⁹ The fire may even have spread beyond the confines of the compartment, depending on the severity of flashover and the proximity of flammable items to any available egress points for the fire. This section is concerned with how a fire spreads within a structure, in other words, with the post-flashover fire having escaped the confines of the initial compartment, and then how it will spread within the urban sprawl of Rome. What aspects of a building would allow a fire to spread? What flammable components existed within the wider urban landscape of Rome? Finally, what features of Rome might have prevented the spread of a fire within the city?

How might a fire spread within a structure? Following flashover, the compartment where the fire started will be burning completely. This includes the ceiling of the room, which may be little more than the exposed beams supporting the floor or roof above. While these would be very thick to support the weight of the structure above, if nothing was done to extinguish the fire they would eventually lose the ability to provide the integrity necessary to bear the weight above, and would collapse. This would cause severe structural damage, but could also have the positive effect of extinguishing the blaze in the immediate area of the collapse.

Outside of that initial compartment, however, there are a number of components of the structure that would burn. The main egress points from the initial compartment for a fire would be doorways and any windows. Windows might be covered by wooden shutters (*valvae*), as surviving examples from Herculaneum and Oplontis attest (the latter reconstructed from a plaster cast).¹¹⁰ The existence of shutters is also attested in

¹⁰⁹ A caveat to this is that if the compartment is especially high or long, flashover from the initial burn area may not have sufficient strength to reach every flammable item within the compartment.

¹¹⁰ Both of these are discussed by Ulrich 2007: 194. He also discusses the technical aspects of their construction and operation (Ulrich 2007: 192-193).

literature.¹¹¹ While these would certainly burn, if closed they may stop the fire from spreading to nearby buildings at the point of flashover. Given the explosive nature of this event, if buildings were particularly close together (as they typically were at Rome) the fire might reach the structure next door. However, with shutters in place between the egress point and the nearby building, the fire might lose some of its force, enough that it might not immediately ignite the neighbouring structure. However, once the *valvae* were actually burning, any strong wind might pick up hot embers and deposit them elsewhere, causing additional fires.¹¹²

The doorway or doorways to a room was the other principal egress point for a fire at flashover. A fire might be stopped here if a door shut off the room from the rest of the house. If the doorway was simply left open or only protected by, for example, a curtain the fire would escape this way into the rest of the structure. The ability of a door to hold back a fire would depend primarily on its thickness and whether it was fitted to the entire frame (any gaps would be exploited by the fire to allow it to escape). The wooden doors that stood at the entrance to any structure would probably be thick enough to prevent a fire breaking through them very quickly or easily.¹¹³ In this respect they would arrest the spread of a fire, although they would also provide the necessary conditions for back draught should someone open them in order to fight the fire behind.¹¹⁴

Once a fire escaped the compartment where it began, it will search out flammable items to which it can spread. The same types of wooden items in the room where the fire began would be found elsewhere in the structure. Any such items in close proximity would quickly ignite. The fire would then leap between wooden items and propagate itself this way, spreading itself throughout the structure wherever a suitable fuel source existed. The staircase was the principal source for allowing the fire

¹¹¹ E.g. Ovid, *Ex Ponto*, 3.3.5; Pliny, *Epistulae*, 2.17 and 5.6. For discussions of the two letters of Pliny, see Sherwin-White 1966: 186-199 and 321-330.

¹¹² The combination of strong winds and major fires at Rome (and indeed throughout history) is well attested. See the descriptions of the fires of AD 64 and AD 192 in Appendix I. Also from the ancient world, the fire of Nicomedia described by Pliny the Younger (*Epistulae*, 10.33). Likewise the Great Fire of London, 1666.

¹¹³ It should be noted that doors need not necessarily be made of wood. For example, the door to the temple of Romulus in the Forum Romanum was made of bronze (see *LTUR*, s.v. Romulus Divus, Templum). However, this was perhaps only common for monumental structures. The impact of this on fires at Rome would be minimal.

¹¹⁴ This is discussed in Chapter 5.

to spread into the upper reaches of a building.¹¹⁵ Traces of wooden staircases can be found in the surviving plaster of buildings (the grain of the wood is imprinted in the plaster) or inferred from the survival of a masonry step (or steps) forming the lower part of a staircase. Both such indications can be seen in the Casa degli Amanti at Pompeii. In room 3 there is an opening for a flight of stairs, with a masonry base of three steps upon which the rest of the staircase was constructed in wood; traces of its grain can be seen in the surviving plaster.¹¹⁶ Likewise at Ostia, a masonry base forming the lowest step of a staircase can be seen in the kitchen (room 18) of the Domus di Giove e Ganimede (I, IV, 2), while the imprint of a wooden staircase can be seen in the surviving plaster of room 19 of the Caseggiato di Diana (I, III, 3-4).¹¹⁷ There are many more examples besides these.

Staircases potentially provide a useful means by which a fire can propagate itself within a structure if it starts on a lower floor. This is because fires spread faster when moving up a slope, or any kind of gradient, because the fuel above the fire front is heated by hot gases rising in front of it. However, the reverse is also true. If the fire starts on the upper floors of a building, it is largely confined to these and spreads upwards, despite the presence of a flammable wooden staircase. In this respect, the location of a fire within a structure is key in understanding how it might spread and the damage it might inflict on the structure and the wider urban landscape.

The final two wooden elements to be discussed here are roof and wooden balconies. These are vital components in the propagation of the fire throughout the wider urban landscape. No wooden balconies survive in the capital, but they are mentioned in connection with one particular fire. During fighting between the populace and the Praetorian Guard in AD 238, Herodian mentions that the Praetorians set fire to the wooden balconies of buildings to drive the people out of those structures. According to Herodian, such balconies were a common feature of buildings in the city.¹¹⁸ In the narrow streets of Rome wooden balconies would narrow the gaps a fire needed to jump to spread itself further, as well as providing another source of hot embers for any wind to pick up. The other danger posed by these balconies is that

¹¹⁵ This would only apply if the staircase was wooden. Masonry staircases were common at Ostia, as noted by Adam 1994: 200. For a discussion of these, see Packer 1971: 28-31.

¹¹⁶ Ling 1997: 199.

¹¹⁷ Packer 1971: 137-138 (Insula di Giove e Ganimede) and 130 (Casa di Diana).

¹¹⁸ Herodian 7.12.1-7.

burning pieces might drop into the street below, potentially causing injury to fire fighters and passers-by, thereby adding to the confusion. Such incidents would prevent escape and impinge the ability of fire fighters to stop the fire spreading.

A roof is a vital element of any building; indeed without one it would be uninhabitable. Wooden roofs contained the greatest concentration of wood in a structure, whether flat or pitched.¹¹⁹ Also, the beams used to hold up the roof's framework would be the thickest timbers employed in a structure, since the roof had to bear its own weight, that of the protective sheathing (shingles, tiles, etc.) and any temporary weight exerted on the roof (i.e. by snow, strong wind or heavy rain).

Given the thickness of the roof beams, it would take time for a fire to penetrate deeply enough to actually undermine the structural integrity of the roof, although it is possible that by the time the fire reached the roof it would be a raging inferno and therefore at its hottest. This is because it is unlikely that the source of ignition would have been located directly under the roof, so the fire would have burned through all the flammable material of at least one floor before reaching the roof.

In theory, the roof covering could be made of any suitable material, from turf or reeds to wooden shingles, fired clay tiles, concrete vaulting, or even metal.¹²⁰ For example, bronze was used as a roof covering on the Pantheon, concrete vaulting was used for a number of public buildings, while the Hut of Romulus was roofed with thatch, a testament to the Roman housing of a distant past.¹²¹ Pliny the Elder claims that wooden shingles as a roofing material were replaced by tiles at the time of the war against Pyrrhus of Epirus (281-279BC).¹²² It has been argued that this was the result of legislation.¹²³ Certainly there is sound military thinking behind this. In the event of a siege, wooden shingles would be a serious risk if the enemy employed incendiary weapons such as fire arrows. However, despite Pliny's assertion, such a change may not have been complete and it is possible, given the presence of entirely wooden

¹¹⁹ For an overview of roofing methods and technical discussions of the different types, see Adam 1994: 205-213; Klein 1998: *passim*; Ulrich 2007: 124-125.

¹²⁰ For a brief overview of materials used as roof coverings, see Adam 1994: 213-215.

¹²¹ Vitruvius 2.1.3-5.

¹²² Pliny, *Natural History*, 16.36.

¹²³ Robinson 1992: 34-35 argues this on the basis of the suddenness and completeness of the change implied by Pliny. However, there is no evidence beyond this. The same point is made by Ross 1996: 152-153.

structures mentioned in passing in the extant literature that some wooden shingling continued to be used in the city.¹²⁴

Would roofs help or hinder the spread of a fire? The thatch roofing on the Hut of Romulus was responsible for one fire that took place in the city.¹²⁵ A roof covered with wooden shingling might spread a fire if hot embers were blown into surrounding areas. However, a number of factors would prevent the spread of a fire. With concrete vaulting, there is nothing to burn. This would mean that a fire in a structure with a concrete roof would lose one point of egress. Likewise any burning debris blown onto one would have no opportunity to propagate itself. The same would be true of a metal roof too. Ceramic tiles would also help to slow the spread of a fire within the city. These would potentially prevent the spread of a fire that originated within the structure, as ember would not easily be blown from the roof to other structures. However, the weight of the tiles might also accelerate the collapse of the roof. This might cause an updraft, throwing hot embers and bits of burning debris out, causing secondary fires, but equally the collapse of the roof might snuff the fire out. Ceramic tiles would also slow the spread of a fire through hot embers landing on the roof, although in this situation, gaps between tiles might allow some embers to get through. The wood underneath provides flammable material (in contrast with concrete vaulting) although any burning would take place slowly.

There are a number of other factors that could both aid and prevent the spread of a fire within the city of Rome. The former include the existence of awnings and temporary wooden seating, temporary wooden buildings, market stalls, and also the construction industry. Those that could prevent fire spread include large concrete structures, such as *horrea* and *thermae*, the presence of large open areas in the city, and the river Tiber.

Factors assisting fire spread

Awnings and temporary wooden seating were a feature of Rome's urban landscape, particularly before the construction of permanent buildings for entertainment. The same is true of temporary wooden buildings, many of which were erected for the

¹²⁴ E.g. Herodian 7.12.6 makes a passing reference to wooden houses in the city, suggesting these were common enough not to be worthy of especial mention.

¹²⁵ The fire of 12 BC. See Cassius Dio 54.29.8.

provision of entertainment. However, awnings need not be temporary; the Colosseum's awning was there all year round, and would assist the spread of a fire in much the same way as a temporary awning. Indeed, the awning of the Colosseum may have played a key part in the nature of the damage suffered by this structure during the fire of AD 217.¹²⁶

The presence of awnings and temporary wooden seating at Rome is attested in a number of passages in the extant literature. According to Pliny the Elder, the practice of temporarily covering an area with an awning began with Quintus Catulus in 69 BC, in this instance made of linen and used when dedicating the Capitol. Catulus' display was outdone by Caesar, who covered the whole of the Forum Romanum, the Sacra Via as far as his mansion, and the slope leading to the Capitol when celebrating a triumph while dictator.¹²⁷ They are also attested epigraphically at Pompeii, a good example being one for a *venatio* and athletic contest organised by Gaius Alleius Nigidius Maius where awnings would feature.¹²⁸ Such awnings were popular with spectators as they provided some respite from the elements, and the same situation possibly existed at Rome.¹²⁹

Temporary wooden seating is slightly harder to discuss as no source actually specifies that the seating was of this material. For example, Plutarch mentions that when a gladiatorial display was due to be held in the Forum Romanum, Gaius Gracchus had the seating that had been erected there taken down.¹³⁰ This suggests that, at least by Gaius Gracchus' time, temporary seating was a regular feature of such events. However, what this seating was made of is not recorded. Apart from wood, stone is the only other real possibility, but wood is the best candidate as it was relatively easy to erect and dismantle.

How would these have aided the spread of a fire within the city? When either was erected, they would provide the necessary flammable material for a fire to spread across a wide open area that it might otherwise not have been able to cross. Whether a

¹²⁶ This is discussed in Chapter 3.

¹²⁷ Pliny, *Natural History*, 19.23. Caesar's display is also mentioned by Lucretius, *De Rerum Natura*, 4.75-83.

¹²⁸ *CIL* 4.7993.

¹²⁹ Dunkle 2008: 66-68 discusses the presence of awnings at games and the protection they offered to spectators.

¹³⁰ Plutarch, *Gaius Gracchus*, 12.3-4. This was because the magistrates intended to charge the people for watching the games, while Gaius wanted the poor to be able to watch it for free.

fire would actually start at either is difficult to assess.¹³¹ There is another aspect of the presence of awnings and wooden seating to consider: What happened to everything once its use came to an end? Were the material for the awnings, along with any associated ropes and other material for erecting them, disposed of or stored? The same question could be applied to wooden seating. If everything was stored after each use, this posed a serious threat, as it was a good source of fuel for any fire. In the unlikely event that these were simply thrown away, the only danger was posed during the period of their use.

Temporary structures fall into a similar category as awnings and seating, and some of the same questions raised regarding these also apply here. Most of the evidence we have are for entertainment structures in Rome, principally theatres and amphitheatres.¹³² Vitruvius mentions that, in his day, many wooden theatres were built each year at Rome.¹³³ However, there are other references to actual structures erected at Rome.¹³⁴ Perhaps the most famous temporary wooden structure mentioned in any ancient extant text are the two theatres built by C. Scribonius Curio in 52 BC, which were mounted on pivots. These could be turned to create an amphitheatre.¹³⁵

How did such structures aid the spread of a fire? In much the same fashion as the awnings and seating, these would have been built in wide open areas that might otherwise have prevented the spread of any fire. Fires might have started in such wooden entertainment structures, although there is no surviving evidence of this at Rome. A wooden amphitheatre at Placentia was burned by Otho's troops when they stormed the city in AD 69, although it is unclear if the fire started there or spread to the structure from elsewhere.¹³⁶

As with awnings and temporary seating, the question of what happened to these structures when their use was at an end needs to be raised. Were they dismantled and stored or merely disposed of? If they were stored, this would increase the amount of

¹³¹ Compare the fire at the Valley Parade stadium in 1985 when a fire broke out in the wooden terracing during a game between Bradford City and Lincoln City. This occurred just before the end of the first half and left 56 dead and over 250 injured. See Firth 2005 for a detailed analysis of this incident.

¹³² For a good discussion of wooden theatres and amphitheatres, see Meiggs 1982: 228-230; Welch 2007: 58-71.

¹³³ Vitruvius 5.5.7.

¹³⁴ E.g. Livy 40.51.3 on the temporary theatre of M. Aemilius Lepidus of 179 BC, and 41.27.6 on that of the censors of 174 BC.

¹³⁵ Pliny, *Natural History*, 36.117.

¹³⁶ Tacitus, *Histories*, 2.21.

potential fuel. If they were thrown away, the only danger was when they were standing. Usable timber would be re-used rather than simply disposed of, perhaps to construct other buildings in the city or wooden additions to structures. The wood perhaps remained a fuel source for a fire, but simply in a different form of structure.

Market stalls are another feature of the urban landscape that would aid the spread of a fire, principally by providing a source of fuel in an open area and a means by which a fire could bridge this space. There is evidence for the existence of market stalls in the Roman world. Around the perimeter of the forum of Iol Caesarea (modern Cherchel) in North Africa there were a series of post holes and grooves. These are the only remains of a series of four stalls, envisaged as constructed of wooden frames with awnings.¹³⁷ Three of these stalls were close together, meaning that a fire would easily spread between them; the fourth was somewhat larger and some distance away. There is other evidence of stalls from two paintings surviving at Pompeii, these both showing stalls, presumably of wood, covered by awnings. The painting found in the house of Actius Anicetus depicts the riot between the Pompeians and Nuceriaans at the amphitheatre in AD 59, and clearly shows a covered stall outside the amphitheatre.¹³⁸ This probably represents the reality of what was involved in going to the amphitheatre. The goods sold by this stall are not clear from the picture, although refreshments are a strong possibility.¹³⁹

As was said above, the presence of these stalls in open spaces would provide fuel and the means for a fire to bridge an open space, but this would only be the case if these were left in place at all times. For example, those stalls in the forum of Iol Caesarea might not have been left in place at the end of the business day, but may instead have been taken down and stored somewhere. Those selling goods outside amphitheatres were presumably packed away at the end of a day's entertainment and may have been less substantial than those found at Iol Caesarea. Although there is no evidence of stalls at Rome, they presumably featured in the city, even if only to serve crowds at public entertainments. They would have aided fire spread, but their impact would be minimal in comparison with the other features discussed here.

¹³⁷ Potter 1995: 36-37.

¹³⁸ The riot is recorded in Tacitus, *Annals*, 14.17. For a discussion of the riot, see Moeller 1970: *passim*.

¹³⁹ Berry 2007: 228.

The final aspect to be discussed here is the building industry, specifically the scaffolds and other objects they used while erecting buildings in the capital.¹⁴⁰ No matter the material involved, workers need to be able to manoeuvre the materials into place and work on them once they were there. For example, if moving stone blocks, wooden cranes with winches and pulley systems were needed, while ladders and scaffolding would be needed for working at any height.¹⁴¹ There would also be a host of associated equipment needed for building, including buckets and instruments with wooden handles, amongst others. The wood and rope, as well as all the other paraphernalia associated with building, would be a good source of fuel and would help a fire to spread across areas otherwise lacking flammable material.

The risk posed by construction would vary according to the frequency of it at Rome. We know of periods of particularly extensive construction, usually following major urban disasters such as fire and flood.¹⁴² However, construction was probably undertaken on a smaller scale for a large part of the year, given that a city is a constantly evolving organism, with parts being added or updated almost constantly. The guild of builders at Rome was the largest *collegium* in the city, with around 1330 members in the late second century.¹⁴³ Presumably its size at least partly reflects the amount of construction work being undertaken. The guild at Ostia was also of a large size in the second century, having around 350 members at a time when the whole town was largely rebuilt.¹⁴⁴ Building work may have contributed to the ability of a fire to spread in the city significantly, particularly at periods of extensive reconstruction.

Factors preventing fire spread

The river Tiber was one of the principal features of the city of Rome that prevented the spread of any fires that occurred. This is because the river acted as a natural fire break. The only way a fire could cross the river Tiber was to burn across one of the bridges or find some way of spreading to Tiber Island and from there to the opposite side. There is no evidence of any fires in the stratigraphy of Tiber Island, suggesting that a fire

¹⁴⁰ On construction work in the city of Rome, see DeLaine 2000: *passim*.

¹⁴¹ On cranes, winches and pulley systems used in the ancient world, as well as scaffolding and ladders, see Adam 1994: 43-51 and 81-87.

¹⁴² Major fires include those of AD 64, 80 and 192; see Appendix I for details of these fires in the ancient literature. For the dates of major floods in the city, see Aldrete 2007: 14-33.

¹⁴³ DeLaine 2000: 121.

¹⁴⁴ DeLaine 1996: 165.

never spread across the Tiber in this manner.¹⁴⁵ Also, by the first century BC most of the bridges that crossed the Tiber were made of stone.¹⁴⁶ The presence of the Tiber meant that Region XIV would be protected from any fires that occurred elsewhere in the city, as they simply were unable to cross the river. Likewise, any fire that began in Region XIV could not spread to other parts of the city and would be confined to this region.

In this respect the Tiber acted in the same manner as the Thames River during the Great Fire of London in 1666. The Thames was the natural barrier that contained the limit of the fire southwards. The Thames and Fleet rivers were vital in the plan to contain the fire that was drawn up by King Charles II and his brother the Duke of York. They intended to use these as natural fire breaks. The Duke knew the fire could not cross the Thames without a change in the direction of the wind, while it was hoped that the Fleet would be able to check the westward progress of the fire. The plan failed because the Fleet was not wide enough, given the strength of the wind, to prevent burning debris being blown right across it and thereby allowing the fire to keep spreading westward.¹⁴⁷

Another factor that may have played a role in preventing fire spread was the Servian Wall (and possibly later the Aurelian Wall, although this is harder to ascertain). That this may have limited the extent of fires is seen through a number of pieces of evidence connected with the fire of AD 64. First, the direction of the wind meant the fire was blown straight towards the Servian Wall and yet, as far as we can tell, nothing outside this was damaged, the fire instead following the available fuel through the Forum Boarium to the Palatine. If Tacitus' statement that four regions of the city were undamaged is true, the most likely were Regions I, VII, IX and XIV.¹⁴⁸ The first three of these were the northernmost regions, while XIV was protected by the river, and perhaps the Servian Wall provided a further layer of protection. It is worth noting that all four of these regions were outside the wall. The Servian Wall might have acted like

¹⁴⁵ Taylor 2000: 145

¹⁴⁶ See Taylor 2000: 133-154 on bridges across the Tiber.

¹⁴⁷ See Tinniswood 2003: 75-76.

¹⁴⁸ Tacitus, *Annals*, 15.40. Miller 1973: 91 suggests XIV, V, I, VI and VII as regions possibly spared from the fire although makes no final conclusion regarding which four. It is not clear why he discounts IX but includes V, given that just because the fire was stopped at the foot of the Esquiline does not mean that Region V suffered no damage whatsoever. Warmington 1969: 123 and Griffin 1984: 129 insist the regions spared were I, V, VI and XIV.

a fire break or the *vigiles* might have used it as an organisational tool around which they structured their response to fighting the fire. The walls of London during the Great Fire of 1666 served both purposes.¹⁴⁹ In this case, however, the fire did escape the walls partially at Ludgate Hill, but was quickly brought under control.¹⁵⁰

Large concrete structures that formed part of Rome's urban landscape might also have helped to contain the spread of fires in the capital. The two principal types of building that might have played a role here are the Imperial *thermae*, and the *horrea* of the capital. There were eleven *thermae* in the capital and over 330 *horrea*, although not all of these necessarily were big enough to help slow the spread of a fire.¹⁵¹ There was little in the construction of *thermae* that would burn during a fire. For the most part these buildings were constructed of brick and concrete, and did not even possess wood for roofing, as they were vaulted with concrete. Such construction means that the only flammable material was anything in the grounds or the building itself (such as a library or fuel stockpile). This did not mean that *thermae*, and bath buildings generally, were immune from fire. There are inscriptions recording the restoration of bath houses following fire, even of the large Imperial *thermae*. This is because particularly ferocious fires would still damage a structure, even if only aesthetically.¹⁵² However, while not completely immune they still formed a bulwark around which fire-fighting operations could be organised. If less people were needed to fight a fire when it reached such a structure, this might have helped by releasing people to fight the fire elsewhere, assuming a fire with multiple fire fronts or an extended one.

Similarly, *horrea* were largely constructed in brick and concrete and, as such, would offer a level of protection in comparison to the *thermae*. However, there are a number of features of *horrea* that means they might not be as effective at slowing the spread of a fire. First, given the sheer number of these recorded in the regional catalogues, some of these were surely quite small in comparison to others. Second, at least some, if not all, of these *horrea* were roofed in a conventional way, with either a

¹⁴⁹ Porter 1996: 53; Tinniswood 2003: 4. The walls of London enclosed an area of 677 acres (just over one square mile) on the north, east and west sides, with the Thames forming a natural barrier to the south. This area housed roughly 80,000 people.

¹⁵⁰ Porter 1996: 37; Tinniswood 2003: 127-128. Only around 76 acres within the walls escaped the fire while in total over 430 acres were completely destroyed.

¹⁵¹ The number of *thermae* is recorded in the *Curiosum* and *Notitia* 8 (p. 569); *Breviarium* 24 (p. 573). The exact number of *horrea* is 335 and results from adding the number for each region in the catalogues.

¹⁵² See Chapter 3.

flat or pitched roof made of wood. This would be a natural weak spot that a fire might exploit, either by finding a way to the roof from the ground, or by hot embers and debris landing on it from above. This may be why there are laws preserved in the *Codex Theodosianus* relating to keeping free space around *horrea* and ensuring that any private buildings adjoined to these are removed.¹⁵³ Finally, the evidence of Suetonius suggests that those fighting fires might not have viewed these as useful impediments to a fire's spread. The *horrea* at the foot of the Esquiline were destroyed by people in order for Nero to get land for his Domus Aurea, although Suetonius's description suggests an organised attempt to fight the fire.¹⁵⁴ This implies that those destroying these did not view *horrea* as being effective at halting the spread of a fire.

The final factor that might have helped to prevent, or at least to slow, the spread of fires at Rome is the large open areas, principally the city's *horti*. There were over 50 of these in the city, although in the same manner as the *horrea*, some of these were not big enough to help slow the spread of a fire.¹⁵⁵ The other feature of such gardens is that they possessed flammable material in the form of plants and trees. However, these would burn slowly in comparison to other features of the Roman urban landscape, particularly at wet periods of the year, where any fire would cause these to smoulder for an extended period offering an opportunity to extinguish the blaze.

The fire of AD 64: A case study in fire spread

Many of the points discussed above have been largely abstract. An actual example, highlighting many of the points made here, will help to understand how a fire might have spread throughout Rome. Topography, the construction of the urban landscape, the forces of nature, all of these are factors that played a part in any fire that occurred in the city. The fire of AD 64 is the best example to highlight all of these various factors given the amount of detail we have concerning this fire.

There is no need to repeat the narrative of the fire here.¹⁵⁶ We can build some idea of how the fire spread throughout Rome through some of the information given, even though none of the extant narratives relate precisely how the fire spread. What are

¹⁵³ *CTh.* 15.1.4; *CTh.* 15.1.38; *CTh.* 15.1.46. The intention of these laws appears to be the creation of 'fire-free' zones around such buildings.

¹⁵⁴ Suetonius, *Nero*, 38.

¹⁵⁵ The various *horti* are discussed in the *LTUR*, s.v. *Horti*.

¹⁵⁶ The extant narratives of the fire can be found in Appendix I.

the principal pieces of information that can help us build a picture of the spread of the fire? We know the fire started in a shop on the side of the Circus Maximus facing the Palatine and Caelian hills. We know that the fire spread along the length of the Circus. We have the names of a number of buildings destroyed by the fire, and these are located throughout the city. We know that the fire occurred in July AD 64, at the height of summer, and was accompanied by a strong wind. Let us now use this information to build a picture of how this fire spread in the city.

First, Tacitus provides us with a list of prominent structures destroyed by the fire; the temples dedicated to Luna, Jupiter Stator, and Vesta, as well as the Ara Maxima and the Regia.¹⁵⁷ Tacitus also provides information regarding the starting place of the fire.¹⁵⁸ If we plot these locations on a map we can build a picture of the extent of the fire.

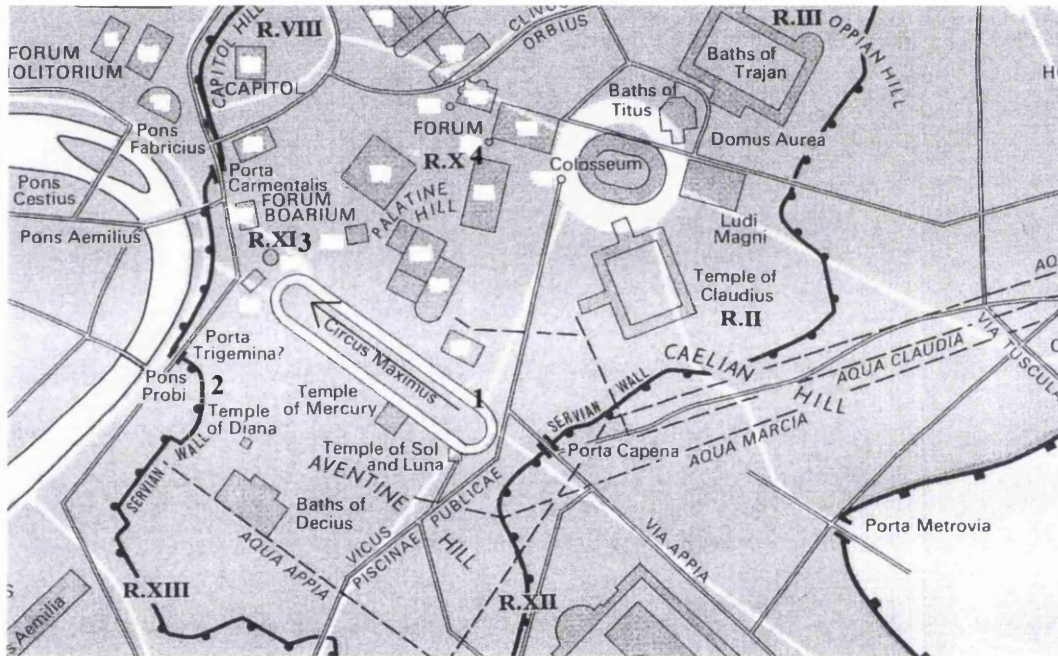


Figure 4: Map of Rome showing key features of the fire of AD 64 (adapted from Hammond 1981: Map 19b)

The key to this map is as follows; number 1 represents the starting location of the fire; the arrow represents the direction the fire travelled due to the wind; numbers 2, 3 and 4 all represent the location of buildings damaged by the fire.

¹⁵⁷ Tacitus, *Annals*, 15.41.

¹⁵⁸ Tacitus, *Annals*, 15.38.

The temple of Luna is the closest identifiable structure to where the fire began, located as it was on the Aventine Hill above the Porta Trigemina.¹⁵⁹ The Ara Maxima was located in the Forum Boarium.¹⁶⁰ The temple of Vesta and the Regia were both located in the Forum Romanum.¹⁶¹ The final structure listed, the temple of Jupiter Stator, is the most problematic, as there were two temples dedicated to this aspect of Jupiter. One of them was near the Clivus Palatinus, while the other was located in the Campus Martius near the Circus Flaminius.¹⁶² The temple meant by Tacitus is likely to have been the former rather than the latter for two compelling reasons: first, the former temple was located in the Forum Romanum close to other structures destroyed; second, the latter temple was located in the Campus Martius. This was the place where Nero decided to house those made homeless by the fire. The Campus Martius would be an unusual choice for housing people if it had suffered damage, as survivors might not feel safe in an area where the fire had occurred.

Before analysing what the fire of AD 64 highlights concerning the points made here about fire spread, let us briefly review the damage caused. The Circus Maximus was probably wrecked by the fire and, if Tacitus is accurate, we have five other buildings that were destroyed; one on the Aventine, one in the Forum Boarium, and three in the Forum Romanum. This damage is important as it allows us to make an important deduction regarding the fire; the direction of the wind on the night it broke out. Given the location Tacitus provides for the start of the fire, his claim that it swept the length of the Circus, and the fact that the Temple of Luna was burned, we can conclude that the wind was blowing from either the east or (more likely) the south-east.

The role of nature in helping propagate the fire is highlighted well by this example. The role of the wind is given especial prominence by Tacitus, primarily because this was probably one of the key reasons the fire was able to spread as far and as fast as it did. The influence of a strong wind on other fires in history is noticeable, particularly that of the Great Fire of London in 1666.¹⁶³ However, this was also noted in antiquity. For example, Pliny the Younger notes the role of the wind in helping to

¹⁵⁹ *LTUR*, s.v. Luna, Aedes.

¹⁶⁰ *LTUR*, s.v. Forum Boarium.

¹⁶¹ *LTUR*, s.v. Regia and Vesta, Aedes.

¹⁶² *LTUR*, s.v. Iuppiter Stator, Aedes, Fanum, Templum and Iuppiter Stator Ad Circum.

¹⁶³ Porter 1996: 27.

spread the fire of Nicomedia during his time as governor of Bithynia-Pontus.¹⁶⁴ However, the wind was not the only part that nature played in the drama of the fire of AD 64. The time of year that the fire struck might also be important, as it was summer. Mid-July would probably be hot and dry, meaning that timber would catch fire much more easily, as it contained less moisture, than at wetter times of the year. The dry time of the year might also have meant that there was not as much water flowing into the city through the city's aqueducts, impacting on the ability of anyone trying to fight the fire.¹⁶⁵

What else can the damage tell us about the fire and how it spread within the city? The locations of the various buildings destroyed give us some boundaries to the destruction; the fact that the fire was stopped at the foot of the Esquiline allows us to add a further boundary.¹⁶⁶ The lack of damage across the Tiber in Region XIV confirms the role of the river as a natural firebreak, and one that held despite the strength of the wind blowing that way in the initial stages of the fire. The destroyed buildings listed by the sources reveal a lot more than simply what was damaged. We can use these to establish how the fire spread and the order in which these buildings were damaged. Due to knowing the location where the fire started, we know that the Circus Maximus was the first building to suffer significant damage.

The direction of the wind provides the route in which it spread, heading towards the Forum Boarium. As it spread this way, the fire also affected the Aventine, destroying the temple of Luna. It then reached the Forum Boarium and spread through this destroying the Ara Maxima. As it could not continue to spread north-westwards, it then followed the fuel available to it and spread up and over the Palatine Hill, then down into the Forum Romanum. Here it destroyed the temples dedicated to Vesta and Jupiter Stator, as well as the Regia.

This damage should also help us to ascertain the three regions Tacitus describes as being levelled by the fire.¹⁶⁷ Region XI was where the fire started and given that we know the fire swept the length of the Circus Maximus it was probably one of the three. Similarly, Region VIII is an area which contained a number of buildings reported as

¹⁴ Pliny, *Epistulae*, 10.33.

¹⁵ This is discussed in greater detail in the section on water supply in chapter 5.

¹⁶ This is confirmed in Suetonius' account of the fire (*Nero*, 38).

¹⁷ Tacitus, *Annals*, 15.40.

destroyed (as well as others that might have suffered damage in order for these others to be destroyed) and was probably another of those Tacitus considered to have been levelled. Which region was the third?¹⁶⁸ Although we know of the destruction of the Temple of Luna on the Aventine, the probable spread of the fire argues against this being the one meant. Also, despite the destruction of *horrea* at the foot of the Esquiline, there is no suggestion the fire spread up the hill.¹⁶⁹ The probable answer is Region X. Tacitus states that Nero's palace on the Palatine Hill was destroyed, possibly by the fire spreading up the hill from the Circus Maximus and then down into the Forum Romanum. This makes the most logical sense given the destroyed buildings Tacitus records and their locations. There are also other considerations limiting the possibility of many of the other regions being amongst those destroyed, notably the area where those made homeless were located (the Campus Martius) and the absence of buildings destroyed in these other regions by any of the sources for the fire.

Conclusion

Although only a limited summary of some of the principal uses of fire at Rome, it should be clear from this that they used fire fairly extensively. In both a private and a public context, fire was used for a number of different tasks; to provide warmth and light; to cook food, particularly bread; and to allow urban-based artisans and craftsmen to earn a living. Given the frequency with which such tasks were undertaken daily, it is easy to see that accidents could occur and cause serious fires. This might be especially true of tasks such as heating, cooking and lighting.

However, it should also be clear from this that it was not simply that fire was being used that caused conflagrations in the capital. It was also the ready access to flammable material near to the source of fire that was needed for one to break out, and then further nearby flammable material to allow a fire to propagate itself. This is why an analysis of the flammable material found in houses and the wider urban landscape at Rome is warranted. Fires began in the ephemera of people's lives, but to be truly

¹⁶⁸ There is debate concerning this in modern scholarship. Miller 1973: 91 suggests XI, X and IV although he does not explain how the fire would have destroyed the Subura (Region IV) without destroying at least some of the Forum Romanum (Region VIII) which we know suffered significant damage. Interestingly, both Warmington 1969: 123 and Griffin 1984: 129 argue that it was Region III that was destroyed along with X and XI, although again they do not explain their decision.

¹⁶⁹ Suetonius, *Nero*, 38.

destructive to Rome it needed the timber and other flammable material found throughout the city.

However, Rome was not simply a tinderbox waiting to burst into flames. There were a number of features of the city that prevented fires from spreading, or at least slowed their progress. The analysis of the spread of the fire of AD 64 highlights a number of the issues raised in this chapter and reveals how a fire behaved in the city, and how those features that stopped or slowed fire spread worked. It also reveals a final important aspect often overlooked, namely the role of nature. Part of the reason the fire was so devastating was because of the time of year at which it occurred (summer, when the heat may have meant that little moisture was retained in the timber used in structures) and because of the role of the wind. This latter feature both helped to fan the flames in the early stages of the fire, and to spread the fire front by carrying hot embers and burning debris in front of it.

This chapter has shown the sources of a fire, what burns and how one spreads, as well as revealing features that prevented or slowed the spread of one and analysed a specific example of this at Rome. Now we must turn our attention to the damage caused by a fire, both to the fabric of the city and its inhabitants.

Chapter 3: Fire Damage

Having looked at how a fire begins in a confined space, spreads to engulf this space, the building and then spreads out into the wider urban landscape, we now need to examine its immediate aftermath. The damage fires left behind was not confined to the structures that formed the urban landscape. People would also suffer injury, which might lead to death (either immediately or at a later date) or permanent scarring. Smoke from fires could also cause spoilage of foodstuffs and other items found in urban settlements. A final type of damage is that caused to the minds of people; psychological damage could affect both the survivors of fire, and perhaps more generally, members of the *vigiles*.

Damage to structures following a fire

There are several references to the damage caused by fires in antiquity, although these are normally linked to specific fires. Frontinus, however, makes a more general comment regarding the damage caused by fires:

Omnes aquae diversa in urbem libra perveniunt. Inde fluunt quaedam altioribus locis et quaedam erigi im eminentiora non possunt; nam et colles sensim propter frequentiam incendiorum excreverunt rudere.

All the aqueducts arrive in the city at different levels. Therefore some flow in higher places, while others cannot be raised to the more eminent regions; for even the hills have gradually grown with the rubble from frequent fires.¹

This is an interesting comment, as it suggests that the debris from fires was often not removed, but merely levelled and built over. The raising of the ground level is seen at Rome and elsewhere. Following the fire of AD 64, the ground around the *Meta Sudans* was raised by 4-5 metres by burying fire debris, while the Area Sacra of the Largo

¹ Frontinus, *On Aqueducts*, 18.

Argentina was similarly raised following the fire of AD 80.² Evidence of buildings being demolished in order to allow for reconstruction or remodelling exists. For example, excavations at the Villa at Oplontis revealed such evidence. In one trench (OP3) there was a variety of debris, including wall-painting, architectural stuccos and a section of brick column, suggesting that this part of the villa had been demolished prior to reconstruction.³ The rebuilding was to take place over this debris.

The actual damage caused to the fabric of the urban landscape was the most obvious sign that a fire had occurred, but even when this damage was repaired, evidence of it might remain. This can allow us to reconstruct the damage caused by the fire. The best surviving example is the fire at the Colosseum in AD 217. According to Dio's account, the Flavian amphitheatre was entirely destroyed, and he notes that, for an unspecified number of years, gladiatorial shows were held elsewhere.⁴ Jerome's brief note concerning the fire suggests that the building was entirely destroyed.⁵ However, its remains tell a very different story to that of the extant literature, while numismatic evidence allows us to answer the question of how long the Colosseum was out of use.⁶

According to both Dio and Jerome, this fire was the result of lightning striking the amphitheatre's upper structure. While there is no specific evidence of a lightning strike in the remains, the damage pattern (discussed below) is consistent with the damage expected from a lightning strike. So what is the nature of that damage? How can we distinguish the original structure from the repairs made following the fire?

The difference between the original and reconstructed parts can be seen primarily from the different materials used. The original Flavian builders used bricks that varied in colour from yellow to pink. They also used pale yellow coloured *caementa* of *tufu giallo*. The Severan builders, however, used different coloured bricks and different *caementa*. Their bricks varied in colour from pink to dark red, while the

² Panella 2011 (AD 64); *NTD*, s.v. Area Sacra di Largo Argentina; *LTUR*, s.v. Feronia, Aedes; Claridge 2010: 215-219 (AD 80). These two examples are discussed in more detail below.

³ Thomas and Clarke 2009: 358.

⁴ Cassius Dio 79.25.2-3.

⁵ Jerome, *Chronicle*, 296b. Jerome dates this to the following year, but this almost certainly refers to the same event as, despite not mentioning lightning, he does state that this took place during the Vulcanalia, the same time of year that Cassius Dio states this occurred.

⁶ The following is based on the work of Lancaster 1998.

caementa they used were orange-brown *tufo lionato*.⁷ These distinctive characteristics of the materials used in construction before and after the fire allow for easy identification of those rebuilt parts.

There are other features of the Colosseum that allow original construction to be distinguished from Severan reconstruction. One of these is construction technique. The brick ribbing used to reinforce the vaults supporting the stairways reveal a distinct difference between the Flavian and Severan periods. In the original construction, the builders used ribbing of *bipedales*, while in the later reconstruction lattice ribbing was employed.⁸ Materials and construction techniques both allow identification of reconstruction compared to original construction, but there is a further feature that allows for ease of identification. This is the presence of robber-holes created by the removal of iron clamps and dowels during the medieval period. These holes are present in the Flavian parts of the structure, but absent from the Severan ones, as such clamps and dowels were not part of the construction technique employed. The medieval robbers were clearly aware of this difference.⁹

We can now build a picture of the damage caused by the lightning strike. Damage on Level III of the structure can be clearly seen between bays 34 and 60, while on Level I damage can only be found between bays 40 and 47.¹⁰ This indicates a damage pattern that was wider in the upper parts of the structure, diminishing down the structure to ground level. The damage pattern caused is V-shaped, wider at the top and narrower at the bottom. Such a damage pattern is consistent with a lightning strike, but also consistent with the nature of the structure and the location of fuel within it. For example, large quantities of fuel were present in the highest part of the Colosseum due to the presence of the *velum* and the paraphernalia required for its operation. This could also explain the extent of the damage on the upper levels, as the collapsing *velum* may have caused additional structural damage. As the fire progressed downwards, there was less fuel available and, as such, the damage was progressively less severe. This damage pattern suggests that the fire that caused this began at the top of the Colosseum, consistent with a lightning strike.

⁷ Lancaster 1998: 148-149.

⁸ Lancaster 1998: 153-154.

⁹ Lancaster 1998: 153.

¹⁰ Lancaster 1998: 149-151 and 159-160.

To assess exactly how long the Flavian amphitheatre was out of action, we must rely principally on numismatic evidence. The fire occurred in AD 217. According to the *Historia Augusta*, repairs were carried out to the Colosseum by both the emperor Elagabalus (AD 218-222) and his successor Alexander Severus (AD 222-235).¹¹ The latter minted three coin issues with representations of the Colosseum. These were a *denarius*, a *sestertius*, and an *as*.¹² Given that these were all issued in AD 223 and the representation of the amphitheatre probably commemorated its restoration, it seems likely that it took around six years to restore it to use.¹³

While this is a good example of fire damage, it is not representative of damage that would be found more commonly, as most fires were not started by lightning strikes. Also the Colosseum is hardly representative of the majority of structures that made up the urban landscape of Rome. There is good evidence for damage associated with the fires of AD 64 and AD 80, but we can also look elsewhere for such evidence. Roman Britain provides two good examples of fire damage, one from Verulamium and the other from Fishbourne. The fire at the former caused widespread damage throughout the whole town, while that at the latter damaged only one particular wing of the villa.

Archaeological excavation conducted in Rome in the last few decades has provided some vivid evidence of fire damage and reconstruction. Two examples of this, in particular, appear to relate to fires well-known from historical evidence. The first is the damage from the AD 64 fire found under the Piazza del Colosseo and on the slopes of the Palatine facing the Colosseum.¹⁴ The burned remains of a number of buildings were found here, buried under layers of building material and debris. There is also evidence for the destruction of the *Meta Sudans* at this time. This fountain was originally constructed by Augustus, in the south-west corner of the modern piazza. Its remains were preserved in the foundations of a building that formed part of the Domus Aurea complex that was constructed in this area following the fire. The *Curiae Veteres* sanctuary opposite the *Meta* on the lower slopes of the Palatine was also destroyed at this time. The travertine steps leading to the sanctuary show evidence of burning, as does the travertine and peperino paving of one of the entrances.

¹¹ HA, *Heliogabalus*, 17.8; *Alexander Severus*, 24.3.

¹² RIC IV pt.2, 64, nos. 33, 410 and 411.

¹³ Lancaster 1998: 146.

¹⁴ The following is drawn from Panella 2011.

The *domus* that were on the slopes of the Palatine also show evidence of the destruction, along with the shops that formed part of this complex. The sudden onset of the fire meant that evidence of the activities taking place in these structures was preserved. For example, the front part of an excavated shop was used for display; the fire left evidence of the collapse of a wooden shelf near the entrance on which lamps and ceramic vessels were placed. In the rear of the shop paint pigments were being prepared, shown by a number of containers with calcite, hematite and galena and the iron nozzles of two bellows. The fire destroyed the house at a time when it was being renovated; there were amphorae containing plaster, as well as marble tiles and mosaic tesserae left ready to do the work.

This part of the city was incorporated into the grounds of the Domus Aurea, and before any construction relating to this could take place, the site had to be cleared and levelled. This entailed raising the ground level of the site by 4-5 metres, a task achieved by using the debris from the fire. The *Meta Sudans*, for example, was covered by a mass of pottery; some 30,000 potsherds were recovered during excavation, roughly equivalent to 1000 complete vessels.

Another example of fire damage and repair attested in relatively recent excavation is in the area of the Crypta Balbi, whose evidence of reconstruction during the Flavian period and early second century was almost certainly due to damage caused by the fire of AD 80.¹⁵ Besides evidence of reconstruction of the Crypta itself and the adjacent Porticus Minucia Frumentaria, the excavations revealed that the pavement of the latter was laid on a foundation of rubble including re-used marble fragments, interpreted by the excavator, Manacorda, as rubble from the fire damage.¹⁶ The nearby Area Sacra of the Largo Argentina also shows evidence of rebuilding attributable to this fire. This included a repaving of the whole area in travertine, at a higher level than the original tufa paving, and reconstruction of the temples there.¹⁷ For example, Temple C (possibly the Temple of Feronia) had a new cella constructed in brick, new travertine column bases, and new travertine steps at the front to accompany the new paving level.¹⁸

¹⁵ Manacorda 2001.

¹⁶ Manacorda 2001: 30-31.

¹⁷ *NTD*, s.v. Area Sacra di Largo Argentina; Claridge 2010: 215-219.

¹⁸ *LTUR*, s.v. Feronia, Aedes.

The fire at Verulamium occurred during the reign of Antoninus Pius. It is not mentioned in any literary text and the dating of the fire can only be confirmed to the reign of this emperor; a more precise date cannot be arrived at. The debris itself gives us an indication of the date, based on coins that are found in the destruction level. There is a coin of Antoninus Pius dated to AD 139 and one to Faustina II dated to AD 145/146, but nothing later than these (apart from some coins from the third and fourth centuries AD in disturbed layers, which can be discounted).¹⁹

Of the damage itself, the shops in Insula XIV were half-timbered and when the fire destroyed them it left behind a thick layer of burnt daub.²⁰ In room 23 there is evidence that the ceiling collapsed during the fire; there were burnt timber lying on the *opus signinum* with a beam on top of the planks.²¹ There is also evidence of personal items or goods for sale destroyed by the fire. In rooms 7 and 25A there was evidence of melted glass and pieces of bronze fused to the stone.²² Given that glass does not melt until around 1400°C (dependent on its exact composition) this evidence is vital in allowing us to establish a minimum peak temperature for the fire.²³ Further evidence of personal items or merchandise destroyed in the fire is found in room 55; there were a number of broken objects including three coarse-ware lamps a glass vessel containing purple pigment, two glass beakers, and two large and two small flagons, amongst other items. These were all broken and located predominantly near the north-west and south-west walls, suggesting that they were on shelves and were broken when the shelves collapsed and these items hit the floor.²⁴

Insula XIV at Verulamium provides the best evidence of the damage caused by the fire during the Antonine era, but damage was not confined to this insula alone. The fire was a major one and affected large parts of the city. Frere notes evidence of damage from the northern Monumental Arch southwards as far as Insula III, a distance of 760 metres; at least 50 acres were destroyed.²⁵ It would be interesting to know both what caused the fire and how it was finally stopped. Was it brought under control by

¹⁹ Frere 1972: 90 and 97-98. Of the coins the former was lost, while the latter was heavily damaged by fire and later corrosion for its condition to be clear.

²⁰ Frere 1972: 73.

²¹ Frere 1972: 75.

²² Frere 1972: 76.

²³ Williams 1988: 5.

²⁴ Frere 1972: 80-81.

²⁵ Frere 1983: 13.

the inhabitants or did it just burn itself out? Frere notes that it did not spread up the hill into Insulae XXII, XXI, or XX and given that fires spread faster uphill, this suggests there was insufficient fuel to allow the fire to spread.²⁶ As for the cause of the fire, Frere viewed it as an accident; the amount of property left in the buildings suggests it was unexpected and the lack of any damage to any of the neighbouring villages rules out deliberate raiding or rebellion by British tribes.²⁷ Frere's conclusion is the most plausible, given that arson is the only other option; without more data the latter explanation is always the more unlikely.

A final noteworthy point regarding Verulamium is its recovery following the fire. Such a catastrophe did not lead to the decline of the city, but instead reinvigorated it. It was rebuilt following the fire, and in this reconstruction masonry walls and tile roofs predominated. This was presumably in an effort to avoid such a serious fire in the future.²⁸ The layout of the city was also changed at this time. For example, a new street running from the forum to the theatre bisected Insula XIV.²⁹ Overall the fire provided the loss of property and buildings (and possibly lives), but also gave a chance for something new, and possibly better, to emerge.

The fire that occurred in the North Wing at Fishbourne at the end of the third century AD provides a lot of information relating to the destruction of an individual building. At the time the fire occurred, the building was undergoing a series of alterations. The fire here is very interesting. Cunliffe argues that it began in the roof and that as this burned the lead fittings melted and dripped to the floor to form large puddles. After this, the roof timbers gave way under the weight of the tiles above and the roof collapsed to the floor. Interestingly, the fire continued to burn, as the mosaic floor is discoloured from this.³⁰ The evidence of the lead melting and dripping on the floor again allows us to posit a minimum peak temperature for the fire at 327.5°C, as this is the temperature at which lead melts.³¹ The collapse of the roof left a layer of charred roof timbers, nails and fragments of roof tiles discoloured by the fire. Cunliffe shows that this debris layer was disturbed in antiquity, suggesting that the occupants returned and raked through the debris removing any complete roof tiles they found, as

²⁶ Frere 1983: 13.

²⁷ Frere 1983: 13-14.

²⁸ Frere 1983: 14-16.

²⁹ Frere 1972: 98.

³⁰ Cunliffe 1971: 187.

³¹ <http://www.chemicalelements.com/elements/pb.html> (accessed 17/08/2012).

well as any other articles of value.³² The fire and the collapsing roof must have caused significant damage to the structure, but the robbing of the walls means this question cannot be answered. Surviving wall plaster reveals that the walls were not all scorched; some managed to escape the flame depending predominantly on how the roof fell and how the fire burned after it did.³³

Interestingly, following this fire, the North Wing was not rebuilt. The bath suite in the East Wing was also abandoned following the fire, despite the fact that it did not reach this. The East Wing continued to be occupied on a small scale, confined to rooms E 1-3. Cunliffe suggests that this occupation was by a gang of labourers who were undertaking the demolition of the site following the fire. This could have taken months or years and the men presumably slept and ate on site until the job was completed.³⁴

Overall, the fire was probably an accident, although the cause of the fire is difficult to ascertain. That it began in the roof is mostly confirmed by the evidence, particularly the puddles of lead on the floor. However, the question of how the fire started in the roof is difficult to answer. It is an unusual location for a fire to begin, without some external cause such as lightning and the damage is inconsistent with this. Perhaps it was the result of those working on the site; although again it is not clear what they were doing that caused a fire here.

Death and injury to people caused by a fire

When ancient sources discuss damage caused by fires, for the most part this only refers to damage to buildings. There is rarely any mention of people being killed by the fire. On the occasions when deaths are mentioned, no specifics are provided regarding who these people were or how many were killed overall. The reasons for this are unclear. It is possible that there was a lack of evidence available to ancient writers regarding this. It is also possible that they chose not to write about the victims of the fire. Why this might be the case is not clear; perhaps the social status of the victims was not high enough to make them worthy of being recorded. In some of the fires discussed in this work it is possible that there were no fatalities. It is also possible that people died of

³² Cunliffe 1971: 187.

³³ Cunliffe 1971: 188.

³⁴ Cunliffe 1971: 189-191.

their injuries at a later date and such deaths, therefore, went unrecorded. Ultimately, no certainty can be reached but we can make some inferences about casualties and the nature of injuries based on modern and historical data.

Most people who perish in fires do so because they are unable to escape. In a modern context, two calculations are involved. The first is Required Safe Egress Time (RSET), the time required to safely leave the structure from the start of the fire. The other is Available Safe Egress Time (ASET), the actual time available from the start of the fire to escape the structure. If the available amount of time is less than the required amount of time to escape, injury or death will likely result. Part of the problem with this, however, is that people are not always aware of the danger they are in and this can have a significant impact on their ability to survive. For example, during the Great Fire of London in 1666, a man went to St. Paul's cathedral during the fire to retrieve some of his property that had been deposited earlier in the fire and, while he was there, the fire began to threaten the cathedral. The man did not perceive the danger and consequently was killed by the fire.³⁵ There is no reason that such situations did not occur in the ancient world.

It would be useful here to read a survivor's experience of a fire, as this will highlight many of the points made here in a more concrete fashion, rather than the slightly abstract and theoretical manner discussed so far. The following is taken from the account of Lise Bohannon, a survivor from the Chicago Supper Club fire in May 1977:

My first recollection was black smoke just pouring over my head, and I think I was only about one or two steps down from the platform. Smoke just billowing over my shoulders. That led to somewhat of a rush of people trying to get down the stairs. And I remember that before I was even all the way down the stairs, this huge burst of flame that was so forceful, and smoke and so forth, just shot out of that doorway. People began to scramble to get out ... There were a lot of people still in the doorway who were trying to exit, but it became such a mess there, people were becoming entangled with one another. From what I recall, there was a metal section in the middle of that doorway, and one individual had his legs trapped around that. So it became very chaotic right there at that exit. A lot of people were there but could not get out, because the fire spread so rapidly. People were becoming overcome

³⁵ See Bell 1920: 177 for more details on this story.

with smoke and hung up with each other. Some people were pulled from the exit, but I remember just watching a lot of them die right there in the doorway.³⁶

This extract highlights a number of important features both in experiencing and escaping one, as well as revealing some of the principal causes of death and injury. The first point worth noting is that the first thing Lise Bohannon noted was the black smoke, and she mentions smoke twice before she notes anything else about the fire. This reveals the important and noticeable role of smoke during a fire, something that is only noted by one source regarding any of the fires at Rome.³⁷ The next point she makes is about the huge burst of flame from the doorway. This sounds like the flashover of the fire, as this event causes an explosion of flame outward from the compartment where the fire began. The panic and confusion of people trying to get out of the building, and the injury and deaths this caused are also worthy of note, as is the point regarding people being overcome by the smoke. This would vary from person to person, but could occur very quickly. A final point is that chance had a part to play concerning whether people survived a fire or not. Some of those who got to the exit were pulled clear and survived, while others got to the exit but were not pulled clear and died. Chance dictated this.

The three principal causes of injury and death during a fire are the flames, the smoke, and falling debris. Any of the three could cause immediate death, but this need not necessarily be the case. Flames might cause permanent scarring rather than death. Smoke could cause a variety of long-term respiratory conditions, any of which might lead to a death at a later date. Falling debris could cause a variety of long-term injuries, as well as paralysis, but could also lead to internal bleeding, killing an individual some time following the fire without necessarily being connected with it.

Death and injury caused by flames

Flames could result in the death of an individual during a fire, but it is more probable that they would cause permanent scarring rather than death. Flames would be a problem both for those caught in a fire, but also for those trying to tackle a blaze. There

³⁶ The full account can be read at <http://www.pbs.org/wgbh/nova/escape/survivors.html>.

³⁷ This is in Cassius Dio's account of the fire of AD 64, where he notes the confusing impact of the smoke and shouting on those trying to escape the fire (62.16.5).

are three different types of burn: superficial (first degree), partial thickness (second and third degree), and full thickness (third and fourth degree). Each of these has their own distinctive damage pattern and associated problems. Superficial, or first degree, burns, for example, tend to be confined to the top layer of skin (the epidermis) and for the most part are simply painful and require little assistance in order to heal. The only complicating factors with these are if they cover more than 25% of the body's surface area or if the person injured is very young or old.

Much more serious are partial and full thickness (or second, third and fourth degree) burns. These types of burn penetrate into the layers underneath the epidermis and, in the case of fourth degree burns, can penetrate through the muscle all the way to the bone. The problem with these types of burn is the treatment required. For example, second degree burns cause blisters, either clear or red depending on how deep the burn has penetrated (the latter indicating a deeper and more serious burn). In order for these to heal without scarring, these blisters need to be popped, but this has to be done in a sterile environment otherwise the person's injuries may become infected, causing further problems. If left to heal without medical assistance, infection might still occur and, in the latter case, skin excision might be required due to its contraction as it heals.

Third and fourth degree burns will not heal without extensive medical care in the modern world, including excising damage tissue or even amputation, particularly in the case of fourth degree burns. Without treatment both third and fourth degree burns can lead to death and, in the latter case, almost always will. Even with treatment, a patient is not guaranteed to survive. Given that there were no restraints to people setting themselves up as medical practitioners in the ancient world, it is possible that even those who received treatment did not survive it.³⁸ Amputations might also be more common in the ancient world, given that they possessed the tools to carry this out, but had neither the tools nor the technology to carry out other treatments needed with burn patients, such as skin grafts and reconstruction of damaged muscle.³⁹

³⁸ Jackson 2005: 97.

³⁹ Jackson 2005: 98-103 describes many of the instruments used in surgery, including those for amputation.

Death and injury caused by smoke

One of the biggest causes of damage to people in a fire is the smoke. One of the principal reasons people cannot escape a fire is that they are disorientated and cannot find their way to the exit. Fill a familiar area with smoke and it can quickly turn into something that is unrecognisable. Add the noise created by both the fire and other people being affected by it, and the disorientation can make a serious impact on people's survival.

A more important aspect of smoke, however, is the irritants and asphyxiants it contains. The impact of the former would primarily be on the issue of disorientation. These would principally impact the eyes and respiration. The smoke would restrict visibility, which would then be further reduced due to the eyes watering because of the soot particles in the smoke. Similarly, irritants would cause severe coughing and affecting breathing in general, possibly leading to panic, but certainly leading to further disorientation. All of this could impact a person's ability to survive a fire, but irritants themselves would not necessarily lead to death, merely create the conditions where death might occur.

Asphyxiants, on the other hand, would definitely lead to the death of individuals in a fire if the period of exposure is long enough. An important factor affecting the impact of asphyxiants on an individual is the increased carbon dioxide concentration present in the smoke. This would lead to an increase in respiration and therefore an increase in the rate of smoke inhalation, leading to a more rapid toxic response. While this is a fact, the harder question to answer is precisely what asphyxiants might be present. The most common ones in modern fires are carbon monoxide and hydrogen cyanide. The same is likely true of the ancient world. Carbon monoxide is the product of most fires while hydrogen cyanide is produced by the burning of substances such as wool and feathers. This latter gas is likely given the prevalence of animal matter making up much of the soft furnishings and their stuffing in the ancient world.

Carbon monoxide and hydrogen cyanide affect the body in different ways. Carbon monoxide achieves this by reducing the oxygen-carrying capacity of the blood by competing with oxygen for haemoglobin and subsequently forming carboxyhaemoglobin. Hydrogen cyanide, however, achieves this by inhibiting the

utilization of oxygen in cellular metabolism. Despite the differences the effect is the same. They both reduce the rate at which oxygen is metabolised in the blood, which is what causes death by asphyxiation.

Death and injury caused by falling debris

The other major cause of injury and death is falling debris. If a person was hit by a small piece of debris it would lead to immediate injury, such as a gash or a broken bone. It could also potentially cause death at a later date, for example due to an impact on the head causing a bleed on the brain. Larger items could lead to immediate death or severe injury, as well as an individual succumbing at a later point in time through internal bleeding. The other major danger would be from crush syndrome, the situation where someone is released from a fallen item of debris outside the critical fifteen-minute window.

It is possible that deaths such as these were not connected directly with the fire in which the initial injury and ultimate cause occurred. Picking up on a scenario posited above, if a piece of debris fell and hit someone on the head, they might walk out of a fire with what appears to be a mild injury. However, this person may die later due to a bleed on the brain and such a death may not necessarily be linked with the fire that caused it, as there would be few if any external signs of injury. Indeed the only external sign might be a small bump on the head. However, given Jackson's analysis of surgery conducted by Roman doctors to people's skulls suggests that such injuries may have been easily recognised by those with experience of head injuries.⁴⁰

Psychological damage

The physical damage caused by fire could leave obvious signs of injury, some of which might be long term leaving extensive scarring. What of the psychological damage caused by a fire? There certainly would be some trauma caused to the minds of some people, whether the survivors of the fire, who may have no external sign of injury whatsoever, or the *vigiles*, who may also have suffered some ill effects. What psychological problems might people have encountered? Exploring this psychological

⁴⁰ Jackson 2005.

damage caused by fire is an interesting and worthwhile exercise, as they provide an important additional thread to the study of fire and particularly the impact of major ones on Rome's population.

What type of psychological damage might a survivor suffer from? And would these be the same for the *vigiles*? Perhaps the most obvious psychological damage would be post traumatic stress disorder (PTSD). This is defined as any experience that exposes an individual to a traumatic event whether there is a threat of death or serious injury, either to the person directly or to others.⁴¹ Both survivors and members of the *vigiles* might suffer from PTSD, but there is other psychological damage that probably would be confined to the *vigiles* rather than survivors, in the form of occupational stress.

Occupational stress might be something that members of the *vigiles* suffered from, although this is something that is difficult to assess in some ways. This is because we do not know how often the corps faced highly stressful situations. It is probable that members of the *vigiles* suffered from this to some extent, as fire fighting was and remains a highly stressful occupation.⁴² This type of stress would not be experienced by survivors of fire, as it is something that only those who face the same or a similar situation regularly over an extended period of time. Occupational stress normally manifests in reduced performance of one's job, as well as changes in attitude and behaviour, including insomnia and aggressive behaviour.⁴³

The principal form of PTSD that might affect both groups comes from survivor guilt. There are two forms of survivor guilt; existential survivor guilt and content guilt. The former was first identified following a fire the Cocoanut Grove club in Boston in 1942 and is characterized by the survivor's confusion over having survived and what this means.⁴⁴ The latter type of survivor guilt is the result of a person having done something in order to ensure their survival, such as not responding to someone's plea for help, making a decision that resulted in the deaths of others, or seeking refuge when

⁴¹ Hetherington 2001: 41.

⁴² Gist and Woodall 1999: 223.

⁴³ Gist and Woodall 1999: 218-219.

⁴⁴ This form of guilt was first identified by Cobb and Lindemann 1947. A good summary of their conclusions can be found in Williams 1988: 323. For the Cocoanut Grove fire itself, see Schorow 2005 and Esposito 2006.

others were suffering.⁴⁵ While both of these two forms of survivor guilt might affect both groups, the *vigiles* were less likely to suffer from existential survivor guilt, partly because they were exposed to traumatic events more regularly, but principally because unless a member of them was killed there was little reason to question why they lived when someone else died.

Psychological damage to survivors

Survivors might suffer from a number of psychological problems following a fire caused by the stress of having survived. To get some idea of what survivors might experience both during and after a fire we need to look at an account from someone who escaped one. Again we need to turn to Lise Bohannon's survival account:

A lot of people were there but could not get out, because the fire spread so rapidly. People were becoming overcome with smoke and hung up with each other. Some people were pulled from the exit, but I remember just watching a lot of them die right there in the doorway ... I lost three friends, two women who were also cocktail waitresses in the Cabaret room, and a male bartender. Within that next week, or week and a half, I guess I attended ten funerals, one right after another.⁴⁶

This account reveals a number of things regarding the psychology of surviving a fire. The first of these is the stress of trying to escape the fire in the first place, not just of escaping the smoke, heat and flames, but of watching others succumb to these while you try to escape. This stress would be heightened by thoughts of whether to stop and try to help those who stumble, and whether that decision might be the one that kills you. Seeing people, especially friends or loved ones, die in front of you adds another dimension to this stress and emotional turmoil. Following escape, survivors then have to deal with the aftermath of the fire. Lise Bohannon attended ten funerals in a seven-to-ten day period, essentially one a day for ten straight days. This would be emotionally draining, particularly those of the three friends she mentions, and she perhaps would replay her escape in her mind. Her case is a perfect candidate for existential survivor guilt, of questioning why she survived when others did not. Some in her situation might even suffer content guilt also in this case, asking themselves if

⁴⁵ Williams 1988: 323.

⁴⁶ See above, n. 36.

there was anything they could have done differently if people were begging for help and they ignored these pleas or felt powerless to help.

What form would such psychological damage take and how would it manifest itself? It can include intrusive thoughts and images of the event, a sense of numbness, hyperalertness, or avoidance of reminders of events and can manifest itself in depression, anxiety, substance abuse, chronic exhaustion and significant deterioration of work performance and social interactions.⁴⁷ There may also be shifts in a persons' behaviour.⁴⁸ People suffering from this would normally be treated through a combination of therapy and medication, but such options were unavailable in antiquity.⁴⁹ It is unclear what type of coping mechanism those suffering from this turned to; substance abuse is perhaps the most likely, only because alcohol was readily available in the Roman world. Other types of coping mechanisms, such as engaging in high risk activities such as extreme sports, were unavailable to those survivors of fires in antiquity, hence the argument that alcohol abuse was most likely.

There is one example from antiquity where an author actually mentions the state of the survivors. This is following an earthquake and fire at Antioch in AD 525. Regarding the survivors, John of Nikiu records that they remained in their houses and wasted away, lacking the motivation to do anything.⁵⁰ This is possibly a manifestation of some form of psychological trauma (possibly PTSD) although there are problems with this source, as it was written long after the event and the sources on which John of Nikiu relied are no longer extant. This could also be a literary *topos* to highlight the extreme devastation caused to Antioch at this time.

Psychological damage to the *vigiles*

The *vigiles* may have suffered from some of the same problems as survivors, but they might also suffer other psychological problems. This is because while survivors probably only experienced such psychological trauma once, the *vigiles* were exposed to stress more regularly simply through carrying out their duties. This type of occupational stress may have had a more general impact on the functioning of members

⁴⁷ Hetherington 2001: 41-43.

⁴⁸ Williams 1988: 321.

⁴⁹ Williams 1988: 323-326.

⁵⁰ John of Nikiu, *Chronicle*, 90.24.

of the cohorts than PTSD. Certainly survivor guilt as a manifestation of PTSD would be highly unusual amongst the *vigiles* only because they were unlikely to face a situation where they would be the only one to survive from their cohort. However, it should be noted that it might occur if, through inaction, one of their comrades died carrying out his duty and another member of the cohort could have done something to save him.

Trying to determine the psychological trauma members of the *vigiles* might have suffered is complicated by the fact information about them is so scarce. Although it is unlikely that any ancient source discussed the psychological effects of their duties on members of the cohort, more information about what they did and how often they were placed in danger would help in determining what stresses they might have suffered. Given that the *vigiles* spent extensive periods of time in each other's company (living, working, and training together) and given the dangerous nature of fire-fighting, they were probably a very close-knit group who would feel the loss of comrades and have to come to terms with this.

As noted above, there were no support networks or treatments available in antiquity that we know of and, as such, dealing with any psychological issues that arose would be very difficult. It is possible that any *vigiles* whose ability to perform their job was affected by occupational stress or PTSD were quickly moved out of the cohort, as they would be a potential liability to the other members. It is probable that at some *vigiles* across the course of the period where they featured in ancient Rome suffered from some form of psychological trauma. The nature of this and how widespread it was amongst the cohorts is difficult to determine.

Conclusion

It is well known that fire is dangerous and that it can kill and injure people, as well as cause serious damage to the fabric of an urban space. One of the main points of this chapter was to highlight the physical evidence of fire damage and to analyse what these can tell us about fire in antiquity. While written sources gave us information about certain aspects of fire, archaeology is the only way of ascertaining its true destructive nature. The physical remains allow us to see both the ferocity of a fire and how the

Romans rebuilt following one. The ferocity of fire is highlighted by the melted glass at Verulamium, but this example also reveals the opportunity it provided for the regeneration of the urban landscape. Such destruction by fire and opportunity for renewal presented by it is also seen, for example, in Tacitus' account of the fire of AD 64 and Nero's desire to rebuild Rome in a new way.

The other main point made in this chapter is the damage we cannot see from antiquity, the injuries, both physical and mental, inflicted on people by fire. The discussion is theoretical, as there is little information from the ancient world, but warranted predominantly to help understand what people might have faced as a result of a fire in the capital. This need not be a devastating, city-wide fire, but merely a small one in which people were caught was enough to inflict death, injury and psychological trauma. The *vigiles* may have suffered from psychological injury more than anyone else, given the potentially intense and stressful nature of their job.

Having analysed the physical and mental damage a fire might cause, we must now turn our attention to the aftermath of one. How were the city of Rome and its inhabitants affected following a fire and how did they recover from one?

Chapter 4: The aftermath of a fire

This chapter is concerned with the aftermath of a fire, principally concerning itself with the effect of one on the inhabitants of Rome. Like a flood, the immediate impacts of a fire were (and, indeed, still are) fairly obvious; the cause of the devastation is easily recognisable. However, the short, medium and long term consequences of a fire were not so obvious, perhaps even to those living through them, and perhaps could be understood only with the benefit of hindsight. As such, this chapter is divided into four sections. The first analyses the relief efforts made in the aftermath of a fire. The second looks at the clean-up and rebuilding efforts following one. The third analyses the disruption caused to the city of Rome by a fire, covering issues such as economic and social disruption. The final section looks at compensation made in the aftermath of fires.

An important point that needs to be made at the outset is that the ancient evidence cannot furnish us with all the answers we seek here. While they tell us much about the aftermath of several fires, they also hint at much more. To supplement this ancient evidence, we must use comparative material from other periods of history and concerning the aftermath of disaster other than fires. An important comparative example is the Great Fire of London in 1666. This is because we have two eyewitnesses, Samuel Pepys and John Evelyn, to this fire who kept diaries over a long period and were able to notice and record the longer term impacts of the fire.

Relief

This section looks at the impact of the fire on those directly affected by it, as well as the efforts made by people to help those suffering after a fire. Relief in this respect might cover any number of issues, including handing out financial compensation, but here I will confine the discussion to two principal areas; the provision of shelter to those rendered homeless by a fire; and the provision of food and other items needed to survive following one. There are few references in the extant literature to such

measures, but the few hints we do get give a good starting place for the discussion, as they help us to identify the problems people might have faced.

Given the destruction fires could cause, it is no surprise that we find references in the extant literature to relief provided to their victims, particularly during the Imperial period. However, these references are often tantalisingly brief. A typical example can be found in Cassius Dio, referring to a number of fires in AD 16:

ἐμπρησθεῖσι τε τισιν οὐχ ὅπως ὁ Τιβερίος ἀλλὰ καὶ ἡ Λιουία ἤμυνε.

Assistance was rendered to the victims of various conflagrations not only by Tiberius but also by Livia.¹

This is typical of such references, which hint at so much, but tell us so little. For example, what form did this assistance take? Was this cash compensation to people? Was it the provision of food and shelter for those made homeless? Was it both or even something else entirely? It is best, perhaps, to view this as financial compensation, the reason for which is discussed in the Compensation section below.

The most useful source regarding relief is provided by Tacitus' account of the fire of AD 64, as he provides a degree of detail regarding the measures taken to provide relief to the survivors:

Sed solacium populo exturbato ac profugo campum Martis ac monumenta Agrippae, hortos quin etiam suos patefacit et subitaria aedificia exstruxit, quae multitudinem inopem acciperent; subvectaque utensilia ab Ostia et propinquis municipiis, pretiumque frumenti minutum usque ad ternos nummos.

Still, as a relief to the homeless and refugee populace, he [Nero] opened the Campus Martius, the buildings of Agrippa, even his own gardens, and threw up a number of temporary shelters to accommodate the helpless multitude. The necessities of life were brought up from Ostia and the neighbouring municipalities, and the price of grain was lowered to three sesterces.²

Here we have some insight into the problems faced by people in the aftermath of a fire, as well as some evidence of measures undertaken to help those affected. The first

¹ Cassius Dio 57.16.2.

² Tacitus, *Annals*, 15.39.

problem people might suffer after any fire is homelessness. Following a relatively minor fire (one that perhaps only rendered an *insula* unliveable, rather than completely destroying it) its inhabitants would have to find alternative accommodation. Following a major fire (like that of AD 64) many thousands of people may have needed to be housed. Differences in scale require different resolutions. In the first instance, it is probable that people would have to resolve the situation themselves, relying on neighbours, friends or relatives to provide them with accommodation. If they could not find accommodation, it is possible they lived on Rome's streets, or perhaps even left the capital altogether. In the second instance, where the ability of the city to absorb so many homeless would be severely constrained, it is probable that some interest was shown by the government to provide some form of accommodation, temporary or otherwise. This was especially true in the Imperial period when the emperor took responsibility for more of the city's social problems. This is indeed what happened after the fire of AD 64 where, according to Tacitus, Nero opened some public buildings as well as erecting a number of temporary structures to house those made homeless. The fire of AD 64 was unusual in its severity, but it is possible that the same thing was done when other major fires struck the city (i.e. AD 80 and 192).³

A further problem to be discussed here is that of concentrating large numbers of people in temporary accommodation and the resulting consequences. In such circumstances people would be living in very close proximity and probably in poor sanitary conditions. In such conditions people possibly would catch diseases and these might spread quickly throughout temporary camps. Indeed one of the first recommendations of the World Health Organization (WHO) in the aftermath of a major disaster (including fire) is provision of adequate shelter and a clean water supply.⁴ The lack of one or both of these could have severe repercussions, and it is possible that the epidemic in Rome in AD 65 was as a result of people living in unsanitary conditions for an extended period of time.⁵ This is still a problem in the modern world, where the concentration of large numbers of people living in temporary accommodation with poor sanitation following a natural catastrophe is often followed by epidemics causing

³ There are more issues connected with homelessness, but these are discussed in the section on Disruption below.

⁴ Assar 1971: 34-40.

⁵ For this epidemic, see Tacitus, *Annals*, 16.13; Suetonius, *Nero*, 39.

serious loss of life.⁶ Indeed if rapid action is not taken these conditions often kill more people than the disaster that caused them. The cholera epidemic that broke out in the Rwandan refugee camp in Goma in 1994 is an extreme example but not an isolated one.⁷ Neither Tacitus nor Suetonius provide enough details of this plague to diagnose it, although contagions passed person-to-person (e.g. influenza) or through contaminated water (e.g. dysentery) are possibilities.

Before moving on, one final problem connected with those above needs to be mentioned. People living in refugee camps might have died without the intervention of disease, either through lack of food or by exposure to the elements. The issue of food will be discussed below, but exposure was a real threat to those left homeless by a fire. This would be a particular problem during the height of a Mediterranean summer, as well as an issue in the depths of winter. This would be a particular problem for the vulnerable groups in society, namely the very old and very young.⁸ We lack specific evidence from the Roman world, but a comparative example from the Great Fire of London in 1666 will help to highlight this issue. Following the fire, many were living rough or in temporary shelters on the fields surrounding London. It was during this time that the poet and dramatist James Shirley died. He was living in a temporary shelter in one of the fields outside London, was 70 years old, and died eight weeks after the fire was extinguished. His wife died the same day. Both deaths were the result of exposure.⁹

There are several aspects of this that have a bearing on this discussion. First, James Shirley clearly belonged to what we would term a vulnerable group, namely the elderly. Although his particular death probably was recorded merely due to his fame, it is unlikely to have been the only death caused by exposure that took place. Indeed, as noted, his wife also died. A similar situation may have arisen following a major fire at Rome in antiquity, in either summer or winter, when those in temporary shelters might have difficulty finding shelter from the sun or keeping the cold at bay. Secondly, the fact that his death took place eight weeks after the fire was extinguished gives an indication of the length of time people might spend in temporary accommodation, something discussed below. The final issue here is the question of the form of the

⁶ Assar 1971: 34.

⁷ Adams 1999: 178.

⁸ Curson, *et al* 1989: 11-15.

⁹ Porter 1996: 43; Tinniswood 2003: 133.

temporary shelter. We perhaps tend towards images of refugee camps where everyone lives in tents, but that used after the fire of London or fires in Rome was possibly very different. Tacitus indicates that Nero housed some people in public buildings, a tactic probably repeated after other major fires.¹⁰ Depending on the scale of the fire, this was unlikely a sufficient solution, but many of the rest may have found shelter amongst friends or relatives elsewhere in the city. The rich inhabitants of Rome may simply have had to retire to their country estates in order to find alternative accommodation.¹¹ Some clearly were housed in temporary accommodation and it is possible that these people lived in tents, as these would be relatively easy to erect and would provide some shelter at least.

The final problem of relief discussed here is that of food supply following a fire. Following a devastating fire it is probable that large quantities of stored food will be rendered unusable, whether by being burned in the fire or spoiled as a result of the smoke. Following the fire of AD 64, Tacitus tells us that Nero had grain brought in via Ostia and that the price was lowered to three sesterces.¹² This would certainly suggest that stores of food were destroyed or otherwise spoiled, a view that is perhaps supported by Suetonius' assertion that *horrea* at the foot of the Esquiline hill were destroyed in the course of fighting the fire.¹³ It is interesting that Nero did not hand out free food to those affected by the fire, but merely had grain sold at a fixed price. The reasons behind not handing out free food are not clear, and it is difficult to even speculate on this. The decision not to give out food at a time when people might have lost everything they owned and might not have been able to afford grain raises an important question: How did people survive? Or, indeed, we might question whether they did survive. Perhaps they had to rely on the charity of others, or perhaps the death toll rose as people either starved or succumbed to other illnesses because their bodies were too weak to fight off infection. This would be a particular problem amongst vulnerable groups, such as the very young and very old.¹⁴

¹⁰ Tacitus, *Annals*, 15.39.

¹¹ See, for example, Pliny the Younger's account of his villa at Laurentum, an easy retreat from Rome for pleasure or following a disaster (*Epistulae*, 2.17).

¹² Tacitus, *Annals*, 15.39.

¹³ Suetonius, *Nero*, 38. Interestingly, the WHO assumes the wholesale destruction of food supplies following a disaster as a matter of course (Assar 1971: 73-75).

¹⁴ Curson, *et al* 1989: 11-15.

The question of why Nero fixed the price of grain is perhaps easier to understand; he was trying to protect the populace from unscrupulous merchants. At times of disasters, people will attempt to exploit the situation to their own advantage, especially financially. This is indeed what happened during and after the Great Fire of London. While the fire was burning, porters and the owners of carts used the situation to their own advantage by charging exorbitant prices to take peoples personal possessions out of the city. In certain instances, people paid money and their goods were not removed, while at other times people paid money and never saw their goods again.¹⁵ Similarly, following the fire the prices of both coal and food increased markedly.¹⁶ The prevalence of this phenomenon has also been noted in the modern world.¹⁷ This is something that the World Health Organization (WHO) is keen to avoid following disasters and makes it a priority of its response to any given disaster to try to limit the exploitation of those affected.¹⁸ While there is no direct evidence of this having taken place in antiquity, Nero's motive in keeping the price of corn low may have been an attempt to head off such exploitation, or was perhaps in response to this.

There is no mention of any other relief measures being enacted in the aftermath of any of the other major fires in the capital. Was this because no one was either affected or made homeless following any of these other disasters? This is unlikely, particularly given that some of the fires that struck Rome after AD 64 were extensive (for example, that of AD 80 and AD 192). The lack of relief measures following these fires probably reflects the interest and motivations of the authors who record them. It is possible that other emperors undertook measures similar to Nero's, such as erecting temporary shelters or taking other measures in regards, for example, the food supply. The issue of food supply probably was not a problem after every fire, as it was dependent on where the fire took place. There is at least one other fire where the issue of food, or lack thereof, might have arisen. This is the fire of AD 192, where we know of the destruction of *horrea* due to Galen mentioning the loss of some of his research when one where he stored this was destroyed by the fire.¹⁹ Whether emperors other than Nero enacted measures to provide relief to people following fire, or whether any

¹⁵ Tinniswood 2003: 68-69.

¹⁶ Porter 1996: 62.

¹⁷ Wisner, *et al* 1994: 140-141.

¹⁸ Assar 1971: 74.

¹⁹ E.g. Galen, *De compositione medicamentorum per genera*, 1.1; *De libris propriis*, 2 and 11. See also the further discussion of this in Tucci 2008.

innovated on those following the fire of AD 64, cannot be answered but the former at least is likely.

Clean-up and rebuilding

This section addresses a number of issues relating to the cleaning up of Rome in the immediate aftermath of a fire, as well as looking at the more long term issue of the subsequent rebuilding of the city. One important question that should be asked regarding the clean-up and rebuilding operations following a fire is; who would be responsible for this? We get some hints in the sources and these allow us to build a picture. The best evidence, unsurprisingly, comes from the fire of AD 64:

Ruderi accipiendo Ostiensis paludes destinabat, utique naves, quae frumentum Tiberi subvectassent, onustae rudere decurrerent.

As a place for dumping the rubble he [Nero] settled upon the Ostian marshes, and gave orders that vessels which had carried grain up the Tiber should run downstream laden with debris.²⁰

[P]ollicitus cadaverum et ruderum gratuitum egestionem nemini ad reliquias rerum suarum adire permisit.

[W]hile promising the removal of the debris and dead bodies free of cost he allowed no one to approach the ruins of his own property.²¹

Here Nero (and, therefore, the state) takes responsibility for clearing up following the fire, despite Suetonius' claim that this was in order for Nero to plunder the wreckage. Both Tacitus and Suetonius move quickly over the issue of cleaning-up the city following the fire, but this should not be a surprise as both were keen to move their narratives on to more interesting matters; Tacitus was eager to discuss the persecution of the Christians, while Suetonius was keen to relate how Nero nearly bankrupted the provinces with his demands for contributions.²²

Is such a clean-up operation likely to have been the standard response by the state? The answer is probably not, the response here probably unusual given the extreme nature of the disaster. It is possible that the compensation paid out by the state

²⁰ Tacitus, *Annals*, 15.43.

²¹ Suetonius, *Nero*, 38.

²² E.g. Bishop 1964: 78-79; Warmington 1977: 102-105.

on occasion was meant to cover the cost of clearing a site, as well as paying for the rebuilding of the destroyed structure. However, this latter point is discussed below. The exceptional nature of the fire of AD 64 and the depth of written source material we have for this should caution us against applying such conclusions universally, but might indicate the response of the emperor following a particularly serious fire. Nero's alleged intention to rebuild Rome may have been part of the reason he took responsibility for the clearance operation, but the sequence of the aftermath of the fire is not clear.²³ It might be that it was only the clean-up operation was underway that Nero realised the opportunity regarding rebuilding the city that was presented to him and that, initially, he simply wanted to get the city back to some sense of normality. It is possible that the state only involved itself in cleaning up the city if the scale of the task was beyond public capacity.

The first issue to be considered in the cleaning-up of the city is the removal of dead bodies, both human and animal, and the hazards associated with this task. This task would go hand-in-hand with the removal of debris, discussed below. Suetonius records that Nero promised to remove the dead bodies from the rubble following the fire of AD 64 and that he kept people away from the ruins until this task was complete.²⁴ Suetonius claims that this was done to allow Nero to plunder the ruins, an odd claim considering his assertion that the houses he wished destroyed were slums, but in line with his generally negative portrayal of Nero and the fire. However, it is possible that either Nero or his advisers believed that dead bodies had the potential to wreak further havoc amongst the living, by causing *pestilentia*. Those killed by fire, whether human or animal, often would not have burned to death, but would have been killed by asphyxiation due to smoke inhalation. Death by being crushed by a collapsing structure is also a possibility. Either way, much of the organic material of the body on which parasites feed may have been left, especially if the fire did not reach the body. It is likely that the removal of corpses was prioritised due to the smell emitted by decomposition. The foul smell is perhaps why there is a modern perception that corpses are responsible for spreading diseases.²⁵ It is possible that such a perception existed in antiquity also. Certainly there was a belief that foul-smelling winds caused diseases, a belief articulated by Vitruvius:

²³ Miller 1973: 88-95.

²⁴ Suetonius, *Nero*, 38.

²⁵ de Ville de Goyet 2000: *passim*.

Dirigentur haec autem recte, si exclusi erunt ex angiportis venti prudenter. Qui si frigidi sunt, laedunt; si calidi, vitiant; si umidi, nocent. Quare vitandum videtur hoc vitium et avertendum, ne fiat quod in multis civitatibus usu solet venire.

These [i.e. the streets and alleys] will be rightly laid out if the winds are carefully shut out from the alleys. For if the winds are cold they are unpleasant; if hot, they infect; if moist, they are injurious. Wherefore, this fault must be avoided and guarded against, lest there happen what in many cities is not infrequent.²⁶

He follows this with an anecdote about the inhabitants of Mytilene on Lesbos, who suffered different ailments depending from which direction the wind blew. Whether this is true or not, Vitruvius possibly records a widespread belief amongst Romans that they would become ill if they were exposed to foul smells, and the smell of decomposition would certainly fall into this category.

Contrary to this perception, however, there are very few hazards posed by corpses, despite the recommendation that dead bodies should be disposed of as quickly as possible following a disaster in order to stop disease spreading.²⁷ In fact, the reality regarding the dangers posed by dead bodies is very different. Corpses would only have an impact on the living if the deceased had an existing illness, as the micro-organisms responsible for putrefaction are not pathogenic.²⁸ Even where a pre-existing illness existed, it would not normally be able to find a new host unless the disease was a particularly infectious one, or if people were living in close proximity to the dead. Examples of such diseases include cholera, typhus and plague, and even these do not survive long in the body after death.²⁹ The only significant danger posed by dead bodies is if putrefaction seeps into sources of drinking water something that poses a significant health risk as it could cause gastrointestinal infections that in the ancient world might well prove fatal.³⁰

Those exposed to the most danger from corpses were those responsible for their disposal, a task most likely undertaken by slaves. This would be a particular problem given the lack of modern medical equipment, such as HAZMAT suits and disinfectant,

²⁶ Vitruvius 1.6.1.

²⁷ E.g. Adams 1999: 177; Morgan 2004: 307.

²⁸ Morgan 2004: 308.

²⁹ Adams 1999: 177-178.

³⁰ Adams 1999: 178; Morgan 2004: 308-309.

and would also be time-consuming as they lacked trucks, bulldozers and other heavy-lifting equipment.³¹ All work involving moving the dead was done by hand and involved physical contact between those doing this and the corpses. This would expose individuals handling dead bodies were exposed to two principal risks; blood borne diseases, such as hepatitis B and C or septicaemia, entering the body through breaks in the skin (i.e. cuts) or through body fluids entering through the eyes, nose or mouth; and the tuberculosis virus in the event that bodies were located (perhaps through being stored together prior to disposal) for any period of time in a poorly ventilated space.³²

The next part of cleaning up the city following a fire, and a task that goes together with the removal of dead bodies is the taking away of debris. One aspect of this that is difficult to ascertain is the length of time it took. From Tacitus' account of the fire of AD 64, we are given the impression that the fire was extinguished, the city cleaned up and rebuilding work begun, the Christians rounded up and persecuted, and, following this, there was a return to normal life. We know, of course, that this was not how events unfolded, but Tacitus compresses all of these incidents together and the passing of time is forgotten. There are hints in his account of events taking place over a period of time, such as with the persecution of the Christians. Here we have the arrest of an initial group, their torture and the acquisition of further information, and then further arrests. This would have taken at least a day or two (and, perhaps, substantially more) revealing a longer time-scale than the initial reading suggests. What can be said concerning how long the clean-up operation would take?

Unlike with a flood, people would not have to wait for the water to subside before they could begin. However, with fire, one complicating factor is the presence of hot spots amongst the debris.³³ These are areas of trapped heat with the rubble and they pose two problems. The first is that they could cause injury to anyone who was attempting to remove debris from the area. The second is that they might lead to the re-

³¹ The WHO stipulates that its personnel wear special working clothes (i.e. rubber gloves, overalls, etc.) and have access to heavy earth-moving equipment and trucks before dealing with any dead bodies. They are also required to wash thoroughly with both soap and disinfectant following contact with the dead.

See Assar 1971: 84-85.

³² Morgan 2004: 308-309.

³³ For example, parts of London continued to smoulder for several days after the fire due to the heat trapped in the ruins. See Porter 1996: 46-47. Also, the fire broke out again, in at least one spot, hours after it had been put out. This was at the Temple, where one of the buildings that survived the fire caught light and the fire was only stopped from spreading by the quick intervention of troops under the command of the Duke of York, who promptly blew the building up. See Tinniswood 2003: 110-111.

ignition of the fire if they were uncovered near to a potential fuel source.³⁴ There is no evidence to indicate whether the ancients had any concept of hot-spots or not, but they may have observed the phenomena by dealing with the aftermath of various fires and exercised diligence in their clearing of the site.³⁵ Irrespective of whether the Romans knew of them or not, they would have slowed the process of clearing the debris.³⁶

Tacitus does give us one other piece of information regarding the cleaning up of the city, namely that ships carrying grain up the Tiber should run down it carrying debris.³⁷ To achieve this, ships would have to dock at Rome, unload their cargo, and then be loaded with debris. Once underway they would then have to dump this in the Ostian marshes. This would be a time-consuming process, as there has to be enough space on the dock to unload and, presumably, remove the grain before then loading up the debris on the ship, as well as the time it would take the crew to dump this rubbish before they could finish their sailing downstream. Such a process would depend on a lot of variables, including how quickly ships could be loaded and unloaded, how many ships could be done at any one time, how long it took the crew to unload the rubbish into the marshes, and the quantity of debris for disposal. Such a job could take several days to several weeks. However, it is worth noting that a job such as this would be required only following major, city-wide conflagrations.

What about the process of rebuilding in the aftermath of a fire? How long might this have taken? Concerning this, there is some information in both the literature and the archaeology. According to the *Digest*, the time for building an insula was around two years; the jurist Scaevola discusses a case of a manumitted slave being left an apartment that was burned down and rebuilt after a lapse of two years.³⁸ This may sound theoretical, but is actually supported by archaeological evidence. The reconstruction of Ostia in the Hadrianic period, specifically the Insula of the Paintings, can be used as a guide.³⁹ It was divided into three units, two of which were apartments

³⁴ See Pastor, *et al* 2010 on hotspots and the dangers they pose.

³⁵ One might argue that it would be surprising if the Romans were completely unfamiliar with hot spots, although given the difficulties and debate concerning how to deal with them in the modern world, it is possible that they adopted a number of responses to them when they were encountered. See Pastor, *et al* 2010 for further bibliography.

³⁶ As they did after the Great Fire of London where parts of London were so hot the soles of people's shoes melted and the extreme heat of the air caused dizziness. See Tinniswood 2003:116-117.

³⁷ Tacitus, *Annals*, 15.43.

³⁸ *Digest* 33.7.7.pr (Scaevola, *Digest*, 22).

³⁹ This discussion is based on DeLaine 1996.

(the House of the Paintings and the House of the Infant Bacchus), the other a larger residence (House of Jove and Ganymede). The two apartments flanked a garden. The insula also had two shops on its main street façade.⁴⁰ The construction was principally concrete faced with brick and reticulate, as well as there being timber mezzanines in a number of rooms on the ground floor. Such construction was probably very similar to that in the capital. Also, where a consistent run of dated brick stamps is found in Ostia, they cover a period of between two and four years. For example, the temple of Serapis has brick stamps dated between AD 123 and 126. This evidence supports that of the *Digest* that rebuilding an insula would take around two years. However, DeLaine goes further and posits that, based on a 12-hour working day and a 300-day working year, it would take two years to build the House of Jove and Ganymede, and one each for the building of the smaller units.⁴¹ This gives us a grand total of four years for the whole insula. Following a major fire in the capital, it could take many years to rebuild because even though a number of insulae could be rebuilt simultaneously, in areas that were severely affected by the fire, a point is reached where the number of people working have to be limited simply to give people enough room to work.

However, there are a number of points we need to make regarding the above. First, in the example from the *Digest*, it is not clear how the rebuilding was organised, but it is possible that it was done with private rather than public money. This might have an impact on the time taken to rebuild. Second, the reconstruction of Ostia was planned rather than occurring as the result of a disaster and, as such, there was less pressure to get the rebuilding done quickly. Third, following a fire not every structure would require a complete rebuild, as some might only have suffered minor damage and therefore only need minor repairs. Finally, some re-use of materials might have been possible following the fire, meaning that not everything needed for construction would have to be brought into the city. This is the other complicating factor in the rebuilding, namely the speed at which materials needed for reconstruction could be brought into the capital.

The example of the Great Fire of London in 1666 is interesting here. For example, Monument records that the reconstruction of the city was completed in three years. Yet according to John Evelyn's diary, when he visited London to conduct a

⁴⁰ DeLaine 1996: 169.

⁴¹ DeLaine 1996: 176-177.

survey almost three years after the fire, he found City officials and merchants still using temporary accommodation, none of the burned churches had been rebuilt, almost none of the streets had been repaved, and very few buildings had had their foundations laid.⁴² Given that Evelyn saw all this in the August of 1669, it is unlikely that all the work still to be done could have been completed by the following month when Monument was erected.

Evelyn's comment also raises an interesting question: Why had so little been achieved in the intervening period? The temporary provision of accommodation for the survivors would have been the top priority in the aftermath of the fire and it is possible that whatever period of time was lost organising this, a similar amount of time would be lost to the process of rebuilding. Reconstruction could also not take place on a large scale without some sort of plan, although following the Great Fire of London at least half a dozen were submitted within two weeks of the fire being extinguished, with Sir Christopher Wren and Evelyn both submitting their plans within a week.⁴³ Another important element that may have had some impact on delaying reconstruction is the investigation that took place following the fire. In much the same way that people viewed the fire of AD 64 as being started deliberately (whether by Nero, the Christians or some other agent), people laid the blame for the Great Fire of London on the Dutch, on the French, and on Catholics, as well as other groups in society.⁴⁴ All of these accusations would need to be investigated and it may be that these delayed the process of rebuilding.

There were also a series of practical measures that would have had an impact on this. For example, money would be needed to fund this, but large amounts of capital were lost in the fire. Similarly, materials to rebuild would need to be brought to the capital which takes both time and money. Following the Great Fire of London, the government wanted to put a raft of legislation in place before rebuilding could get under way. They would also need to locate labour and encourage additional workers into the area; this would also incur more expense. Finally, the weather might play a part in the rebuilding efforts. The Great Fire of London this started in September 1666 and, by the time all of the various elements mentioned above had been conducted (investigation,

⁴² Reddaway 1940: 244. Evelyn's diary entry was for August 17, 1669.

⁴³ Porter 1996: 79-80.

⁴⁴ Tinniswood 2005: 145-146 (Dutch); 158-159 (Catholics).

legislation, clean up, etc.) there would have been little time to do any work before the weather changed and winter set in.⁴⁵ The issue of weather is an important one in considering rebuilding as building work such as digging foundations simply cannot be carried out when there is rain or snow interfering. Despite the assertion on Monument, in actuality it took London ten years to fully rebuild after the fire.⁴⁶

What can this tell us about the Roman world? When discussing reconstruction following a major fire in a Roman urban settlement we should regard reconstruction as something that would take a substantial amount of time, and the Great Fire of London presents us with a number of elements that could delay or disrupt construction work (weather, bureaucracy, etc.). However, there are a number of factors that differ between ancient Rome and seventeenth century London. Imperial Rome was ruled by an absolute monarch who did not have to answer to his subjects or a parliament meaning that if he wanted rebuilding to begin prior to investigations or legislation, it could do so.

Likewise, the practice of slavery meant that there were not likely to be shortages of manpower, although the caveat that specialists would have been needed for certain types of work needs to be mentioned. Also, one of the elements that slowed down the rebuilding of London was the desire of the authorities to make it as fire proof as possible. This meant that not only was detailed legislation needed, but that it also needed to be enforced, as well as the materials needed for reconstruction to be brought to the city. Apart from Nero, we know of no other emperor who attempted to do this at Rome. Even with Nero's attempt, we do not know how rigidly this was enforced during the final four years of his reign, or whether it was enforced at all by the succeeding emperors. Similarly, Rome had no inspectors to make sure new buildings were adhering to any legislation that was in place concerning the construction of buildings. All of this may have mitigated the length of time taken to rebuild ancient Rome.

The final issue to be tackled is the tearing down of any structures that had lost their integrity following a fire. The physical evidence for the demolition of buildings is discussed in the previous chapter, although some repetition is justified here. Fires in

⁴⁵ All of these issues are discussed in depth in Reddaway 1940: 244-283.

⁴⁶ Reddaway 1940: 284.

structures can cause them to lose their integrity in a similar manner to the damage caused by floods and earthquakes. However, buildings are far more susceptible to this with the latter two, and in the case of flooding, the damage can be almost invisible until the building actually collapses.⁴⁷ That buildings lost their structural integrity but remained standing following a fire is probable. A collapsing roof might cause significant structural damage to the upper levels of a building, especially the tops of the walls on which it was built. Similarly, buildings constructed of *opus craticium* might be more susceptible to this. This is where wood is used to build a framework and the spaces created are filled with whatever materials are at hand.⁴⁸ If the timber framework is damaged, the fill of the wall might not be held together as tightly as necessary to maintain the structural integrity of the wall.⁴⁹

There is excavated archaeological evidence of the debris from fire damage being buried as a foundation for other structures or pavements. This is discussed in detail elsewhere.⁵⁰ However, the villa at Fishbourne deserves some discussion here. Following a fire here in the late third century AD, the North Wing was abandoned and subsequently demolished. This might have been due to financial considerations, but equally the integrity of the building may have been compromised and it was simply easier to tear the structure down.⁵¹

Disruption

This section examines the problems fires caused the inhabitants of the city of Rome, focussing on the disruption caused by a fire to the functioning of urban life and the economic consequences of a major fire. Some consideration will also be given to the social disruption to the inhabitants of Rome.

The economic disruption caused by a fire would vary depending on its severity, but encompasses two principal aspects; personal loss and business loss. The first is

⁴⁷ Aldrete 2007: 102-118.

⁴⁸ For a discussion of this, see Adam 1994: 122-124.

⁴⁹ Vitruvius 2.8.20 says that he wishes that this technique had never been invented as walls constructed in this way are prone to fire. It is possible that he had the structural issue in mind with this comment, as he does not say in what way it was prone to fire. McKay 1978: 40-41 argues that he based this assessment on observation.

⁵⁰ See Chapter 3.

⁵¹ Cunliffe 1971: 189-191.

more straightforward than the latter, in that even a minor fire would result in some personal loss. It might include the loss of personal effects, as well as personal wealth and of a place to live. Personal loss could occur in some instances even when an individual's home was not actually damaged by the fire, as well as encompassing the loss of goods with no financial value attached to them. Such is the case with the fire of AD 192, where the medical writer Galen lost some research materials stored in a *horrea* in part of the city badly affected by the fire.⁵² The loss to Galen here was of no financial value *per se*, but he may have considered what he lost priceless and irreplaceable.

More general economic loss occurred through the loss of business, something that would be especially true following a major city-wide fire.⁵³ This might include the destruction of business premises themselves, goods stored there, and stores of raw materials to make new products. Several scenarios present themselves. If someone lost their premises, they lost the ability to provide the service they undertook previously, both through the loss of the tools of their trade and a place from which to carry out that trade; if they lost their goods, they lost the ability to make money and, therefore, the ability to buy more raw materials to make new goods; if they lost the raw materials needed for their trade, then they lost the ability to make new goods and might face an uncertain future, relying on the import of new raw materials at a time when much that was brought into Rome presumably was for the rebuilding efforts. Any of these could occur, but one further scenario is possible, namely the occurrence of all three simultaneously. What would be left for those tradesmen who lost everything? It should be noted here that some merchants and tradesmen could recover more quickly than others, as some did not require fixed premises but could simply set up anywhere and conduct their business.

That business premises and any stock contained in these, as well as raw materials to make more, were destroyed is clear from two fires that occurred in Rome in antiquity. The fire of AD 64 began in some *tabernae* near the Circus Maximus and presumably these and all the goods they contained were completely destroyed by the

⁵² E.g. Galen, *De compositione medicamentorum per genera*, 1.1; *De libris propriis*, 2 and 11. See also the further discussion of this in Tucci 2008.

⁵³ The following is based on the work of Newbold 1974.

fire.⁵⁴ Similarly in both the fire of AD 64 and that of AD 192, we read of the destruction of *horrea*. Raw materials used by tradesmen might have been stored in these and their loss could have been catastrophic for business especially in the short term. Recovery from such a disaster would have been complicated by other factors too. There would be a shortage of premises in which to start trading again after a major urban-wide fire, although not all traders would require fixed premises. Some would simply be able to set up temporary stalls amongst the rubble and trade again with any products they had, as indeed was the case in the aftermath of the Great Fire of London.⁵⁵ Such a shortage of premises could be further complicated by the need to house the homeless. Also, as mentioned above, the priority for importing materials into the city would be for those needed for the rebuilding efforts. Traders attempting to re-establish their businesses may struggle, at least initially, to overcome such a problem. Against this, however, is the possibility that some benefited from the disaster by exploiting the situation to their own ends. This may have involved increasing the rental charge for property, or perhaps by charging more money for raw materials that craftsmen required. A similar situation occurred both during and after the Great Fire of London.⁵⁶

What about disruption to the social functioning and cohesion of the city? Following a major fire, one of the first problems would be travelling around the city, just as in the aftermath of a Tiber flood in Rome.⁵⁷ In the immediate aftermath of a major fire the ruins would be hot, making movement through them both difficult and dangerous. People would also risk the collapse of any unstable structures, and potentially be caught in resurgences of fire due to hot spots. Also there was the potential problem of inhabitants' disorientation as streets they normally used were filled with debris (requiring alternative routes) and destruction of prominent urban landmarks. This would add further difficulties to moving around the city.

Similarly, religious rituals and public entertainment might have been affected by a fire through destruction or inaccessibility of the buildings or locations where they took place. For example, there are a number of recorded instances of the temple of

⁵⁴ Tacitus, *Annals*, 15.38.

⁵⁵ Temporary shops were set up in the ruins of the Royal Exchange after the fire. It is not inconceivable that an analogous situation followed major fires in Rome in antiquity. After all, the only limit to people's ambitions is their determination to carry them out. For these temporary shops, see Porter 1996: 64.

⁵⁶ Porter 1996: 62; Tinniswood 2003: 68-69.

⁵⁷ Discussed by Aldrete 2007: 92-97. The following discussion draws on Aldrete's work.

Vesta being destroyed by fire, something that may have affected worship of the goddess.⁵⁸ A caveat to this is that worship of most Roman deities took place outside at the altar, with the temple being used largely to store offerings. However, if the destruction was widespread, access to the altar may not have been possible. Likewise, buildings for public entertainment also often suffered the ravages of fire. The Circus Maximus must have needed a certain amount of work following the fire of AD 64 before it could be used again.⁵⁹ However, this was clearly completed fairly quickly as Nero was able to use it on his return from Greece in AD 68.⁶⁰ It is not clear precisely what there was to burn in the Circus Maximus, but presumably the seating was made of wood, otherwise Tacitus' statement that the fire swept the length of the Circus makes no sense and the damage pattern in his account is consistent with this having taken place.⁶¹ Also, one of the *arae incendii Neronis* was found on the south west side of the Circus at the foot of the Aventine, the opposite side to where the fire started.⁶²

More serious damage to a structure was that caused by a lightning strike to the Colosseum in AD 217.⁶³ This rendered the building unusable for gladiatorial games for a number of years; it could not be used again until AD 223 when restoration work was finally completed.⁶⁴ Accordingly, gladiatorial shows needed a new home for the six years the Colosseum was unavailable. Cassius Dio claims they were held at the stadium (presumably the stadium of Domitian although he is not specific on this point) during this period. These were possibly of a smaller scale, both in terms of display and spectator numbers.⁶⁵

One issue that could be a problem following a fire (or, indeed, during one) was that of public disorder. During a fire, public disorder would largely have been confined to taking advantage of the confusion to commit crimes such as looting. This is indeed what Cassius Dio accused soldiers and the *vigiles* of doing during the fire of AD 64.⁶⁶

⁵⁸ This happened on four separate occasions we know of; 241 BC, 14 BC, AD 64, and AD 192.

⁵⁹ Tacitus, *Annals*, 15.38.

⁶⁰ Suetonius, *Nero*, 25.

⁶¹ Tacitus, *Annals*, 15.38.

⁶² These were altars erected by Domitian in fulfillment of a vow made after the AD 64 fire. See *CIL* 6.826, 30837 and *LTUR*, s.v. *Arae Incendii Neroniani*.

⁶³ For the fire, see Cassius Dio 79.25.2-3; Jerome, *Chronicle*, 296b. This is discussed in more detail in Chapter 3.

⁶⁴ For the restoration work, see HA, *Heliogabalus*, 17.8 and *Alexander Severus*, 24.3. For a thorough assessment of the damage and restoration based on the archaeology, see Lancaster 1998: *passim*.

⁶⁵ Cassius Dio 79.25.3.

⁶⁶ Cassius Dio 62.17.1.

This statement is an acknowledgement, outside of legal texts that such activity took place. There are several passages in the *Digest* that discuss punishments for individuals profiting from fire, as opposed to starting one in order to commit theft.⁶⁷ The discussion of this issue in a number of different places and by a number of different jurists suggests that this was a serious issue.

In terms of more general public disorder, one might consider two themes; first, the persecution and punishment of those alleged to have started fires; second, rioting and disorder over a lack of various resources needed for survival, such as food and water, or access to public amenities. The former is a more straightforward proposition. For example, following the fire of AD 64, Nero had the Christians hunted down and punished after they were alleged to have kindled the fire.⁶⁸ Much ink has been spilled over this issue, with some scholars claiming that Christians may have been guilty of arson, while others claim Nero was attempting to shift the blame from himself.⁶⁹ A third possibility is that Nero was responding to popular outcry in the aftermath of the fire. What if the persecution was caused by Nero bending to popular pressure to punish someone? Following disasters, particularly those potentially caused by human activity rather than nature, people look for someone to blame. The emperor would be the person to whom the people would naturally turn for justice.

It might be that people took matters into their own hands first, before the authorities could take control of the situation. Consider, during and after the fire of London in 1666, Londoners were quick to blame the Dutch and Catholics for the fire and took the law into their own hands to punish those they saw as responsible for the fire.⁷⁰ It was only the swift and decisive action of Charles II and his advisers that stopped the populace running riot and lynching anyone from these two groups they found.⁷¹ The same situation might have occurred during and after the fire of AD 64, as the Christians were a relatively easy target for blame. Nero and his advisers may have

⁶⁷ *Digest* 47.9.1.pr (Ulpian, *Ad Edictum*, 56); *Digest* 47.9.5.pr (Gaius, *Ad Edictum Provinciale*, 21); *Digest* 48.6.3.3 and 5 (Marcian, *Institutionum*, 14).

⁶⁸ Tacitus, *Annals*, 15.44.

⁶⁹ E.g. Bishop 1964: 79-89 argues the Christians were not guilty of starting the fire, but were guilty of propagating it; Beaujeau 1960: 11-13 and Warmington 1969: 124 exonerate Nero of any guilt; Bohm 1986: 401 and Champlin 2003: 191 argue he was guilty of setting the fire and using the Christians as scapegoats.

⁷⁰ Porter 1996: 68-69 and 133-135.

⁷¹ Porter 1996: 68-69.

been either unable or unwilling to stop Rome's inhabitants from doing this and thus did it themselves to try and exercise some control over the situation.

What about disorder over a lack of resources and access to public amenities? This is a more complex problem. There are a variety of references to public disorder and riots caused by a lack of resources, such as food. For example, Claudius was pelted with stale bread during a food shortage, while Symmachus' house was burned during civil unrest over a shortage of wine.⁷² Similarly, in Constantinople the *praetorium* of Monaxius, the city prefect, was burned during a food shortage, showing that such phenomena were not confined solely to Rome.⁷³ A food shortage following a fire, as well as disruption caused to the regular functioning of the city, might well have led to outbreaks of public disorder. However, there are no examples specifically connected with this, and it is possible that the disaster strengthened community ties, the idea of everyone being in it together. As everyone was experiencing the lack, there may not have been anything about which to protest, and following a disaster it is possible that people simply did not have the inclination to do so.

Compensation

This section analyses financial compensation made to individuals who lost their homes and livelihoods because of a fire. This discussion will focus principally on the Principate, for the simple reason that there is no record of compensation made by the state following a fire from the Republic. This is not surprising as during this earlier period of Roman history the state showed little interest in the provision of social services and support networks. It is only with the reign of Augustus that we begin to see more awareness of this, as he and other emperors take on this responsibility to a certain extent.

Some of the references we have relating to compensation are brief and give little actual information, while others are ambiguous and it is unclear whether the author is referring to compensation or something else. An example of the former comes from the reign of Gaius, in the works of both Suetonius and Cassius Dio, while an example of the

⁷² Suetonius, *Claudius*, 18; Ammianus Marcellinus 27.3.4.

⁷³ *Chronicon Paschale*, s.a. 412, p. 571.

latter comes from the reign of Tiberius and is recorded by Cassius Dio. Concerning the fire in AD 38, we have the following information:

[M]ultis incendiorum damna supplevit

[Gaius] made good to many their losses from fires.⁷⁴

*και εμπρησιν τινα μετα των στρατιωτων κατασβεσας
επηκεσε τοις ζημιωθεισι.*

He [Gaius] helped the soldiers to extinguish a conflagration and rendered assistance to those who suffered loss by it.⁷⁵

The combination of the two sources suggests that this was payment of compensation by the emperor to people following one or more fires. However, beyond the fact that some compensation was paid out, we know very little about this example. There is no indication how many people were compensated, who exactly these people were, or how much they received.

Concerning the example from the reign of Tiberius in AD 16, we have the ambiguous statement of Cassius Dio that assistance was provided to victims of various fires by both the emperor and his mother Livia.⁷⁶ Although it is not stated explicitly that this was financial compensation, there is evidence from elsewhere to support such a conclusion. In AD 27 and again in AD 36 there were fires at Rome and, following each of these, Tiberius paid out compensation.⁷⁷ Both of these are discussed in greater detail below. The point is that Tiberius paid out compensation to people who suffered from fires twice later in his reign and it is possible that he would have done so earlier also, given that he might have wanted to ingratiate himself with Rome's inhabitants early in his reign.

What about fires where we have more specific details? As noted above, we know that compensation was paid out by Tiberius following the fire of AD 27, but no specific details are given as to how much was paid or to whom. Concerning that of AD 36, however, we are given more details by our sources:

⁷⁴ Suetonius, *Gaius*, 16.

⁷⁵ Cassius Dio 59.9.4.

⁷⁶ This is quoted in full above, under the section on Relief.

⁷⁷ For the AD 27 fire, see Tacitus, *Annals*, 4.64; Suetonius, *Tiberius*, 48. For the AD 36 fire, see Tacitus, *Annals*, 6.45; Cassius Dio 58.26.5.

Idem annus gravi igne urbem adfecit, deusta parte circi, quae Aventino contigua, ipsoque Aventino; quod damnum Caesar ad gloriam vertit exsolutis domuum et insularum pretiis. Miliens sestertium in munificentia ea conlocatum.

The same year saw the capital visited by a serious fire, the part of the Circus adjoining the Aventine being burnt down along with the Aventine itself: a disaster which the Caesar [Tiberius] converted to his own glory by paying the full value of the mansions and tenement-blocks destroyed. One hundred million sesterces were invested in this act of munificence.⁷⁸

πυρι πολυ πλειω περι τε τον ἵπποδρομον και περι τον Ἀουεντῖνον ἐφθαρα, ὡστε του Τιβεριον δισχιλιας και πεντακοσιας μυριαδας τοῖς ζημιωθεῖσι τι ἀπ' αὐτοῦ δοῦναι.

[A] much larger region in the vicinity of the Circus and the Aventine was devastated by fire. To the sufferers from the latter disaster Tiberius contributed a hundred million sesterces.⁷⁹

This example is much better as we have both the location of the fire (the Circus/Aventine area) and the amount of compensation paid out to those affected by it (100 million sesterces). This raises a number of questions, but the first we should try to answer is the question of what 100 million sesterces might have built in the capital. Here we must again look at the rebuilding of Ostia during the Hadrianic period and, specifically, the Insula of the Paintings.⁸⁰ The insula had two apartments flanking a garden and a larger residence, as well as two shops on the main street. DeLaine estimates that it would have taken around four years to complete the work connected with this insula and uses the building of the Baths of Neptune at Ostia as a control for building costs. These cost two million sesterces, or 330,000 *modii* of wheat, without decoration.⁸¹ According to DeLaine, the insula may have cost 250,000 *modii* of wheat every year for four years, equivalent to one and a half million sesterces a year or six million sesterces for the whole project. It is worth noting, as DeLaine points out, that this is nothing compared to the nine to ten million *modii* of wheat required per year for the corn dole at Rome.⁸²

⁷⁸ Tacitus, *Annals*, 6.45.

⁷⁹ Cassius Dio 58.26.5.

⁸⁰ This discussion is based on DeLaine 1996.

⁸¹ DeLaine 1996: 182.

⁸² DeLaine 1996: 182.

If we use this figure of six million sesterces per insula, the one hundred million sesterces provided by Tiberius would allow for the reconstruction of around seventeen *insulae*. This presumes, of course, that all of the money went towards the cost of rebuilding, something that might not have actually taken place. If we took the three dwellings per insula that existed at Ostia and applied this to Rome, this would yield a total of only 51 dwellings. There are of course many limitations to such an analysis. For example, we are considering the construction cost rather than the value of the actual property, we do not know the quality of the housing that was destroyed, we do not know the quality of that which replaced it, and we do not know if it cost more to build at Rome. If we consider that the only source that provides a figure for the total number of *insulae* destroyed in a fire gives a figure of 340 (although this figure also includes *domus*), twenty times more the amount would be needed for reconstruction in this case.⁸³

There are records of compensation being paid out by emperors in places other than Rome. For example, Claudius paid out ten million sesterces to the colony of Bononia in AD 53 following a fire, while Nero gave Lugdunum four million sesterces following a fire there in AD 64.⁸⁴ These sums are miniscule in comparison with that paid out by Tiberius in AD 36. Why should this be the case? The explanation is straightforward concerning the latter example; Tacitus notes that this sum was equal to that Lugdunum had provided to Rome to help her recover from the fire of AD 64 and, as such, it is probable Nero simply handed back that money back. We should probably not view this example as compensation as such. Regarding the former example, this sum might reflect the more limited nature of the damage cause here, or may reflect the cheaper cost of building at Bononia. It might reflect the lack of accurate information regarding damage here; emperors were more likely to be able to witness the destruction caused by a fire at Rome first hand. However, the explanation could be simpler still. It is possible that an emperor would make much more effort with regards compensation at Rome because it was the seat of the emperor's power and it was much easier to make displays of munificence here than elsewhere.

⁸³ HA, *Antoninus Pius*, 9.1. There are problems with this, as the figure of 340 could refer to the number of dwellings destroyed, rather than the number of *insulae*. This would still be more than six times the number posited above. This presumes, of course, that the figure provided by the *Historia Augusta* is accurate.

⁸⁴ Tacitus, *Annals*, 12.58 (Bononia); 16.13 (Lugdunum).

Conclusion

The purpose of this chapter is to reveal the challenges faced by the population following a fire. There might be a shortage of resources, most noticeably food and housing, and the lack of these had the potential to lead to further deaths. This is because the Roman state did not provide free food after major fires and because people living in temporary accommodation with poor sanitation and a reduced diet would be more susceptible to disease. This may be why a plague ravaged the city of Rome the year after the fire of AD 64. Some doubt must remain as Rome was often affected by malarial outbreaks and there is nothing in Tacitus' account of this plague to suggest the nature of this disease.

Fire might also affect the economic and social functioning of the city. This might happen due to the destruction of businesses, disrupting economic activity in the city, or by destroying slum areas in one part of the city and causing the relocation of these to other parts. This was because the rebuilt housing would probably be of better quality than that was burned and previous tenants were unlikely to be able to afford the increase in rent. Such destruction led, on occasion, to the state providing compensation to those affected by fires, although it is not clear if this was to those who lived in buildings destroyed by fire or those who owned them; the latter is the more likely.

We must now turn our attention to the final aspect of fires in the city of Rome in antiquity; those who fought them, and the equipment and tactics they employed in doing so. The discussion of the *vigiles* is a vital part of this research.

Chapter 5: Fighting fires

One important aspect that must be considered in any discussion of fires in the city of Rome is the provision of both personnel and apparatus for fighting any actual fires that occurred. This was not a static situation, but one that changed over time. The purpose of this chapter is to briefly outline the transition of Rome's provision of personnel for fighting fires from its earliest days to the creation of the *vigiles*, and then to assess how a fire may have been fought with the equipment available at the time.

Fire personnel at Rome

During the Republic there was no state organised fire brigade at Rome. This is despite the recognition that fire was a serious problem in the city, as is seen by a number of measures taken to counter them. The group of magistrates who were directly responsible for fire prevention in the city was the *triumviri nocturni*, a board of three responsible for the safety of the city after dark. The date of their creation is not known, although they were certainly in existence by the end of the fourth century BC as Gnaeus Flavius is listed as having held this during his clash with the senatorial nobility.¹ However, it is likely the office was created before this.² Apart from keeping watch over the city at night, they were also tasked with preventing and fighting outbreaks of fire.³ They were assisted by a *familia publica*, a body of state slaves, who were placed *circa portas et muros* (around the gates and the walls).⁴ We know little concerning this body of slaves; their size is not known, nor is it clear if fighting fires was their sole responsibility or if they were employed on any task that required extra manpower. That these were, or at least became, inadequate precautions can be seen in the existence of privately run fire brigades at Rome, although this inadequacy could be partly due to the

¹ As described by Livy 9.46.3.

² See Sablayrolles 1996: 12-16.

³ These duties are derived from two passages in Valerius Maximus (8.1.*damn.*5 and 6) where the *triumviri nocturni* are accused of neglecting their duties, in one instance their slow response to a fire, in the other their failure to inspect the guard posts.

⁴ *Digest* 1.15.1.pr (Paul, *De Officio Praefecti Vigilum*, 1).

fact that there was also an element of social control connected with this. Before moving on to discuss these, however, the involvement of other magistrates in fire fighting needs to be discussed.

Other magistrates could become involved with the issue of fire fighting within the city, although these instances were largely confined to the exceptional nature of the events where these are connected with fire fighting. These others are the *triumviri capitales*, the *quinqueviri uls cis Tiberim*, the aediles, the tribunes of the plebs, and the consuls. The *triumviri capitales* were tasked with preventing fires in the city, according to Livy, during the affair of the Bacchanals in 186 BC.⁵ Livy does not say so, but presumably the *triumviri nocturni* had been compromised in some manner (or were deemed unfit to carry out their task) and their powers were temporarily transferred to the *triumviri capitales*.⁶ They were assisted at this time, according to Livy, by the *quinqueviri uls cis Tiberim*, a board of five responsible for the nearer and further banks of the Tiber.⁷ Quite what tasks the *quinqueviri* undertook at this point is not clear, nor is it clear if this was a temporary appointment or something they did normally: little is known of them beyond this mention in Livy and Pomponius' claim that they exercised pro-magisterial authority after dark as it was unsuitable for magistrates to do so.

The aediles also appear to have had some responsibility for fighting fires, likely as part of the *cura urbis*. It is possible that they managed fire fighting operations during the final turbulent years of the Republic, but they certainly had responsibility for it during Augustus' reign prior to his creation of the *vigiles*. It was as aedile that Egnatius Rufus earned great popularity for his fire fighting activities, and it was to the aediles that Augustus entrusted the control of the 600 slaves he provided for fire fighting following the downfall of Rufus.⁸ The involvement of the tribunes of the plebs was not actually connected with fire fighting per se, but more with the oversight of magistrates on behalf of the people. The texts of Valerius Maximus make this clear: it is the

⁵ Livy 39.14.10.

⁶ Their usual responsibility was the supervision of the jail and the punishments that took place there. See *Digest* 1.2.2.30 (Pomponius, *Enchiridii*, 1).

⁷ Livy 39.14.10. Livy uses the archaic forms *uls* and *cis* for *ultra* and *citra*. Their existence is also recorded in the *Digest* by the jurist Pomponius (*Digest* 1.2.2.30 (Pomponius, *Enchiridii*, 1)) although he suggests there were two boards of five, one *cis Tiberim*, the other *ultis Tiberim*. For a discussion of these and the unusual form *uls*, see Briscoe 2008: 270.

⁸ For Egnatius Rufus see Velleius Paterculus 2.91.3; Cassius Dio 53.24.4-5.

tribunes who take action against the accused *triumviri nocturni* for neglecting their duties.⁹

The involvement of the consuls is mentioned by both Livy and Cicero. In the first instance, Livy mentions that when some Campanian criminals caused a fire in the Forum Romanum, the consuls launched an investigation into who was responsible for the fire, at the behest of the senate.¹⁰ Cicero mentions (and bemoans) the lack of involvement by the consuls when Clodius and his lackeys burned his house on the Palatine.¹¹ While these suggest the involvement of the consuls when the situation is both serious and close to the heart of political power (i.e. the Forum Romanum) is difficult to generalise as both instances are exceptional. Also in the latter case, Cicero is discussing something that specifically impacted upon him, while also being an important figure in Roman politics (perhaps even more important in his own mind). Neither instance should lead us to generalise a wider role for the consuls in fighting fires.

As was mentioned above, the inadequacy of these measures to preventing fires in the city led to the creation of fire brigades run by private individuals. Probably the most famous fire brigade operated by a private individual at Rome was that run by Marcus Licinius Crassus during the first century BC.¹² Crassus used around 500 of his own slaves for this, although Plutarch claims he used them primarily as a means of acquiring property and land cheaply. However, it should be remembered that, in writing his biography, Plutarch was attempting to portray Crassus' greed and avarice; as such, there may have been more to this than Plutarch's account would initially suggest. Crassus may have been attempting something similar to Egnatius Rufus half a century later, namely trying to gain popularity by providing a service the city lacked.

This story also reveals two interesting aspects of fire brigades at Rome prior to the creation of the *vigiles*. First, it is clear that Crassus was not the only person undertaking such operations; according to Plutarch's story the first task of his fire brigade was to chase away any rival companies at the scene.¹³ Who ran these brigades

⁹ Valerius Maximus 8.1.*damn.*5 and 6.

¹⁰ Livy 26.27.1-9.

¹¹ Cicero, *De Domo Sua*, 24.62.

¹² Plutarch, *Crassus*, 2.4.

¹³ Plutarch, *Crassus*, 2.4. The existence of other private fire brigades is also attested in *Digest* 1.15.1.pr (Paul, *De Officio Praefecti Vigilum*, 1).

and to what purpose, Plutarch does not say, but it is possible they were motivated by similar reasons as Crassus. These other brigades were likely smaller than Crassus' given the ease with which Plutarch suggests they were chased away. The second aspect revealed by this anecdote is that fire brigades at this time were created primarily to serve the interests of those who ran them. In Crassus' case they were there to help their master acquire cheap property; no fire fighting was done until the purchase of the property had been negotiated.¹⁴ How this worked in practice is difficult to envisage, but it is likely that Crassus was more concerned with the land on which the property stood rather than the building itself, as the land would be the most valuable element.¹⁵

This situation continued into the Imperial period when Egnatius Rufus, as aedile, set up a private fire brigade using his own slaves.¹⁶ Whether his own ambition or Augustus' jealousy caused Rufus' downfall and demise is a question that does not need to be explored here; it is enough to say that Augustus took up Rufus' idea and created a fire brigade of his own, employing 600 of his own slaves in the enterprise and placing them under control of the aediles. However, this was still not a fire brigade organised and run by the state. Augustus may have been the embodiment of the state, but his fire brigade was still a private enterprise employing his personal slaves and ultimately answerable only to him. It was not until AD 6 that Rome was endowed with a truly state organised fire brigade, with a clearly organised structure and its own commander, as it was in this year that Augustus created the *vigiles*. Whether private fire brigades continued at Rome following this is impossible to say; there is no evidence for their existence. However, absence of evidence is not evidence of absence. I would argue that such a situation is unlikely however, using the example of Egnatius Rufus to support such a contention. To be effective a fire brigade would need a large number of personnel.¹⁷ In a state ruled by one man, the acquisition of power by an individual outside the circle surrounding this man would be unacceptable to the ruler and steps would likely be taken to remove the threat posed. This could be either the threat of a large body of organised men loyal to someone other than the ruler, or the popularity this

¹⁴ According to Plutarch at least. It may have been that the people who ran these fire brigades were doing so for genuinely altruistic reasons, but they may have been concerned with the acquisition of wealth or prestige, or with promoting themselves, or some combination of the above.

¹⁵ For a further discussion of this see Phillips 1973.

¹⁶ Velleius Paterculus 2.91.3; Cassius Dio 53.24.4-5.

¹⁷ As shown by Rufus employing 600 men and Crassus over 500.

individual gained by his actions (or indeed both). The example of Rufus would argue against the continued existence of private fire brigades.

Fire fighting technology

What equipment was available for fighting fires in the ancient world? The principal evidence for fire-fighting equipment comes from two texts in the *Digest*. The first concerns the duties of the *praefectus vigilum*, while the second concerns the fire-fighting equipment which was part of the *instrumenta* of a house included in legacies:

Sciendum est autem praefectum vigilum per totam noctem vigilare debere et coerrare calciatum cum hamis et dolabris. Ut curam adhibeant omnes inquilinos admonere, ne neglegentia aliqua incendii casus oriatur.

It should be realised that the prefect of the city guard is obliged to keep watch throughout the whole night and to keep on the prowl accompanied and properly shod. And equipped with hooks and axes, and he is obliged to admonish all occupiers not to let fires break out through some carelessness.¹⁸

Acetum quoque, quod extinguendi incendii causa paratur, item centones sifones, perticae quoque et scalae, et formiones et spongias et amas et scopas contineri plerique et Pegasus aiunt.

Most authorities, including Pegasus, say that vinegar too, which is intended to put out fires, is included; likewise, rags, siphons, also poles and ladders, mats, sponges, buckets, and brooms.¹⁹

Although both of these texts discuss or mention equipment that can be used for fighting fires, it should always be remembered that they are discussing two separate situations. Despite this, there is a tendency amongst scholars to amalgamate these two lists when presenting the equipment used by the *vigiles* to fight fires at Rome.²⁰ The only two pieces of equipment directly linked to the *vigiles* are the hooks and axes (*hamis et dolabris*) mentioned in the first text and even these are only connected with the *praefectus vigilum*. The former text does state that the prefect should be accompanied

¹⁸ *Digest* 1.15.3.3-4 (Paul, *De Officio Praefecti Vigilum*, 1).

¹⁹ *Digest* 33.7.12.18 (Ulpian, *Sabinus*, 20).

²⁰ For example, Baillie Reynolds 1926: 96 does not mention that the passage of Ulpian is discussing the *instrumenta* of a house and presents the list of equipment there as if it were directly connected to the *vigiles*.

and it is reasonable and logical to presume that this would be by the *vigiles*. That *hamis* and *dolabris* are in the plural form of the word suggests that those accompanying the prefect would be similarly equipped, hence it is justifiable stating hooks and axes as equipment employed by the *vigiles*.

Is it justifiable linking the equipment of the latter text with the *vigiles*? This is a much harder question to answer. It is unjustifiable to state as bald fact that the *vigiles* possessed this equipment, and yet the association of this list with fire-fighting argues that these items perhaps should be connected with the *vigiles*. (Although equally it could be argued that the *vigiles* would not need to have this stuff if they could get access to it from any of the houses of Rome.) The question is further mired in the problems connected with the application of some of this equipment for fighting fires. For example, buckets have been used throughout history (and indeed still are used) for fighting fires whether directly applying a substance (water, sand, etc.) to a fire to extinguish it, or as part of a bucket line to keep a vessel filled so that water can be pumped from it onto a fire.²¹ The use of siphons or force pumps is equally straightforward. However, the use of some of the other items is harder to determine. What would sponges be for? How might poles be used? Perhaps these items may have had some use in the context of small, domestic fires, but this does not necessarily mean that they would have been useful against larger scale ones. The inclusion or exclusion of a particular piece of equipment needs to be done on an individual basis, so let us turn the discussion to look at each of these items in turn and assess whether the *vigiles* may have used them.

Amae

The use of buckets for fighting fires is attested throughout history and, indeed, they continue to be used for this task even in modern times. They have been used to extinguish fires found in their initial stages (simply by applying a substance directly to the fire) but they also have a role in wider fire-fighting operations, whether keeping something wet in order to prevent the fire from setting it alight, or in keeping a vessel filled with water that is being pumped onto a fire. It would be surprising if the *vigiles*

²¹ Wright 2008: 134-138.

did not employ these in fighting fires, particularly if they used people to form bucket chains, as in this instance a large number of buckets would be required.

There are two sources that connect buckets with fire fighting. The first is Pliny the Younger's letter to Trajan following a fire at Nicomedia during Pliny's time as governor of Bithynia-Pontus (AD 110-112).²² In this he states that not a single *hama* was to be found for fighting the fire anywhere in the city. In Pliny's mind this was a fundamental piece of fire-fighting equipment and one that could be employed on a large-scale fire. Given that the other piece of equipment he mentions in his letter is the *siphon* he perhaps envisaged using the buckets as a means of filling the vessel this would be put into, although he does not state this specifically.

The other source that links buckets and fire-fighting is Juvenal:

*Dispositis praedives amis vigilare cohortem
Servorum noctu Licinus iubet, attonitus pro
Electro signisque suis Phrygiaque columna
Atque ebore et lata testudine.*

The millionaire Licinus stations his fire buckets and tells his cohort of slaves to keep watch throughout the night, terrified for his amber and statues and columns of Phrygian marble and ivory and plaques of tortoiseshell.²³

Presumably Licinus envisaged his slaves using these buckets to apply water directly to any fire that occurred, extinguishing them and thereby ensuring his artwork remained safe (although they were also likely there to prevent thieves carrying off any of Licinus' treasures also).

Scalae

Ladders have been associated with fire brigades and fire-fighting operations since the foundation of modern fire brigades. Their primary function is rescuing people trapped on the upper floors of buildings or providing a superior position for fire fighters to tackle a blaze.²⁴ This was likely their purpose in antiquity also. As far as I am aware,

²² Pliny, *Epistulae*, 10.33.

²³ Juvenal, *Satires*, 14.305-308.

²⁴ The Maryland Fire and Rescue Institute (MFRI) lists the following uses for ladders in modern fire fighting: gaining access to fire building and exposed buildings; advancing hose lines when stairways are being used by people escaping; replacing damaged stairways; removing trapped victims; removing

there is no extant ancient source linking *scalae* with use during any specific fire. They are mentioned primarily in connection with siege operations in ancient text.²⁵ This is no surprise given that there are no surviving accounts detailing how fires were fought.

Perticae

It is not clear precisely what form the poles employed by the *vigiles* took, nor to what use they were put. Given this uncertainty it is unsurprising that a number of suggestions have been put forward. Baillie Reynolds suggested that these were small and used to beat out fires.²⁶ It is not clear precisely what he based this suggestion on and, given that there are other items much better suited to such a task amongst those listed here, it is unlikely that this was their purpose.

What other possibilities are there? There are two other uses to which *perticae* might have been put. The first is that these were not as short as Baillie Reynolds suggested but were rather long, perhaps with a length of ten feet. This is suggested given that *perticae* are defined as possessing such a length in some sources.²⁷ However, even if we suggest that these were poles with a length of ten feet, this gets us no nearer to understanding their use. If the *vigiles* used them, it is possible they fitted their hooks to the end of these to assist them in tearing structures down, or at least tearing flammable material away from them. This would make sense as it would allow the *vigiles* to carry out their task while also minimising the risk to themselves by providing distance between them and any fire.

The other suggestion is that they were used to prop up walls that were in danger of collapsing rather than to beat out fires. This is based on the use of *perticae* as props as recorded in some of the extant literature, although it should be noted that such a use is normally recorded in an agricultural context connected with the cultivation of crops.²⁸

people from crowded fire escapes; getting from one roof level to another; reinforcing weakened building features. It is possible that at least some of these uses were found for ladders in antiquity. For more on ladders in modern fire fighting, see www.mfri.org.

²⁵ See, for example, during Scipio Africanus' campaigns in Spain as described by Livy (26.45.2; 28.19.9; 29.7.4) and their use against Caesar's forces during his campaigns in Gaul (*Gallic War*, 5.43; 7.81) and by Pompey during the civil war (*Civil Wars*, 3.63)

²⁶ Baillie Reynolds 1926:96-97.

²⁷ For example, Cato, *On Agriculture*, 15.2; Pliny, *Epistulae*, 8.2.

²⁸ For example, *perticae* are attested as props in the cultivation of vines. See Cato, *On Agriculture*, 33.4; Columella 4.26.2; Varro, *On Agriculture*, 1.8.2.

In some respects this is connected with the suggestion above, as it is still possible that the poles had a length of ten feet in order to carry out this task.

Centones

What use might mattresses or blankets have in fighting fire? It depends partly on which definition of *centones* is favoured. If these were indeed mattresses, perhaps they were employed to catch, or at least break the fall, of those jumping or falling from buildings that were on fire. However, this is an unlikely suggestion in the context of being connected with the *instrumenta* of a house. Such a suggestion would only be applicable if these were employed *en masse* by the *vigiles*. If these were rather blankets, there are a wider variety of applications. These could have been used to beat out or smother flames, or they might be soaked in water (or possibly *acetum*) and spread over flammable objects to prevent these from catching fire.

These suggestions are based on attestations for their use in fire-fighting contexts in two sources. Caesar talks of the use of *centones* to protect siege equipment from fire.²⁹ Likewise Vegetius also discusses their use for protecting siege equipment from fire. The *testudo*, *causiae* (a wooden construction placed below the walls to allow besiegers to undermine them in relative safety) and mobile siege towers were protected in this fashion.³⁰ He also mentions the use of these to protect a city's gates from being burned, showing that there was an understanding in antiquity that objects could be protected from fire by covering them.

Scopae

It is not clear precisely what function brooms served in fighting a fire. Baillie Reynolds suggested that this possibly represented a technical term the meaning of which is now lost, as he could see no application for brooms in fighting fires.³¹ In the extant literature where this word occurs, it often has a specific meaning. For example, in both Martial and Plautus they are usually employed for cleaning purposes.³² Do these represent what would be used to clean up following a fire? Possibly, although if this were the case

²⁹ Caesar, *Civil Wars*, 2.9-10.

³⁰ Vegetius, *Epitome of Military Science*, 4.14-17.

³¹ Baillie Reynolds 1926: 97.

³² Martial 14.82; Plautus, *Stichus*, 347; *Bacchides*, 3 (4).

then they would have no place amongst the equipment used by the *vigiles*, as their job was to put fires out and make an area safe it was not to clear up afterwards. Given that this suggestion is unlikely, there are three other possibilities.

The most likely is that they were used to beat out fires. While such a suggestion may sound bizarre, there is evidence of such a use for brooms in the modern world. The following is from the *New York Times*:

The fire fighting is done in gangs of eight men or boys, six using brooms to beat out the flames and two using shovels to dig ditches around houses and across open spaces to keep the fires from spreading.³³

Similarly, brooms are used to beat out fires set by gamekeepers on the moorland of Scotland in order to both maintain the quality of the heather on the moors and to encourage the red grouse to keep to certain areas for the shooting season.³⁴ Although these are modern applications, their use is unlikely to have been a recent discovery and this suggestion is the best explanation for the use of *scopae*. However, the other two should also be mentioned here. One is that they were used in the aftermath of a fire to sweep away the ash and thereby release any trapped heat to escape. This would prevent fires restarting due to hotspots.³⁵ Such an application would apply more readily if these were employed by the *vigiles*. The other suggestion is that these were used during the fighting of fires to sweep away hot ash and small pieces of debris. These would pose a danger both to people in the vicinity of a fire and those trying to fight it. If this were the case, perhaps these were dipped in water or *acetum* in order to prevent them catching alight. Again, this suggestion would be more applicable on a larger scale if employed by the *vigiles*.

Acetum

Vinegar is another odd piece of equipment to include amongst those used for fighting fires. The writer of this passage of the *Digest* clearly saw a use for it, but what that use was is not clear. There was a wide variety of uses that *acetum* was put in antiquity, but

³³ *New York Times*, May 15 1922, page 13.

³⁴ http://www.cairngormsmoorlands.co.uk/moorland_gamekeeping.htm.

³⁵ This suggests an awareness of the phenomena of hotspots in antiquity, something it is not clear whether this was understood or not.

none of these have any application for fighting fires.³⁶ Pliny the Elder connects *acetum* with fighting fires, saying that they are most easily put out by vinegar, birdlime and eggs.³⁷ However, it is not clear whether these three items should be mixed together and it is difficult to understand how birdlime and eggs would help to put out a fire. Bailey argued that this was not intended to be thrown over a fire to extinguish it, but was rather meant as a fireproof coating pointing out the effectiveness of egg white and birdlime for this.³⁸ Aineas Tacticus also noted this in antiquity.³⁹ Such a use would make sense for the military applications Aineas Tacticus was concerned with, and perhaps would even make sense in the domestic context to which the *Digest* referred. In the context of fire-fighting operations carried out by the *vigiles*, however, this application would not be an efficacious one for their task. Is there any employment to which the *vigiles* may have put *acetum*?

When *acetum* is ascribed to the *vigiles* it is as something that was applied directly to a fire in order to extinguish it. Baillie Reynolds proposed that it was contained in small vessels that were then either thrown or shot (using a *ballista*) into fires to extinguish them.⁴⁰ This is an inventive suggestion, but it is not clear how effective such an application would be in actually putting out a fire, as well as there being no support for such a suggestion (or anything similar) amongst the extant literature. However, Baillie Reynolds was likely baffled by the use of such a substance and how any substantial quantity of the substance was moved to the scene of a fire. He was also perhaps influenced by the use of such ‘fire grenades’ in the late nineteenth and early twentieth centuries. Giving a few of these grenades to each member of the cohort would resolve this problem of moving quantities of *acetum* to a fire, at least to a certain extent. The idea of using *acetum* to extinguish a fire is supported by Aineas Tacticus, who states that anything extinguished in this manner would be harder to re-ignite.⁴¹

Another possible use was drenching the *centones* in vinegar and then laying these drenching blankets over flammable items in order to slow the spread of a fire and buying the *vigiles* valuable time to bring it under control. This suggestion is supported

³⁶ The uses of *acetum* include: a condiment for food (Martial 7.25.5); medicinal uses (Celsus 6.7.2.D cites it as a remedy for pus in the ears); and a derogatory term for cheap wine (Plautus, *Rudens*, 937).

³⁷ Pliny, *Natural History*, 33.30.

³⁸ Bailey 1929: 210-211.

³⁹ Aineas Tacticus 34.1.

⁴⁰ Baillie Reynolds 1926: 97.

⁴¹ Aineas Tacticus 34.1. For a discussion of this passage, see Whitehead 1990: 197-198.

by Vitruvius. In the final book of his work he discusses the use of vinegar for protecting the *testudo*. He suggests that this can be protected by laying raw hides stuffed with seaweed or straw steeped in vinegar, in order to ward off attacks by *ballistae* and fire.⁴² Although Vitruvius suggests only drenching the stuffing of the hides in vinegar, there is no reason to suggest that this use could not be applied more extensively. Given that both Aeneas Tacticus and Vitruvius recommend this use for a military application they must have envisaged besiegers and the besieged stockpiling large quantities of *acetum*, as small quantities would not achieve the aims of their advice here.

Experiments have shown that *acetum* was no more effective at extinguishing a blaze than water.⁴³ Although Aeneas says it would have been harder to re-ignite a fire extinguished using vinegar, this aspect has not been proven.⁴⁴ Despite this, it does not mean the Romans did not use *acetum* in such a manner. They were aware, for example, of the use of this substance for shattering rocks.⁴⁵ This may have led their thinking for its use for extinguishing fires. Also, although Aeneas and Vitruvius discuss military applications for *acetum*, there is no reason to think it could not be applied to civil situations.

Spongiae

The inclusion of sponges amongst the *instrumenta* for fighting fires is another odd item and it is not clear precisely what purpose they served. Also, it is not clear if the *vigiles* would have any use for these items.

Sifones

The final item mentioned by the *Digest* is the *sifon* or force pump. This device is described in a number of ancient works, notably Hero of Alexandria and Vitruvius.⁴⁶ Although they both refer to the device by different names (the *siphon* and *Ctesibica*

⁴² Vitruvius 10.14.3.

⁴³ See Bailey 1929: 210; Nossov 2005: 202-203.

⁴⁴ Nossov 2005: 203.

⁴⁵ This can be seen in Livy 21.37.2 and Juvenal, *Satires*, 10.153 (for Hannibal's use of this in crossing the Alps); Vitruvius 8.3.9; Pliny, *Natural History*, 33.21. For the efficiency of this technique and further discussions of this, see Bailey 1929: 199-200; Healy 1999: 131-133.

⁴⁶ Hero, *Pneumatica*, 1.28; Vitruvius 10.7.1-3.

machina respectively) they are clearly both talking about the same thing.⁴⁷ Hero even specifically links this device with fighting fires.

There are a number of descriptions of *siphones* being used in fire-fighting operations. Apollodorus talks about using these to put out fires on siege towers.⁴⁸ Pliny the Younger mentions the *siphon* as a piece of fire-fighting equipment in his letter to Trajan concerning the fire of Nicomedia, here saying that none of these were available to fight the fire and that this lack of equipment was part of the reason the fire spread so far.⁴⁹ Isidore of Seville also makes some interesting comments regarding the *siphon*:

Sifon vas appellatum quod aquas sufflando fundat; utuntur enim hos oriente. Nam ubi senserint domum ardere, currunt cum sifonibus plenis aquis et extinguunt incendia, sed et camaras expressis ad superiora aquis emundant.

One vessel is called a siphon because it pours out water when air is blown into it. They use these in the East, for when they realise that a house is burning they run with siphons filled with water and extinguish the fire, and they also clean ceilings with water forced upwards from siphons.⁵⁰

While Isidore links *siphones* with fire fighting (and cleaning!) another source discusses their use in fighting an actual fire. Towards the end of Polycarp's time as bishop of Smyrna (around AD 155), a fire broke out during the night and the chief magistrate ordered the equipment held for such occasions to be produced. At this point the *siphones* were produced, although no other pieces of equipment are mentioned.⁵¹

Ballista

It is frequently stated that the *vigiles* used *ballistae* to demolish structures within the city of Rome in order to halt the spread of fire, an assertion made on a piece of evidence which will be discussed later in this section. This assertion is often supported by the citation of three laws contained in the *Digest*, or with reference to Suetonius' description of a fire-fighting operation during the fire of AD 64. Given that all these pieces of

⁴⁷ Oleson 1984: 51-52.

⁴⁸ Apollodorus, *Polioretica*, 174.1-7.

⁴⁹ Pliny, *Epistulae*, 10.33.

⁵⁰ Isidore, *Etymologiae*, 20.6.9.

⁵¹ Pionius, *Life of Polycarp*, 28.

evidence are referenced without further discussion (or indeed fully quoting the texts involved) I will provide these in full below before moving on to the analysis of them. Suetonius describes a fire-fighting operation during the fire of AD 64 in the following manner:

Nam quasi offensus deformitate veterum aedificiorum et angustiis flexurisque vicorum, incendit urbem tam palam, ut plerique consulares cubicularios eius cum stuppa taedaque in praediis suis deprehensos non attigerint, et quaedam horrea circa domum Aurea, quorum spatium maxime desiderabat, ut bellicis machinis labefacta atque inflammat sint, quod saxeo muro constructa erant.

For under cover of displeasure at the ugliness of the old buildings and the narrow, crooked streets, he [Nero] set fire to the city so openly that several ex-consuls did not venture to lay hands on his chamberlains although they caught them on their estates with tow and firebrands, while some granaries near the Golden House, whose room he particularly desired, were demolished by engines of war and then set on fire, because their walls were of stone.⁵²

The immediately obvious point here is that there is no mention of either the *vigiles* or *ballistae*. It has been argued that Suetonius is actually discussing operations carried out by the *vigiles*, but he disguises their identity in order to maintain the illusion that no one is fighting the fire, as well as to highlight Nero's avarice.⁵³ This would suit Suetonius' purpose of portraying Nero in a negative manner, given that he is one of the "bad" emperors of his work. The actions carried out by the *cubicularii* in this passage could be ascribed to the *vigiles* desperately trying to control the fire by creating firebreaks, both on the estates of the ex-consuls and at the foot of the Esquiline. In this reconstruction of events, the *bellicis machina* mentioned by Suetonius must be the *ballistae* of the *vigiles*.

However, there are some problems with such an interpretation. The most obvious one is that there is no mention of *ballistae* and while they could rightly be classified as *bellicis machina*, so could a number of other pieces of equipment. Indeed, a battering ram seems a much more likely interpretation for the operation discussed by Suetonius. The other objection to this is why is it assumed that Suetonius is referring to operations carried out by the *vigiles*? It is certainly possible, but it is not certain and

⁵² Suetonius, *Nero*, 38.

⁵³ This is argued by Daugherty 1992: 231-233.

there were other large groups of disciplined and organised men in the city who could have been doing this, namely the urban cohorts and the Praetorian Guard. Indeed the latter may be a more likely candidate for two reasons. First, their commander was Tigellinus, a former commander of the *vigiles* who had fought at least one fire during his tenure in that post.⁵⁴ Second, it is possible that the *vigiles* were leaderless at this moment in time, as the *praefectus vigilum* (Annaeus Serenus) and a number of other high-ranking members of the cohort had perished at a banquet through the consumption of poisonous mushrooms.⁵⁵ If this were the case, then Tigellinus taking command of fire-fighting operations using the resources he had to hand (the Praetorian Guard) may not seem so fantastic. It is possible that Suetonius invented the whole incident, rendering it plausible because demolition was such a common feature of fire fighting at this time; the discussion of demolition as a fire-fighting tactic can be found below.

Moving on to discuss the texts of the *Digest*, it is worth quoting these in full. They are as follows:

Quod dicitur damnum iniuria datum Aquilia persequi, sic erit accipiendum, ut videatur damnum iniuria datum, quod cum damno iniuriam attulerit: nisi magna vi cogente fuerit factum, ut Celsus scribit circa eum, qui incendii arcendi gratia vicinas aedes intercidit: nam hic scribit cessare legis Aquiliae actionem: iusto enim metu ductus, ne ad se ignis perveniret, vicinas aedes intercidit: et sive pervenit ignis sive ante extinctus est, existimat legis Aquiliae actionem cessare.

What is said about suing under the *lex Aquilia* for damage done wrongfully must be taken as meaning that damage is done wrongfully when it inflicts wrong together with the damage, and this is inflicted, except where it is done under compulsion of overwhelming necessity, as Celsus writes about the man who pulled down his neighbour's house to keep a fire off his own; for he writes that there is no action under the *lex Aquilia*, because he pulled down the adjoining house in the reasonable fear that the fire would reach his own house. Celsus also thinks that

⁵⁴ Tacitus, *Histories*, 1.72. The fire recorded during Tigellinus' tenure was in AD 62 (Tacitus, *Annals*, 15.22). Daugherty 1992: 235 argues that it is clear from the fact that the counter fires started on the property of Tigellinus that he had taken control of fighting the fire. While this is an attractive suggestion, this evidence is not definitive.

⁵⁵ Pliny, *Natural History*, 22.96; Seneca, *Epistulae*, 63.14-15. For this argument see Daugherty 1992: 235-239. Daugherty also argues that Tigellinus would have taken some members of the upper echelon with him to the Praetorian Guard, further weakening the *vigiles*' command structure.

there is no action under the *lex*, regardless of whether the fire would actually have reached him or been put out first.⁵⁶

Ut puta si incendii arcendi causa vicini aedes intercidi et quod vi aut clam mecum agatur aut damni iniuria. Gallus enim dubitat, an excipi oporteret: 'quod incendii defendendi causa factum non sit'? Servius autem ait, si id magistratus fecisset, dandam esse, privato non esse idem concedendum: si tamen quid vi aut clam factum sit neque ignis usque eo pervenisset, simpli litem aestimandam: si pervenisset, absolui eum oportere. Idem ait esse, si damni iniuria actum foret, quoniam nullam iniuriam aut damnum dare videtur aequae perituris aedibus.

Take the case of my having pulled down my neighbour's house to ward off a fire, as a result of which an action against force or stealth, or for unlawful damage is being brought. Would it be proper to bring the defence "what was not done for the purpose of defence against fire?" Servius says that if the magistrates did this, the defence should be granted, but that the same concession should not be made to a private person; but if it was done by force or stealth and fire did not reach that far, damages for the simple value should be awarded; if it did, the doer should be released. He says the same applies if there should be an action for unlawful damage, because it is held that no injury or damage can be equal to that of a house about to perish.⁵⁷

Quemadmodum ergo procedit, quod Labeo scribit, si defendendi mei causa vicini aedificium orto incendio dissipaverim, et meo nomine et familiae iudicium in me dandum? Cum enim defendendarum mearum aedium causa fecerim, utique dolo careo. Puto igitur non esse verum, quod Labeo scribit.

How then does one proceed over what Labeo writes that if, when a fire arose therein, I pull down my neighbour's house in self-defence, an action will be granted both against me personally and in the name of my family? Since I do this to preserve my own premises, I am lacking in evil intent. I think, therefore, that what Labeo writes is not correct.⁵⁸

A glance at these laws reveals several immediately obvious points. First, there is no mention in any of these laws of either the *vigiles* or *ballistae*. Second, they support the assertion that demolition was an important tactic in fighting fires (a theme to which we will return shortly), although none of these make clear precisely how this was to be achieved. Finally, while they offer a potential assist for the *vigiles* in helping to pull

⁵⁶ *Digest* 9.2.49.1 (Ulpian, *Disputationum*, 1).

⁵⁷ *Digest* 43.24.7.4 (Ulpian, *Edictum*, 71).

⁵⁸ *Digest* 47.9.3.7 (Ulpian, *Edictum*, 56).

down a structure (a task surely too great for one person), this need not necessarily be the case: the law may be presuming other people living in the vicinity would wish to slow or stop the spread of a fire. Although these laws support the general idea of demolition as a fire-fighting tactic, they do not support the use of *ballistae* in achieving this, or even the direct involvement of the *vigiles* in such operations. The other equipment already discussed could also take down a building much more effectively (from the point of view of providing some control over the debris) than using a *ballista* could achieve.

There are two final problems to discuss with regards to these weapons. The first concerns their deployment in the city. *Ballistae* capable of knocking down buildings would, by their very nature, be large pieces of equipment. We also know from a number of ancient sources that the streets of Rome were famous (or infamous) for their narrowness. How could these large siege weapons have been deployed effectively in the narrow confines of Rome? The simple answer is they could not. Even moving them around the city would have been difficult. This is a significant argument against their use by the *vigiles*.

The second problem relating to *ballistae* is the evidence for their very existence. As was mentioned at the start of this chapter, the existence of these amongst the equipment of the *vigiles* is based on one piece of evidence, a solitary inscription which scholars often cite, but never discuss in depth, or even reproduce in its entirety. The reason for this is simply because to do so would completely destroy their argument regarding these. Below is the inscription concerned:

*Matronae cum carpentis / sifon(arius) / falc(arius) / unc(arius) /
B(allista)*

The wives with their carriages / Force pump (man) / Scythe (man) /
Hook (man) / Ballista (man?)⁵⁹

As is immediately obvious this inscription does not actually mention *ballistae* at all. The lone 'B' remains but all traces of the other letters of this word are lost. While there is no reason to assume that the word is not *ballista* there is also no reason to assume it is either. Ultimately, to base an entire argument for the *vigiles'* main tactic for fighting fires being demolition with *ballistae* on this piece of evidence alone is dubious at best.

⁵⁹ *CIL* 6.31075 (= 3744).

When considered alongside the objections raised above regarding the evidence cited alongside this assertion, and the problems of use and deployment, it must be concluded that they were neither used by the *vigiles* nor even existed amongst their equipment. The scholars who have argued this, however, were right in many respects in that they had identified that the principal tactic for fighting fires (major fires anyway) was demolition. The discussion will now turn to look at how fires may have been fought in the ancient world.

Conclusion

In theory, and quite justifiably, all of the above items might have been issued to the *vigiles* to assist them in fighting fires, with the obvious exception of *ballistae* which they certainly did not possess. The case for some is much stronger than for others. For example, it is much more likely to argue the *vigiles* were issued with buckets and siphons than with sponges, simply because the use of these former items in fighting a fire is much clearer than regarding the latter one. However, there is a much more radical conclusion that one is more inclined to accept. What if the *vigiles* did not possess lots of equipment? What if, in fact, they only had the hooks and axes that the *Digest* describes them as being issued with? In some respects, this conclusion makes perfect sense. By limiting the two implements that can be easily turned into offensive weaponry, and employed against the state, to individuals in the employ of the state (i.e. the *vigiles*) the emperors are better able to enforce order, to a certain extent at least. Also, if house owners are obliged to possess a variety of equipment in order to fight fires, the *vigiles* do not need such equipment as it can be readily accessed at the site of any fire. In this case people on site can also be employed in assisting the fighting of a fire.

There are some flaws with this argument and it would be remiss if one were to ignore them. The most obvious one regards the *instrumenta*. The *Digest* describes an ideal situation, namely that every household would possess this equipment, and it does not necessarily reflect the reality of the situation. What if this equipment were not widely available within the city? Then the *vigiles* would turn up at fires hopelessly equipped to deal with them if we confine their equipment to hooks and axes. This is almost certainly why many have argued that the list of equipment of the *vigiles* should be expanded to encompass the *instrumenta*.

The other problem is that this changes the whole complexion of the *vigiles* as an entity within the city. They would have to move from being viewed as a fire-fighting force, to a force of specialists regarding fire, who help to fight them but are not solely responsible for fighting them. This is because under the scenario above they would employ people in the vicinity of the fire in helping to extinguish it, perhaps, for example, by forming bucket-chains in order to either directly extinguish a fire or in order to keep a reservoir for a siphon filled in order that one could be extinguished. This also raises a further problem, one that will be tackled in the next section, regarding how people react when confronted by a fire. It is enough to say here that while one describes this in an easy fashion (i.e. the *vigiles* turn up and employ people to help them tackle the blaze) the reality of this situation may be very different. This is especially true as we encounter issues relating to crowd psychology and the unpredictable nature of crowds when faced with these situations.

Despite these problems, however, one is inclined to the idea that the hooks and axes might have been the only implements issued to the *vigiles*. It would make sense of a certain number of issues relating to them. The fact that they are rarely mentioned in connection with a fire could imply that they are such a common sight in the city that writers felt they did not need to mention them when discussing a fire; their readers would know that the *vigiles* would be there. Or it could imply that they were not mentioned because they were not actually responsible for fighting the fire, they were instead responsible for organising people to fight fires. Claudius' behaviour in rewarding those fighting a fire in the Aemiliana during his reign would also make more sense in this regards.⁶⁰ This would also make more sense of their policing duties. If they are only needed in a consulting and supervising role when it comes to fires, it frees up more of their number for policing duties.

The water supply of Rome

Water was an important part of fighting fires and, as such, some analysis of the water supply of the capital is warranted. Frontinus makes the following comment regarding the aqueducts of Rome:

⁶⁰ Suetonius, *Claudius*, 18.

Tot aquarum tam multis necessariis molibus pyramidas videlicet otiosas compares aut cetera inertia sed fama celebrata opera Graecorum.

With such an array of indispensable structures [i.e. the aqueducts] carrying so many waters, compare, if you will, the idle Pyramids or the useless, though famous, works of the Greeks.⁶¹

However, the aqueducts were only important for delivering water to the city.⁶² From the perspective of fire fighting, the important part of the water supply was its distribution throughout Rome. This began at *castella*, the distribution tanks from which water was delivered elsewhere in the city in either tile or lead pipes.⁶³ Vitruvius talks about the water of the city being divided into three parts; one third to fountains and basins (*lacus et salientes*), one third to baths (*balneae*) and the final third to private houses (*privatae domus*).⁶⁴ Vitruvius' analysis does not agree with the distribution recorded by Frontinus, who also divides water usage into three, although with a further subdivision amongst the third category.⁶⁵ Frontinus divides Rome's water supply as follows; water for the Imperial palace and buildings under the emperor's control (*nomine Caesaris*), water for citizens granted rights by the emperor (*privati*), and *usus publici*. This final category he divides into four; *opera publica* (water for all structures and monuments for public use), *castra* (presumably the headquarters of each cohort of *vigiles*, as well as other important offices and installations⁶⁶), *munera* (often interpreted as ornamental fountains, 39 in total⁶⁷) and *lacus* (public basins, 591 in total).

Taylor argues that it was the *castella* that were very important for fire fighting in this system as they were the main sources of water for this.⁶⁸ Part of his reasoning for this is the sheer number of these; 247 before Frontinus became *curator aquarum* and even more later.⁶⁹ This number would mean that any given *castellum* would be

⁶¹ Frontinus, *On Aqueducts*, 16.

⁶² Hodge 1989 provides a general discussion of the aqueducts of Rome, while Evans 1994 discusses those that existed in the time of Frontinus, as well as two that were built after him.

⁶³ Evans 1994: 6-7; Taylor 2000: 49-51.

⁶⁴ Vitruvius 8.6.1-2.

⁶⁵ Frontinus, *On Aqueducts*, 78-86. Evans (1994: 7) notes that Vitruvius and Frontinus are separated by over a century, but that Vitruvius' division probably reflects his own theory, rather than actual practice.

⁶⁶ Evans 1994: 10 argues that each of the headquarters of the *vigiles* would receive a supply of water.

⁶⁷ Evans 1994: 11 argues that these may also have served a double function as distribution *castella*.

⁶⁸ Taylor 2000: 49-51.

⁶⁹ Taylor 2000: 49.

between 190 and 270 metres from any point in the city.⁷⁰ Taylor considers such a distance acceptable for a bucket brigade comprised of the *vigiles* and volunteers.

Taylor's argument is compelling, although there are a number of points concerning it one might raise. First, he assumes the involvement of the local community.⁷¹ However, the vital role he assumes for community involvement makes little sense considering the size of the *vigiles* (either 3500 or 7000 members). In other words, perhaps the reason there were so many *vigiles* was in case the local community did not get involved in helping to fight fires. Indeed, we know of one occasion where this did not happen in antiquity. This was the fire of Nicomedia during Pliny the Younger's tenure as governor of Bithynia-Pontus. Here he talks about the inhabitants simply standing around watching the fire rather than making any effort to fight it.⁷² Perhaps the Roman authorities envisaged the local community helping in the event of any fire, but created a large force as insurance in case this did not happen. This is also perhaps why the corps was doubled in size later; the insurance policy was deemed insufficient.

His argument regarding *castella* does seem to imply that he sees no role for all the other water outlets in the city, namely the *munera* and the *lacus*.⁷³ Although there are nowhere near as many *munera* as *castella*, there are far more *lacus*. It seems unlikely that at least the *lacus* had no role to play, particularly if he is also arguing that volunteers played a vital role in fighting fires. The nearest water outlets to any fires were unlikely to be *castella* and more likely to be a fountain or public basin. Before the *vigiles* could be summoned and a bucket brigade established, some members of the community might try to fight the fire and it would be those local water outlets that would play a vital part in this.

⁷⁰ Taylor 2000: 50.

⁷¹ This is discussed in Chapter 5.

⁷² Pliny, *Epistulae*, 10.33.

⁷³ Taylor 2000: 46-48 argues that there were so many *lacus* in order to serve the demographic need of an area and that if the size of the neighbourhood increased, the basins there were not enlarged, more were simply added.

How were fires fought?

There is no way of knowing precisely how a fire was fought in the city of Rome. No treatises survive from antiquity, if indeed any were ever written as one is not aware of any references to any. This is an important point to make at the beginning of this discussion and is in no way a negative one. It is simply a statement of fact. However, we can try and piece together bits of information relating to aspects of this question to give us an indication of perhaps where we should look for information. Some comparative evidence from other periods of history also has a place here, given Rome's relatively high level of technological development in comparison with other pre-Industrial societies. Most of this discussion will look at the practical use of the equipment above in dealing with fires.

Before looking at the actual fighting of the fire, we should perhaps consider something that is easy to overlook: how would the *vigiles*, or anyone in the vicinity, know that a fire had actually started? Or even more fundamentally: how were the *vigiles* summoned to the scene of a fire? This may seem a banal question, but it is one that is easy to overlook and difficult to provide an answer. The only hint in the surviving source material comes from Petronius' *Satyricon*. At the end of the dinner of Trimalchio, there is a trumpet blast that the *vigiles* interpret as a call for their services. They proceed to smash in the door of Trimalchio's house prepared to extinguish a fire.⁷⁴ This is a very funny scene, but are there any inferences we can draw from this? One doubts very much that every house had an emergency trumpet on hand for use in event of fire! In all seriousness, however, this does suggest that the *vigiles* could be called to the scene of a fire (in other words they were both a proactive and reactive force) and that alarm calls using trumpets were one way of summoning them. Given that a preponderance of alarm trumpets in Rome is unlikely, one would suggest that the more common way of summoning the *vigiles* would have been by sending a runner to fetch them. This is a logical inference given that the *castra* of the *vigiles* were likely highly visible buildings, the location of which would probably be fairly well known. Similarly, while not as visible the *excubitoria* may have been known locally by residents of each region. However, this raises a further question: would these have been manned all day? It is no good sending a runner to fetch specialists from their quarters if

⁷⁴ Petronius, *Satyricon*, 79.

there is no one there to receive him. In the case of the *castra* it is possible, but it is a much more difficult question to answer in the case of the *excubitoria*.

Another interesting question that should be considered here is whether the *vigiles* were a fire brigade in the practical sense (i.e. did they take direct responsibility for putting out fires?) or whether they were specialists who organised the local community in the fighting of fires. This question was raised above and it is important to return to it here because a certain amount of fire fighting must have been done by people in the community and, therefore, with no formal training in putting out a fire. As will be suggested below, homeowners would likely have put out a fire themselves if they discovered one in their home, for the simple reason that waiting for the *vigiles* would allow the fire to take hold and spread. Likewise, it is possible that if some members of a cohort of the *vigiles* discovered a fire in its initial stages while on patrol, they would engage members of the public to assist them in extinguishing it, rather than let the fire take hold and spread while they waited for more of their colleagues to arrive. If it was small enough they may even have tackled it themselves by commandeering equipment from the vicinity. This is a very difficult question to answer, but ultimately is there a need to pigeonhole them in such a fashion? Is there any reason they cannot be both? This is indeed what one would suggest, that they were both the fire brigade of the city, but that they also acted as specialists directing members of the public if the occasion called for it. In other words, they were the fire brigade when they could deal with a fire simply by commandeering equipment and specialists when fires were too big to tackle by themselves. Ultimately both groups (*vigiles* and city residents) had a strong determination to limit both the number and spread of fires in the city given the damage they could potentially cause.

To a certain extent, how a fire would be fought would be determined by its location and the extent of the fire. For example, a small domestic blaze would likely be tackled by the owner/occupier of the property with the *instrumenta* mentioned in the *Digest*, presuming that they possessed such equipment. By small here, one means a fire found in its initial stages that has not had the opportunity to spread far beyond the source, in other words in the pre-flashover phase. This would largely be achieved by throwing water or *acetum* on the fire, or perhaps by smothering it with a blanket or beating it out with a broom.

Similarly, with larger domestic fires, the inhabitants of the building concerned would attempt the initial fighting of the fire while support was gathered either from neighbours or by fetching the *vigiles* (or perhaps both). This would be in the post-flashover phase before the fire had spread beyond the limits of the initial structure. Similar resolutions would also likely have taken place when considering small or large fires in public places or buildings, although a larger role for the *vigiles* may be suggested here based on the possible lack of readily available fire fighting equipment. These larger fires may have been tackled by applying water to the blaze (either with buckets or perhaps a siphon) or by demolishing buildings surrounding that containing the fire in order to starve it of any possible fuel to spread to and thereby keep it contained. The problem here is the difficulty of demolishing a structure. The laws of the *Digest* relating to culpability for this suggest that this was something that occurred fairly regularly, but in some respects it is difficult to see this as having been the case. This is because of the materials used in the construction of Rome, namely brick, stone and concrete, buildings made of which are not easily demolished without the use of explosives. Indeed, even wooden buildings may not have been demolished quickly enough to prevent the spread of fire. For example, during the Great Fire of London, the only way to slow the fire was to blow up wooden buildings and then remove the debris in order to starve the fire of fuel, as they simply could not be demolished fast enough by manpower alone.⁷⁵

To a certain extent some of the above may sound like mere guesswork, but it is actually based on logical extrapolations from the available evidence. First, given the time lost in sending someone to raise the alarm with the *vigiles* and then waiting for them to prepare and answer the call, a fire could develop from a small to a large one, or possibly even a blaze threatening a significant area of the city (although this latter suggestion is harder to ascertain and would be dependent on a number of factors). Second, the *Digest* lists equipment for fighting fires that a house should possess, something which would suggest that those who wrote the laws contained in this text presumed some fire fighting would be taking place by private individuals, whether the occupiers of a property, their neighbours, or both. The proviso must be added here that simply because there is this presumption it does not mean people fought fires that took place in their homes, or indeed that they even owned any or all of the equipment listed

⁷⁵ Porter 1996: 37.

in the *Digest*. Finally, there is the in-built 'fight or flight' response possessed by all people: some when faced by a situation such as a fire will flee, while others will naturally stay and attempt to tackle the blaze. This final point will be explored further below.

Conclusion

The measures in place for dealing with fires during the Republic were in keeping with the nature of tackling the pressures of urban living in antiquity, but were almost completely ineffective in dealing with the problem of fire. It was for this reason that private individuals maintained their own private fire brigades in Rome, in an attempt to provide a service that was clearly lacking. The effectiveness of these private fire brigades would probably vary widely. The creation of the *vigiles* was in keeping with the higher priority placed on addressing the problems and stresses of urban living by Augustus and his successors, and was a highly visible solution to the problem.

The equipment employed by the *vigiles* would be both what is specifically linked with them in the *Digest* and those described as being part of the *instrumentum* of a house employed in fighting fires. This is because if they worked for putting out domestic fires, then they surely had a role to play in fighting fires on a larger scale. Only the *perticae* and the *spongiae* are slightly unusual items whose use is unclear. The *siphon* and *ballista* often connected with the *vigiles* are more specialised pieces of equipment. Of these, the former clearly had a role to play in fighting fires and were employed by the *vigiles*. We know this as there are a number of literary texts connecting *siphones* and fires, while amongst the cohort lists of the *vigiles* we see individuals styled as *siponarius* or *sifonarius* (pump-man). The latter, however, neither had a place in fighting fires, nor were employed by the *vigiles*. Their use is based on dubious evidence and employing them would be difficult if not impossible.

The way the *vigiles* fought major fires was principally through the use of the tactic of demolition, although as Pionius' text makes clear, they might also have put them out through the application of water. Analogy with the Great Fire of London confirms this suggestion. It is probable that they did not just fight fires but also

organised members of the local community to support them, even if only to provide a bucket chain in order to fill the reservoir the *siphon* was placed in.

We must now try to draw all the various aspects from this research together to try to draw a picture of fire in the city of Rome in antiquity.

Conclusion

The aim set out at the start of this study was to provide a systematic examination of the subject of fire. This does not just encompass the uses of fire at Rome, but a variety of other topic areas. This includes the reasons behind fires; how fires started and spread throughout a room, structure, and the wider urban landscape of Rome; the damage fires might cause the buildings and the inhabitants of the capital, including the psychological trauma inflicted on both survivors and the *vigiles*; the aftermath of a fire, including relief provided to the inhabitants following a fire, the disruption caused to the functioning of life at Rome, how the city was cleaned up and rebuilt, and the compensation provided to victims of fire; and, finally, the equipment and tactics employed by the *vigiles* in attempting to extinguish any fires that did occur.

A number of important conclusions have been reached concerning these aims. The first is that accident was, unsurprisingly, the most common reason for fires in the capital and although arson is a very close second, this is probably more a result of imperfections in our information than reflecting the reality of the situation. Next is that fire was used extensively for a wide variety of tasks at Rome. However, it was not the simple use of fire that caused them to break out. It was the presence of flammable material near to sources of fire that allowed this, and it was use of flammable materials in the city that allowed fires to spread from one structure to the next. There were also a variety of features of the capital that helped to slow or stop the spread of a fire.

Another important conclusion is the damage inflicted on both the city and its inhabitants by fire. This is important as it reveals both how ferocious fires could be and how people might have suffered, both physically and mentally, as a result of one. The aftermath of a fire is also important, as it was here that people, particularly the poor, might suffer further. This would be as a result of living in conditions that were not as sanitary as they could be, and due to a lack of and adequate food supply. Fire might also damage the economic functioning of the city, although given Rome's size, recovery was probably quicker here than it was elsewhere in the empire. Finally, the equipment and tactics employed by the *vigiles* are vital in understanding how fires were

fought in the capital in antiquity. Demolition played a key part in fighting fires, particularly major ones, but the *vigiles* were probably more than simply a fire brigade; they were also probably specialists who organised the community in fighting fires that occurred, whether by organising them as bucket brigades, or perhaps even using them in some way to help fight fires more directly.

How does this research differ from what has gone before? Like Aldrete's work on flooding, this is the first systematic examination of this subject, but it builds on a large number of varied works that have gone before. This is particularly true of those works that only indirectly have an impact on fire, such as Mols' work on the wooden furniture of Herculaneum. In some areas this is only building on existing work in a limited way, such as with the *vigiles*. Here this study analyses the equipment in a more systematic way, by attempting to determine how these were used in tackling fires in the city. Other aspects of this study, however, are truly novel. No attempt has previously been made to apply fire dynamics to studying ancient fires, particularly in applying this to an actual historical example, namely the fire of AD 64. Similarly, no other work has attempted to understand the long term impact of fire on Rome's inhabitants, especially the potential psychological trauma fire might inflict on both survivors and members of the *vigiles*.

There is still work that can be done on this topic. Much more systematic work on the damage caused by fire in the archaeological record would advance our knowledge of precisely how fires might spread through a structure, as well as potentially revealing more detailed information about the temperatures fires could reach. Similarly more work could be done regarding the psychological impact of fire, particularly its impact on the *vigiles*. Work might also be done on fires in other parts of Rome's empire and conclusions from these compared to those in this work to ascertain their validity.

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Fire and its consequences in the city of Rome in antiquity, 390 BC – AD 410

Volume II: Bibliographies and Appendices

Richard Byles

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Appendix 1

Fires in literature, 390 BC – AD

410

1. 390-385 BC¹

post principum caedem nulli deinde mortalium parci, diripi tecta, exhaustis inici ignes. ceterum, seu non omnibus delendi urbem libido erat, seu ita placuerat principibus Gallorum et ostentari quaedam incendia terroris causa, si compelli ad deditionem caritate sedum suarum obsessi possent, et non omnia concremari tecta ut quodcumque superesset urbis, id pignus ad flectendos hostium animos haberent, nequaquam perinde atque in capta urbe primo die aut passim aut late vagatus est ignis ... quocumque clamor hostium, mulierum puerorumque ploratus, sonitus flammae et fragor ruentium tectorum avertisset ... Galli quoque per aliquot dies in tecta modo urbis nequiquam bello gesto cum inter incendia ac ruinas captae urbis nihil superesse praeter armatos hostes viderent nec quicquam tot cladibus territos nec flexuros ad deditionem animos ni vis adhiberetur, experiri ultima et impetum facere in arcem statuunt.

After this slaughter of the magnates, no living being was thenceforth spared; the houses were rifled, and then set on fire. Now - whether it was that the Gauls were not all animated by a passion for the destruction of the City, or whether their chiefs had decided on the one hand to present the spectacle of a few fires as a means of intimidating the besieged into surrender from a desire to save their homes, and on the other, by abstaining from a universal conflagration, hold what remained of the City as a pledge by which to weaken their enemies' determination - certain it is that the fires were far from being so indiscriminate or so extensive as might be expected on the first day of a captured city ... In whatever direction their attention was drawn by the shouts of the enemy, the shrieks of the women and boys, the roar of the flames, and the crash of houses falling in ... For some days the Gauls had been making useless war merely upon the houses of the City. Now that they saw nothing surviving amidst the ashes and ruin of the captured City except an armed foe whom all these disasters had failed to appal, and who would entertain no thought of surrender unless force

¹ For a discussion of the dating of the Gallic sack, see Rosenberger 2003.

were employed, they determined as a last resort to make an assault on the Citadel. (Livy 5.41-43)

2. 241 BC

Cum templum Vestae arderet, Caecilius Metellus, pontifex maximus, ex incendio sacra rapuit.

When the temple of Vesta was burning, Caecilius Metellus, the pontifex maximus, rescued the sacred objects from the flames. (Livy, *Periochae*, 19)

ἐμπρησθεντος γὰρ τοῦ τεμενους καὶ τῶν παρθενων φευγουσῶν ἐκ τοῦ πυρος τῶν ἱεροφαντῶν τισ Λευκιος Καικιλιος ὁ καλουμενος Μετελλος ἀνὴρ ὑπατικός, ὁ τον ἀοιδιμον ἐκ Σικελιας ἀπο Καρχηδονιων καταγαγων ὀκτω καὶ τριακοντα καὶ ἑκατον ἐλεφαντων θριαμβον, ὑπεριδων τῆς ἰδιας ἀσφαλειας τοῦ κοινη συμφεροντος ἐνεκα παρεκινδυνευσεν εἰς τα καιομενα βιασασθαι καὶ τα καταλειφθεντα ὑπο τῶν παρθενων ἀρπασας ἱερα διεσωσεν ἐκ τοῦ πυρος· ἐφ' ᾧ τιμας παρα τῆς πολεως ἐξηνεγκατο μεγαλας, ὡς ἡ τῆς εἰκονος αὐτοῦ τῆς ἐν Καπιτωλιῳ κειμενης ἐπιγραφη μαρτυρεῖ.

For when the temple [of Vesta] caught fire and the virgins fled from the flames, one of the pontiffs, Lucius Caecilius, called Metellus, a man of consular rank, the same who exhibited a hundred and thirty-eight elephants in the memorable triumph which he celebrated for his defeat of the Carthaginians in Sicily, neglecting his own safety for the sake of the public good, ventured to force his way into the burning structure, and, snatching up the holy things which the virgins had abandoned, saved them from the fire; for which he received great honours from the State, as the inscription upon his statue on the Capitol testifies. (Dionysius of Halicarnassus 2.66.4)

Cum Metellus p.m. Tusculanum petens iret, corvi duo in os eius adversum, veluti iter impediētes, advolaverunt, vixque extuderunt ut domum rediret. insequenti nocte aedis Vestae arsit. quo incendio Metellus inter ipsos ignis raptum Palladium incolume servavit.

Chief Pontiff Metellus was on his way to the Tusculum district when two ravens flew in his face as though to stop his progress and finally forced him to go back home. The following night the temple of Vesta caught fire. In the conflagration Metellus seized the Palladium in the midst of the flames and saved it intact. (Valerius Maximus 1.4.5)

3. 213 BC

Romae foedum incendium per duas noctes ac diem unum tenuit. Solo aequata omnia inter Salinas ac portam Carmentalem cum Aequimaelio Iugarioque vico et templis Fortunae ac matris Matutae. Et extra portam late vagatus ignis sacra profanaque multa absumpsit.

At Rome a terrible fire lasted two nights and a day. Everything between the Salinae and Porta Carmentalis was levelled to the ground, including the Aequimaelium and Vicus Iugarius, also the Temples of Fortune and Mater Matuta. Outside the gate also the fire spread to a distance and destroyed many buildings sacred and profane. (Livy 24.47.15-16)

4. 210 BC

Interruptit hos sermones nocte quae pridie Quinquatrus fuit pluribus simul locis circa forum incendium ortum. Eodem tempore septem tabernae quae postea quinque, et argentariae quae nunc novae appellantur, arsere; comprehensa postea privata aedificia – neque enim tum basilicae erant –, comprehensae lautumiae forumque piscatorium et atrium regium. Aedis Vestae vix defensa est tredecim maxime servorum opera, qui in publicum redempti ac manu missi sunt. Nocte ac die continuatum incendium fuit, nec ulli dubium erat humana id fraude factum esse, quod pluribus simul locis, et iis diversis, ignes coorti essent.

Such utterances were interrupted on the night before the Quinquatrus by a fire which broke out in several places at once about the Forum. At the same time the seven shops which later were five, and the bankers' offices, now called Tabernae Novae, caught fire; then private houses took fire – for there were no basilicas then, – the quarter of the Quarries took fire, and the Fish Market and the Atrium Regium. The Temple of Vesta was saved with difficulty chiefly by the aid of thirteen slaves, who were purchased by the state and manumitted. The fire held on night and day, and no one doubted that it was the work of incendiaries, since the flames had burst out in several places at once, and places not adjacent at that. (Livy 26.27.1-9)

5. 203 BC

Annus insignis incendio ingenti, quo Clivus Publicius ad solum exustus est.

The year was marked by a great conflagration in which the Clivus Publicius was burned to the ground. (Livy 30.26.5)

6. 192 BC

Incendio a foro Boario orto diem noctemque aedificia in Tiberim versa arsere, tabernaeque omnes cum magni pretii mercibus conflagraverunt.

A fire broke out in the Forum Boarium, and for a day and a night the buildings facing the Tiber burned, and all the shops with merchandise of great value were consumed. (Livy 35.40.8)

7. 178 BC

Incendio circa forum cum plurima essent deusta, aedes Veneris sine ullo vestigio cremata. Vestae penetralis ignis extinctus.

When a large area around the forum was devastated by fire, the temple of Venus was burned without leaving a trace. The home fire of Vesta went out. (Julius Obsequens 8)

8. 148 BC

Sacrarium Opis et laurus foci maximo incendio inviolata.

The shrine of Ops and a laurel belonging to the hearth were unharmed by a huge conflagration. (Livy, *Periochae*, 50)

Vasto incendio Romae cum regia quoque ureretur, sacrarium et ex duabus altera laurus ex mediis ignibus inviolatae steterunt.

In a huge fire at Rome, the Regia also was burned, but the sanctuary and one of a pair of laurel trees came out of the midst of the fire unscathed. (Julius Obsequens 19)

9. 111 BC

Maxima pars urbis exusta cum aede Matris Magnae

A very large part of the city was burned out, along with the temple of the Great Mother. (Julius Obsequens 39)

10. 83 BC

Fraude aeditui Capitolium una nocte conflagravit.

By the malfeasance of a temple attendant the Capitol burned down in a single night. (Julius Obsequens 57)

11. 52 BC

δημαρχοῦντες γὰρ ἐς τε τὴν ἀγορὰν τὸν νεκρὸν ὑπο τὴν ἑω ἔσεκομισαν καὶ ἐπὶ τὸ βῆμα ἐπέθεσαν πᾶσι τε ἐπέδεικνυσαν, καὶ ἐπέλεγον οἷα εἰκὸς ἦν ὀδυρομένοι, ὥστε τὸν ὄμιλον καὶ ἐξ ὧν ἔωρον καὶ ἐξ ὧν ἤκουον συνταραχθῆναι, καὶ μῆτε τοῦ ὀσίου μῆτε τοῦ θεοῦ ἐτι φροντισαί, ἀλλὰ παντὰ μὲν τὰ περὶ τὰς ταφὰς νομιμὰ συγγεαί, πᾶσαν δὲ ὀλίγου τὴν πόλιν καταπρῆσαι. τὸ γὰρ σῶμα τοῦ Κλωδίου ἀραμένοι ἐς τε τὸ βουλευτήριον ἐσηνεγκάν, καὶ εὐθέτησαν, καὶ μετὰ τοῦτο πυρᾶνε ἐκ τῶν βαθρῶν συνησαντες ἔκαυσαν καὶ ἐκεῖνο καὶ τὸ συνέδριον.

As tribunes they conveyed the body into the Forum just before dawn, placed it on the rostra, exhibited it to all, and spoke appropriate words over it with lamentations. So the populace, as a result of what it both saw and heard, was deeply stirred and no longer showed any regard for things sacred or profane, but overthrew all customs of burial and burned down nearly the whole city. They took up the body of Clodius and carried it into the senate house, laid it out properly, and then after heaping up a pyre out of the benches burned both the corpse and the building. (Cassius Dio 40.49.1-3)

12. 50 BC

Incendium quo maxima pars urbis deleta est prodigii loco habitum.

A fire by which a very large section of the city was destroyed was regarded as a portentous event. (Julius Obsequens 65)

13. 49 BC

καὶ ἕτερον ἀλλὰ τε καὶ τὸν τοῦ Κυρίου ναὸν κατεφλέξεν.

And another fire consumed the temple of Quirinus as well as other buildings.
(Cassius Dio 41.14.3)

14. 38 BC

*ἡ τε γὰρ σκηνη ἡ τοῦ Ῥωμυλου ἐξ ἱερουργιασ τινος, ἦν οἱ
ποντιφικες ἐν αὐτῇ ἐπεποιηκεσαν, ἐκαυθη·*

Thus the hut of Romulus was burned as a result of some ritual which the pontifices were performing in it. (Cassius Dio 48.42.4)

15. 31 BC

*καὶ πυρ ἄλλα τε οὐκ ὀλιγα καὶ αὐτοῦ τοῦ ἵπποδρομου πολυ το τε
Δημητριον καὶ ἕτερον ναον Ἐλπιδος εφθειρεν. ἐδοξαν μεν γὰρ οἱ
ἐξελευθεροι αὐτο πεποιηκεναι· πᾶσι γὰρ τοις ἐν τε τῇ Ἰταλια
αὐτῶν οὔσι καὶ πεντε μυριαδων οὔσιαν ἢ καὶ πλειω κεκτημενοις
το ὄγδοον αὐτῆς συντελεσαι ἐκελευσθη, κύκ τουτου καὶ ταραχαι
καὶ φονοὶ καὶ ἐμπρησεις ὑπ' αὐτῶν πολλαι ἐγενοντο, καὶ οὐ
προτερον γε κατεστησαν πριν ἢ τοῖς ὀπλοις καταδαμασθῆναι.*

Fire also consumed a considerable portion of the Circus itself, along with the temple of Ceres, another shrine dedicated to Spes, and a large number of other structures. The freedmen were thought to have caused this; for all of them who were in Italy and possessed property worth 200,000 sesterces or more had been ordered to contribute an eighth of it. This resulted in numerous riots, murders and the burning of many buildings on their part, and they were not brought to order until they were subdued by armed force. (Cassius Dio 50.10.3-4)

16. 23 BC

*καὶ ἐπειδη ἡ οἰκια ἡ ἐν τῷ Παλατιῳ ὄρει, ἡ προτερον μεν τοῦ
'Αντωνιου γενομενη ὑστερον δε τῷ τε 'Αγριππα καὶ τῷ Μεσσαλα
δοθειῖσα, κατεφλεχθη, τῷ μεν Μεσσαλα ἀργυριον ἐχαρισατο, τον
δε 'Αγριππαν συνοικον ἐποιησατο.*

And when the house on the Palatine Mount which had formerly belonged to Antony but had later been given to Agrippa and Messalla was burned down, he

presented money to Messalla, but made Agrippa share his own house. (Cassius Dio 53.27.5)

17. 16 BC

ἐξελθόντων δ' οὖν αὐτῶν το τῆς Νεοτήτος μεγάρων ὑπο τὴν ἐπιούσαν νυκτὰ κατεκαύθη.

The night following their departure the temple of Iuventus was burned to the ground. (Cassius Dio 54.19.7)

18. 14 BC

ἡ τε στοὰ ἡ Παυλείου ἔκαυθη, καὶ τὸ πῦρ ἀπ' αὐτῆς πρὸς τὸ Ἑστιαῖον ἀφικέτο, ὥστε καὶ τὰ ἱερά ἐς τε τὸ Παλατιὸν ὑπο τῶν ἄλλων ἀειπαρθενῶν ἀνακομισθῆναι.

The Basilica of Paulus was burned and the flames spread from it to the temple of Vesta, so that the sacred objects there were carried up to the Palatine by the Vestal Virgins. (Cassius Dio 54.24.2)

19. 12 BC

καὶ πυρὶ ἄλλα τε τῆς πόλεως συχνὰ καὶ ἡ τοῦ Ῥωμύλου σκηνὴ ἔκαυθη, κορακῶν κρεὰ ἐς αὐτὴν ἐκ βωμοῦ τινος ἐμπυρὰ ἐμβαλόντων.

Many buildings in the city were destroyed by fire, among them the hut of Romulus, which was set ablaze by crows which dropped upon it burning meat from some altar. (Cassius Dio 54.29.8)

20. AD 3

... in restitutionem Palatinae domus incendio absumptae.

... to rebuild his [Augustus'] house on the Palatine, which had been destroyed by fire. (Suetonius, *Augustus*, 57)

Ἐμπρησμοῦ δὲ ποτε το παλατιον διαφθειραντος, και πολλῶν ἀντῶ πολλὰ διδοντων, οὔδεν ἔλαβεν ἢ μονον παρα μεν τῶν δημων χρυσοῦν παρα δε τῶν ἰδιωτῶν δραχμην.

Once when a fire destroyed the palace and many persons offered him [Augustus] large sums of money, he accepted nothing but an aureus from entire communities and a denarius from single individuals. (Cassius Dio 55.12.4)

21. AD 6

Ἐπειδη τε ἐν τῷ χρονῷ τουτω πολλὰ τῆς πολεως πυρι διεφθαρη, ἀνδρας τε ἐξελευθερους ἐπταχῆ πρὸς τας ἐπικουρίας αὐτῆς κατελεξατο, και ἀρχοντα ἵππεα αὐτοῖς προσεταξεν, ὡς και δι' ὀλιγου σφᾶς διαλυσων. οὐ μεντοι και εποίησε τοῦτο· καταμαθων γαρ ἐκ τῆς πειρας και χρησιμωτατην και ἀναγκαιοτατην την παρ' αὐτῶν βοθηϊαν οὔσαν ἔτηρησεν αὐτους. και εἴσι και νῦν οἱ νυκτοφυλακες οὔτοι ἰδιον τινα τροπον οὐκ ἐκ τῶν ἀπελευθερων ἐτι μονον ἀλλὰ και ἐκ τῶν ἄλλων στρατευομενοι, και τειχη τε ἐν τῇ πολει ἔχουσι και μισθον ἐκ τοῦ δημοσιου φερουσιν.

When many parts of the city were at this time destroyed by fire, he organized a company of freedmen, in seven divisions, to render assistance on such occasions, and appointed a knight in command over them, expecting to disband them in a short time. He did not do so, however; for he found by experience that the aid they gave was most valuable and necessary, and so retained them. These night-watchmen exist to the present day, as a special corps, one might say, recruited no longer from the freedmen only, but from the other classes as well. They have barracks in the city and draw pay from the public treasury. (Cassius Dio 55.26.4-5)

22. Reign of Tiberius (AD 14-37)²

Sic certe Tiberius Caesar concremato ponte naumachiaro larices ad restitundinem caedi in Raetia praefinivit.

At all events those were the limits fixed in advance by the Emperor Tiberius for felling larches in Raetia for the reconstruction of the deck of the *naumachia* when it had been burnt down. (Pliny, *Natural History*, 16.190)

² This fire cannot be dated more precisely as it is not mentioned in an annalistic history.

23. AD 16

ἐμπρησθεῖσι τε πισιν οὐχ ὅπως ὁ Τιβεριοῦς ἀλλὰ καὶ ἡ Λιουία ἤμυνε.

Assistance was rendered to the victims of various conflagrations not only by Tiberius but also by Livia. (Cassius Dio 57.16.2)

24. AD 21

Pompeii theatrum incensum.

The theatre of Pompey burned down. (Jerome, *Chronicle*, 254d)

25. AD 27

Nondum ea clades exoleverat, cum ignis violentia urbem ultra solitum adfecit, deusto monte Caelio ... Caesar obviam isset tribuendo pecunias ex modo detrimenti.

The disaster had not yet faded from memory, when a fierce outbreak of fire affected the city to an unusual degree by burning down the Caelian Hill ... the Caesar checked the critics by a distribution of money in proportion to the loss sustained. (Tacitus, *Annals*, 4.64)

Et rursus quibus dam dominis insularum, quae in monte Caelio deflagrant, pretio restituto.

And again when he made good the losses of some owners of blocks of houses on the Caelian Mount, which had burned down. (Suetonius, *Tiberius*, 48)

26. AD 36

Idem annus gravi igne urbem adfecit, deusta parte circi, quae Aventino contigua, ipsoque Aventino; quod damnum Caesar ad gloriam vertit exsolutis domuum et insularum pretiis. Miliens sestertium in munificentia ea conlocatum.

The same year saw the capital visited by a serious fire, the part of the Circus adjoining the Aventine being burnt down along with the Aventine itself: a disaster which the Caesar converted to his own glory by paying the full value of

the mansions and tenement-blocks destroyed. One hundred million sesterces were invested in this act of munificence. (Tacitus, *Annals*, 6.45)

πυρι πολυ πλειω περι τε τον ἵπποδρομον και περι τον Ἄουεντῖνον ἐφθαρη, ὡστε του Τιβεριου δισχιλιας και πεντακοσιας μυριαδας τοῖς ζημιωθεῖσι τι ἀπ' αὐτοῦ δοῦναι.

[A] much larger region in the vicinity of the Circus and the Aventine was devastated by fire. To the sufferers from the latter disaster³ Tiberius contributed a hundred million sesterces. (Cassius Dio 58.26.5)

27. AD 38

και ἐμπρησιν τινα μετα τῶν στρατιωτῶν κατασβεσας ἐπηρκεσε τοῖς ζημιωθεῖσι.

He [Gaius] helped the soldiers to extinguish a conflagration and rendered assistance to those who suffered loss by it. (Cassius Dio 59.9.4)

28. Reign of Claudius (AD 41-54)⁴

Apud Romanos quoque honos mature huic arti contigit, siquidem cognomina ex ea Pictorum traxerunt Fabii clarissimae gentis, princepsque eius cognominis ipse aedem Salutis pinxit anno urbis conditae CCCCL, quae pictura duravit ad nostram memoriam aede ea Claudii principatu exusta.

In Rome also honour was fully attained by this art at an early date, inasmuch as a very distinguished clan of the Fabii derived from it their surname of Pictor, 'Painter', and the first holder of the name himself painted the Temple of Health in the year 450 [i.e. 304 BC] from the foundation of the city: the work survived down to our own period, when the temple was destroyed by fire in the principate of Claudius. (Pliny, *Natural History*, 35.19)

Cum Aemiliana pertinacius arderent, in diribitorio duabus noctibus mansit ac deficiente militum ac familiarum turba auxilio plebem per magistratus ex omnibus vicis convocavit ac positus ante se cum pecunia fiscis ad subveniendum hortatus est, repraesentans pro opera dignam cuique mercedem.

On the occasion of a stubborn fire in the Aemiliana he remained in the Diribitorium for two nights, and when a body of soldiers and of his own slaves

³ Dio had earlier reported the flooding of the Tiber.

⁴ This fire cannot be dated more precisely as it is not mentioned in an annalistic history.

could not give sufficient help, he summoned the commons from all parts of the city through the magistrates, and placing bags full of money before them, urged them to the rescue, paying each man on the spot a suitable reward for his services. (Suetonius, *Claudius*, 18)

29. AD 62

Isdem consulibus gymnasium ictu fulminis conflagravit, effigiesque in eo Neronis ad informe aes liquefacta.

In the same consulate, the Gymnasium was struck by lightning and burned to the ground, a statue of Nero, which it contained, being melted into a shapeless piece of bronze. (Tacitus, *Annals*, 15.22)

30. AD 64

Sequitur clades, forte an dolo principis incertum (nam utrumque auctores prodidere), sed omnibus, quae huic urbi per violentiam ignium acciderunt, gravior atque atrocior. Initium in ea parte circi ortum, quae Palatino Caelioque montibus contigua est, ubi per tabernas, quibus id mercimonium inerat, quo flamma alitur, simul coeptus ignis et statim validus ac vento citus longitudinem circi corripuit ... Sexto demum die apud imas Esquilias finis incendio factus, prorutis per immensum aedificiis, ut continuae violentiae campus et velut vacuum caelum occurreret. Necdum positus metus aut redierat plebi spes: rursum grassatus ignis patulis magis urbis locis, eoque strages hominum minor: delubra deum et porticus amoenitati dicatae latius procidere ... Domuum et insularum et templorum, quae amissa sunt, numerum inire haud promptum fuerit: sed vetustissima religione, quod Servius Tullius Lunae, et magna ara fanumque, quae praesenti Herculi Arcas Evander sacraverat, aedesque Statoris Iovis vota Romulo Numaeque regia et delubrum Vestae cum Penatibus populi Romani exusta.

There followed a disaster, whether due to chance or to the malice of the sovereign is uncertain (for each version has its sponsors), but graver and more terrible than any other which has befallen this city by the ravages of fire. It took its rise in the part of the Circus touching the Palatine and Caelian hills; where, among the shops packed with inflammable goods, the conflagration broke out, gathered strength in the same moment, and, impelled by the wind, swept the full length of the Circus ... Only on the sixth day, was the conflagration brought to an end at the foot of the Esquiline, by demolishing the buildings over a vast area and opposing to the unabated fury of the flames a clear tract of ground and an open horizon. But fear had not yet been laid aside, nor had hope yet returned to

the people, when the fire resumed its ravages; in the less congested parts of the city, however; so that, while the toll of human life was not so great, the destruction of temples and porticoes dedicated to pleasure was on a wider scale ... It would not be easy to attempt an estimate of the private dwellings, tenement-blocks, and temples, which were lost; but the flames consumed, in their old-world sanctity, the temple dedicated to Luna by Servius Tullius, the great altar and chapel of the Arcadian Evander to the Present Hercules, the shrine of Jupiter Stator vowed by Romulus, the regia of Numa, and the holy place of Vesta with the Penates of the Roman people. (Tacitus, *Annals*, 15.38-41)

Nam quasi offensus deformitate veterum aedificiorum et angustiis flexurisque vicorum, incendit urbem tam palam, ut plerique consulares cubicularios eius cum stuppa taedaque in praediis suis deprehensos non attigerint, et quaedam horrea circa domum Auream, quorum spatium maxime desiderabat, ut bellicis machinis labefacta atque inflammata sint, quod saxeo muro constructa erant. Per sex dies septemque noctes ea clade saevitum est ad monumentorum bustorumque deversoria plebe compulsa. Tunc praeter immensum numerum insularum domus priscorum ducum arserunt hostilibus adhuc spoliis adornatae deorumque aedes ab regibus ac deinde Punicis et Gallicis bellis votae dedicataeque, et quidquid isendum atque memorabile ex antiquitate duraverat.

For under cover of displeasure at the ugliness of the old buildings and the narrow, crooked streets, he set fire to the city so openly that several ex-consuls did not venture to lay hands on his chamberlains although they caught them on their estates with tow and firebrands, while some granaries near the Golden House, whose room he particularly desired, were demolished by engines of war and then set on fire, because their walls were of stone. For six days and seven nights destruction raged, while the people were driven for shelter to monuments and tombs. At that time, besides an immense number of dwellings, the houses of leaders of old were burned, still adorned with trophies of victory, and the temples of the gods vowed and dedicated by the kings and later in the Punic and Gallic wars, and whatever else interesting and noteworthy had survived from antiquity. (Suetonius, *Nero*, 38)

λαθρα γαρ τινας ὡς και μεθουοντας ἢ και κακουργοῦντας τι ἄλλως διαπεμπων, το μεν πρῶτον ἐν που και δυο και πλειονα ἄλλα ἄλλοθι ὑπεπιμπρα ... Και ταῦτα οὐκ ἐν μιᾷ μονον ἀλλ' ἐπι πλειους και ἡμεπας και νυκτας ὁμοιως ἐγινετο. και πολλοι μεν οἴκοι ἐρημοι τοῦ βοηθησοντος σφισιν ἀπωλοντο, πολλοι δε και ὑπ' αὐτῶν τῶν ἐπικουρουτων προσκατεπρησθησαν ... τοιουτων δε δη ἄλλων ἄλλοθι συμβαινοντων, ὑπελαβε ποτε το πῦρ ἄμενος και ἐπι τα λοιπα ὁμου παντα ἤγαγεν ... το τε γαρ Παλατιον το ὄρος

συμπαν και το θεατρον του Ταυρου της τε λοιπης πολεως τα δυο που μερη εκαυθη, και ανθρωποι αναριθμητοι διεφθαρησαν.

Accordingly he [Nero] secretly sent out men who pretended to be drunk or engaged in other kinds of mischief, and caused them at first to set fire to one or two or even several buildings in different parts of the city ... Now this did not all take place on a single day, but it lasted for several days and nights alike. Many houses were destroyed for want of anyone to help save them, and many others were set on fire by the very men who came to lend assistance ... While such scenes were occurring at various points, a wind caught up the flames and carried them indiscriminately against all the buildings that were left ... The whole Palatine hill, the theatre of Taurus, and nearly two-thirds of the remainder of the city were burned, and countless persons perished. (Cassius Dio 62.16.1-18.5)

Nero, ut similitudinem ardentis Troiae inspiceret, plurimam partem Romanae urbis incendit.

Nero set the greatest part of Rome on fire, so that he might get a look at something like the burning of Troy. (Jerome, *Chronicle*, 265g)

31. AD 69

erant antiquitus porticus in latere clivi dextrae subeuntibus, in quarum tectum egressi saxis tegulisque Vitellianos obruebant. neque illis manus nisi gladiis armatae, et arcessere tormenta aut missilia tela longum videbatur: faces in prominentem porticum iecere et sequebantur ignem ambustasque Capitolii fores penetrassent, ni Sabinus revulsas undique statuas, decora maiorum, in ipso aditu vice muri obiecisset. tum diversos Capitolii aditus invadunt iuxta lucum asyli et qua Tarpeia rupes centum gradibus aditur. improvisa utraque vis; propior atque acrior per asylum ingruerat. nec sisti poterant scandentes per coniuncta aedificia, quae ut in multa pace in altum edita solum Capitolii aequabant. hic ambigitur, ignem tectis obpugnatores iniecerint, an obsessi, quae crebrior fama, dum nitentis ac progressos depellunt. inde lapsus ignis in porticus adpositas aedibus; mox sustinentes fastigium aquilae vetere ligno traxerunt flammam alueruntque. sic Capitolium clausis foribus indefensum et indireptum conflagravit.

There were then some old colonnades on the right as you go up the slopes; the defenders came out on the roofs of these and showered stones and tiles on their assailants. The latter had no arms except their swords, and they thought that it would cost too much time to send for artillery and missiles; consequently they threw firebrands on a projecting colonnade, and then followed in the path of the flames; they actually burned the gates of the Capitol and would have forced

their way through, if Sabinus had not torn down all the statues, memorials to the glory of our ancestors, and piled them up across the entrance as a barricade. Then the assailants tried different approaches to the Capitol, one by the grove of the asylum and another by the hundred steps that lead up to the Tarpeian Rock. Both attacks were unexpected; but the one by the asylum was closer and more threatening. Moreover, the defenders were unable to stop those who climbed through neighbouring houses, which, built high in time of peace, reached the level of the Capitol. It is a question here whether it was the besiegers or the besieged who threw fire on the roofs. The more common tradition says this was done by the latter in their attempts to repel their assailants, who were climbing up or had reached the top. From the houses the fire spread to the colonnades adjoining the temple; then the "eagles" which supported the roof, being of old wood, caught and fed the flames. So the Capitol burned with its doors closed; none defended it, none pillaged it. (Tacitus, *Histories*, 3.71)

32. AD 80

Et incendium Romae per triduum totidemque noctes.

A fire at Rome which continued three days and as many nights. (Suetonius, *Titus*, 8)

Πῦρ δε δη ἕτερον ἐπιγειον τῷ ἐξῆς ἔτει πολλα πανυ τῆς Ῥωμης, τοῦ Τιτου προς το παθημα το ἐν τῇ Καμπανια γενομενον ἐκδημησαντος, ἐπενειματο· και γαρ το Σεραπειῶν και το Ἰσειῶν τα τε σεπτα και το Ποσειδωνιον το τε βαλαιεῖον το τοῦ Ἀγριππου και το πανθειον το τε διριβιτωριον και το τοῦ Βαλβου θεατρον και την τοῦ Πομπηιου σκηνην, και τα Ὀκταουεια οἰκηματα μετα τῶν βιβλιων, τον τε νεων τοῦ Διος τοῦ Καπιτωλιου μετα τῶν συνναων αὐτοῦ κατεκαυσεν. οὕτω το κακον οὐκ ἀνθρωπινον ἀλλα δαιμονιον ἐγενετο· παρεστι γαρ ἐκ τουτων ὧν κατελεξα παντι τῷ τεκμηρασθαι και τᾶλλα τα ἀπολλυμενα.

However, a second conflagration, above ground, in the following year spread over very large sections of Rome while Titus was absent in Campania attending to the catastrophe that had befallen that region. It consumed the temple of Serapis, the temple of Isis, the Saepta, the temple of Neptune, the Baths of Agrippa, the Pantheon, the Diribitorium, the theatre of Balbus, the stage building of Pompey's theatre, the Octavian buildings with their books, and the temple of Jupiter Capitolinus with its surrounding temples. Hence the disaster seemed to be not of human but of divine origin; for anyone can estimate, from

the list of buildings that I have given, how many others must have been destroyed. (Cassius Dio 66.24.1-3)

Romae plurimae aedes incendio concremantur.

In Rome many buildings are burned to the ground in a fire. (Jerome, *Chronicle*, 271f)

33. AD 104

Romae aurea domus incendio conflagravit.

At Rome, the Domus Aurea burned down in a fire. (Jerome, *Chronicle*, 276c)

34. AD 110

Pantheon Romae fulmine concrematum.

The Pantheon in Rome burned down by lightning. (Jerome, *Chronicle*, 277e)

35. Reign of Antoninus Pius (AD 138-161)⁵

Nos ergo familiares eius circumfusi undique eum prosequeremur domum, cum inde subeuntes montem Cispium conspiceremus insulam quandam occupatam igni multis arduisque tabulatis editam et propinqua iam omnia flagrare vasto incendio.

We friends of his therefore thronged about him on all sides and were escorting him home, when, as we were on our way up the Cispian Hill, we saw that a block of houses, built high with many stories, had caught fire, and that now all the neighbouring buildings were burning in a mighty conflagration. (Aulus Gellius 15.2)

Graecostadium post incendium restitutum.

The Graecostadium, restored by him after its burning. (*Historia Augusta, Antoninus Pius*, 8.2)

Et Romae incendium, quod trecentas quadraginta insulas vel domos absumpsit.

⁵ This fire cannot be dated more precisely as it is not mentioned in an annalistic history.

And a fire at Rome which consumed three hundred and forty tenements and dwellings. (*Historia Augusta, Antoninus Pius, 9.1*)

36. AD 188

In Capitolium fulmen ruit, et magna inflammatione facta, bibliotheca, et vicinae quoque aedes concrematae.

Lightning destroys the Capitol and a great fire having been caused, the library and also nearby buildings were consumed. (Jerome, *Chronicle, 291a*)

37. AD 192

πῦρ τε νυκτωρ ἀρθεν ἐξ οἰκίας τινος και ἐς το Εἰρηναῖον ἐμπεσον τας ἀποθηκας τῶν τε Αἰγυπτίων και τῶν Ἀραβίων φορτίων ἐπενειματο, ἐς τε το παλατιον μετεωρισθεν ἐσῆλθε και πολλα πανν αὐτοῦ κατεκαυσεν, ὥστε και τα γραμματα τα τῆ ἀρχῆ προσηκοντα ὀλιγου δεῖν παντα φθαρήναι ... οὐδε γαρ κατασβεσθῆναι ἀηθρωπινη χειρι ἠδυνηθη, καιτοι παμπολλων μεν ἰδιωτῶν παμπολλων δε στρατιωτῶν ὑδροφορουντων, και αὐτοῦ τοῦ Κομμοδου ἐπελθοντος ἐκ τοῦ προαστειου και ἐπισπερχοντος. ἀλλ' ἐπειδη παντα ὅσα κατεσχε διεφθειρειν, ἐξαναλωθεν ἐπαυσατο.

A fire that began at night in some dwelling leaped to the temple of Pax and spread to the storehouses of Egyptian and Arabian wares, whence the flames, borne aloft, entered the palace and consumed very extensive portions of it, so that nearly all the State records were destroyed ... For the conflagration could not be extinguished by human power, though vast numbers both of civilians and soldiers carried water, and Commodus himself came in from the suburb and encouraged them. Only when it had destroyed everything on which it had laid hold did it spend its force and die out. (Cassius Dio 73.24.1-3)

οὔτε γαρ ὀμβρου προυπαρξαντος οὔτε νεφῶν ἀθροισθεντων, σεισμοῦ δε ὀλιγου προγενομενου γῆς, εἴτε σκηπτοῦ νυκτωρ κατενεχθεντος, εἴτε και πυρος ποθεν ἐκ τοῦ σεισμοῦ διαρρυνεντος, πᾶν το τῆς Εἰρηνης τεμενος κατεφλεχθη, μεγιστον και καλλιστον γενομενον τῶν ἐν τῆ πολει ἐργων. πλουσιωτατον δε ἦν παντων ἱερῶν, δι' ἀσφαλειαν ἀναθημασι κεκοσμημενον χρσοῦ τε και ἀργυρου· ἐκαστος δε, ἃ εἶχεν, ἐκεῖσε ἐθησαυριζετο. ἀλλα το πῦρ

ἐκείνης νυκτος πολλους ἐκ πλουσιων πενητας ἐποίησεν· ὅθεν ὠλοφυροντο κοινή μὲν παντες τα δημοσια, ἕκαστος δε ἴδια τα αὐτοῦ. καταφλεξαν δε το πῦρ τον τε νεων και παντα τον περιβολον, ἐπενεμηθη και τα πλείιστα τῆς πολεως και καλλιστα ἔργα· ὅτε και τῆς Ἑστιας τοῦ νεω καταφλεχθεντος ὑπο τοῦ πυρος γυμνωθεν ὠφθη το τῆς Παλλαδος ἀγαλμα ... κατεφλεχθη δε και ἄλλα πλείιστα τῆς πολεως μερη και καλλιστα, ἱκανῶν τε ἡμερῶν παντα ἐπιον το πῦρ ἐπεβοσκετο, οὐδε προτερον ἐπαυσατο, πριν ἢ κατενεχθεντες ὄμβροι ἐπεσχον αὐτοῦ την ὄρμην. ὅθεν και το πᾶν ἔργον ἐξεθειασθη πιστευοντων κατ' ἐκεῖνο καιροῦ τῶν τοτε ἀνθρωπων ὅτι γνωμη θεῶν και δυναμει ἤρξατο τε το πῦρ και ἐπαυσατο. συνεβαλλοντο δε τινες ἐκ τῶν καταλαβοντων, πολεμων σημεῖον εἶναι την τοῦ νεω τῆς Εἰρηνης ἀπωλειαν.

Without any warning of a rainstorm or clouds gathering, there was a small preliminary earth tremor; then either a flash of lightning occurred in the night, or a fire broke out somewhere as a result of the earthquake. Whatever the cause, the entire temple of Peace, the largest and most beautiful of all the buildings in the city, was burned to the ground. The temple was also the richest in Rome, since it was adorned with offerings of gold and silver that had been placed there because they were safe. Everyone used it as a deposit for his possessions. That night many rich were reduced to penury by the fire. Though everyone joined in deploring the destruction of public property, each person was thinking of his own private loss. After gutting the temple and its entire precincts, the fire spread to a major portion of the city, burning down some magnificent buildings. The temple of Vesta, too, went up in flames on this occasion, exposing the statue of Pallas to view ... Very many other fine parts of the city were destroyed as the fire raged for several days, consuming everything in its way, and was finally only stopped when the rain began to fall and checked the blaze. Thus the whole incident was regarded as supernatural, since people on that occasion were convinced that the fire had begun and was ended by divine will. (Herodian 1.14.2-6)

Incendio Romae facto palatium et aedes Vestae, plurimaeque urbis pars solo coaequatur.

After a fire had happened at Rome, the palace and temple of the Vestals, together with the larger part of the City, are levelled to the ground. (Jerome, *Chronicle*, 291f)⁶

⁶ This fire is dated by Jerome to AD 191, but it is unlikely that two such devastating fires would have occurred in the same general area within a year of each other and, as such, it is much more likely that this fire refers to that of AD 192.

38. AD 217

το τε θεατρον το κυνηγετικον κεραυνοῖς ἐν αὐτῇ τῇ τῶν Ἡφαιστιων ἡμερα βληθεν οὕτω κατεφλεχθη ὥστε την τε ἀνω περιβολην αὐτοῦ πᾶσαν και τα ἐν τῷ τοῦ κυκλου ἔδαφει παντα κατακαυθῆναι, κάκ τουτου τα λοιπα πυρωθεντα θραυσθῆναι. οὐδε ἐπαρκεσαι αὐτῷ οὔτε ἀνθρωπινη ἐπικουρια, καιπερ παντος ὡς εἰπεῖν ὕδατος ῥεοντος, οὐθ' ἡ τοῦ οὐρανιου ἐπιρροια πλειστη τε και σφοδροτατη γενομενη ἡδυνηθη· οὕτω που και το ὕδωρ ἑκατερον ὑπο τῆς τῶν σκηπτῶν δυναμεως ἀνηλισκετο, και ἐν μερει και αὐτο τοῦτο προσεσινετο, ὅθεν ἡ θεα τῶν μονομαχιῶν ἐν τῷ σταδιῳ ἐπι πολλα ἔτη ἐτελεσθη.

The hunting theatre was struck by thunderbolts on the very day of the Vulcanalia, and such a blaze followed that its entire upper circuit and everything in the arena was consumed, and thereupon the rest of the structure was ravaged by the flames and reduced to ruins. Neither human aid could avail against the conflagration, though practically every aqueduct was emptied, nor could the downpour from the sky, which was most heavy and violent, accomplish anything – to such an extent was the water from both sources consumed by the power of the thunderbolts, and, in fact, actually contributed in a measure to the damage done. In consequence of this disaster the gladiatorial show was held in the stadium for many years. (Cassius Dio 79.25.2-3)

Circensibus Vulcanaliorum Romae amphitheatrum incensum.

The amphitheatre at Rome burned down during the Vulcanalian Games. (Jerome, *Chronicle*, 296b)⁷

39. AD 222-229⁸

ζῶντος δ' οὖν ἐτι αὐτοῦ στασις μεγαλη τοῦ δημοῦ προς τους δορυφορους ἐκ βραχειας τινος αἰτίας ἐγενετο, ὥστε και ἐπι τρεῖς ἡμερας μαχεσθαι τε ἀλληλοις και πολλους ὑπ' ἀμφοτερων ἀπολεσθαι. ἡττωμενοι δε οἱ στρατιῶται προς ἐμπρησιν τῶν

⁷ This almost certainly refers to the fire of AD 217 despite Jerome listing it in the following year, as he mentions the Vulcanalia. Some doubt must remain, however, as he does not mention the lightning strike.

⁸ The account of this incident only survives in an epitome of book 80 and as such cannot be dated more precisely.

οἰκοδομημάτων ἐτραποντο· κάκ τουτου δεισας ὁ δῆμος μη και
πάσα ἡ πολις φθαρῆ, και ἀκων σθισι συνηλλαγη.

Even during his [the emperor Ulpius's] lifetime a great quarrel had arisen between the populace and the Praetorians, from some small cause, with the result that they fought together for three days and many lost their lives on both sides. The soldiers, on getting the worst of it, directed their efforts to setting fire to buildings; and so the populace, fearing the whole city would be destroyed, reluctantly came to terms with them. (Cassius Dio 80.2.3)

40. AD 232

Romae amphitheatrum incensum.

At Rome the amphitheatre burned down. (Jerome, *Chronicle*, 300f)

41. AD 238

ἐπει δε οἱ ὄχλοι ταῖς συσταδον μαχαις ἠττωμενοι, ἀναπηδῶντες
ἐς τα δωματια τῶ τε κεραμῶ βαλλοντες αὐτους και λιθων βολαῖς
τῶν τε ἀλλων ὄστρακων ἐλυμαινοντο, ἐπαναβῆναι μεν αὐτοῖς δι'
ἀγνοιαν τῶν οἰκησεων οὐκ ἐτολμησαν οἱ στρατιῶται,
κεκλεισμενων δε τῶν οἰκιῶν και τῶν ἐργαστηριων ταῖς θυραις,
και εἰ τινες ἦσαν ξυλων ἐξοχαι (πολλαι δε αὐται κατα την
πολιν), πῦρ προσετιθεσαν. ῥᾶστα δε δια πυκνοτητα τῶν
συνοικιῶν ξυλειας τε πλήθος ἐπαλληλον μεγιστον μερος τῆς
πολεως το πῦρ ἐνεμηθη.

Although the mob was no match for the soldiers in hand-to-hand fighting, they swarmed up into the upper rooms of houses and caused casualties among the soldiers by showering them with tiles and a hail of stones and broken pots. The soldiers did not dare climb up after the people because of their unfamiliarity with the houses, and the doors of the houses and shops were closed. So they set fire to the wooden balconies of such houses that possessed them (of which there were a lot in the city). Because the buildings adjoined each other very closely, and a great number of them in a row were made of wood, the fire very easily burned down most of the city. (Herodian 7.12.5-6)



42. AD 247

Theatrum Pompeii incensum, et Hecatonstylon.

The theatre of Pompey and the Hecatonstylon burned down. (Jerome, *Chronicle*, 299e)

43. AD 283

Nam et neurobaten, qui velut in ventis cothurnatus ferretur, exhibuit, et toichobaten, qui per parietem urso eluso cucurrit, et ursos mimum agentes et item centum salpistas uno crepitu concinentes et centum cerataulas, choraulas centum, etiam pythaulas centum, pantomimos et gymnicos mille, pegma praeterea, cuius flammis scaena conflagavit.

For there was exhibited a rope-walker, who in his buskins seemed to be walking on the winds, also a wall-climber, who, eluding a bear, ran up a wall, also some bears which acted a farce, and, besides, one hundred trumpeters who blew one single blast together, one hundred horn-blowers, one hundred flute-players, also one hundred flute-players who accompanied songs, one thousand pantomimists and gymnasts, moreover, a mechanical scaffold, which, however, burst into flames and burned up the stage. (*Historia Augusta, Carus, Carinus and Numerian*, 19.2)⁹

his imper. fames magna fuit et operae publicae arserunt senatum, forum Caesaris, basilicam Iuliam, et Graecostadium.

While they were ruling there was a great famine and public buildings burned down: the senate, the forum of Caesar, the basilica Julia, and the Graecostadium. (*Chronography of AD 354* f 65')

44. AD 363

Verum ut compertum est postea, hac eadem nocte Palatini Apollinis templum, praefecturam regente Aproniano, in urbe conflagavit aeterna, ubi ni multiplex iuvisset auxilium, etiam Cumana carmina consumpserat magnitudo flammaram.

⁹ There is nothing specific in the account in *HA* to connect it with the fire of AD 283. It is possible that it is connected to the fire in that year, that this is a completely separate fire, or that the author of *HA* invented the entire episode. It is included here principally due to the shortness of Carus' reign (AD 282-283).

But, as was afterwards learned, it was on that same night that the temple of the Palatine Apollo, under the prefecture of Apronianus, was burned in the eternal city; and if it had not been for the employment of every possible help, the Cumaean books also would have been destroyed by the raging flames. (Ammianus Marcellinus 23.3.2)

45. After AD 365¹⁰

Qui consumptis aliquot annis, domum eius in Transtiberino tractu pulcherrimam incenderunt.

For after some years had passed [since Symmachus' time as *praefectus urbi*], they set fire to Symmachus' beautiful house in the Transtiberine district. (Ammianus Marcellinus 27.3.4)

46. AD 410

Romam quippe partam veterum auctamque laboribus foediorem stantem fecerant quam ruentem, quando quidem in ruina eius lapides et ligna, in istorum autem vita omnia non murorum, sed morum munimenta atque ornamenta ceciderunt, cum funestioribus eorum corda cupiditatibus quam ignibus tecta illius urbis arderent.

Truly they had made the name of Rome, that Rome that was conceived and nourished by the pains of their elders, sink lower while she stood than ever it sank when she fell, forasmuch as in her fall were overturned but stones and timbers, while in their way of living were overturned all the ramparts and splendours, not of mural, but of moral strength. Deadlier were the lusts that raged in their hearts than the flames that raged in their city's edifices. (Augustine, *City of God*, 2.2)

Tertia die barbari quam ingressi urbem fuerant sponte discedunt, facto quidem aliquantarum aedium incendio sed ne tanto quidem quantum septingentesimo conditionis eius anno casus effecerat. Nam si exhibitam Neronis imperatoris sui spectaculis inflammationem recenseam, procul dubio nulla comparatione aequiperabitur secundum id, quod excitauerat lasciuia principis, hoc, quod nunc intulit ira uictoris. Neque uero Gallorum meminisse in huiusmodi conlotione debeo, qui continuo paene anni spatio incensae euersaeque urbis adtritros cineres possederunt. Et ne quisquam forte dubitaret ad correptionem superbae lasciuiae et blasphemae ciuitatis hostibus fuisse permissum, eodem

¹⁰ This fire is not accurately dated by Ammianus and, as such, we can be no more specific than after AD 365.

tempore clarissima urbis loca fulminibus diruta sunt, quae inflammari ab hostibus nequiuerunt.

The third day after they had entered the City, the barbarians departed of their own accord. They had, it is true, burned a certain number of buildings, but even this fire was not so great as that which had been caused by accident in the seven hundredth year of Rome [50 BC]. Indeed, if I review the conflagration produced during the spectacles of Nero, her own emperor, this later fire, brought on by the anger of the conqueror, will surely bear no comparison with the former, which was kindled by the wantonness of the prince. Nor do I need in a comparison of this sort to mention the Gauls, who, after burning and sacking the City, camped upon her ashes for almost an entire year. Moreover, to remove all doubt that the enemy were permitted to act in this manner in order to chastise the proud, wanton, and blasphemous City, it may be pointed out that her most magnificent sites, which the Goths were unable to set on fire, were destroyed at this time by lightning. (Orosius 7.39)

οἱ δὲ τὰς τε οἰκίας ἐνεπρήσαν αἰ τῆς πυλῆς ἀγχιιστα ἦσαν, ἐν αἷς ἦν καὶ ἡ Σαλουστιοῦ, τοῦ Ῥωμαίου το παλαιὸν τὴν ἱστορίαν γραψάντος, ἥς δὴ τὰ πλεῖστα ἡμικαυτὰ καὶ ἐς ἔμε ἐστήκε.

And they [the Visigoths] set fire to the houses which were next to the gate, among which was also the house of Sallust, who in ancient times wrote the history of the Romans, and the greater part of this house has stood half-burned up to my time. (Procopius, *Wars*, 3.2.24)

Appendix 2

Inscriptions

1. AE 1995, 175

*Aemilius Alcimus / princeps peregr(inorum) / simulacrum Silvani / addito
pronaos / incendio consumptum / restituit*

2. CIL 6.526

*Simulacrum Miner<v=B>ae / abolendo incendio / tumultus civilis igni / tecto
cadente confractum / Anicius Acilius Aginatus / Faustus v(ir) c(larissimus) et
inl(ustris) praef(ectus) urbi / vic(e) sac(ra) iud(icans) in melius / integro proviso
pro / beatitudine temporis restituit*

3. CIL 6.826

*Haec area intra hanc / definitionem cipporum / clausa veribus et ara quae / est
inferius dedicata est ab / [[[Imp(eratore) Caesare Domitiano Aug(usto)]]] /
[[[Germanico]]] ex voto suscepto / quod diu erat neglectum nec / redditum
incendiorum / arcendorum causa / quando urbs per novem dies / arsit
Neronianis temporibus / hac lege dedicata est ne cui / liceat intra hos terminos /
aedificium exstruere manere / negotiari arborem ponere / aliudve quid serere /
et ut praetor cui haec regio / sorti obvenerit litaturum se sciat / aliusve quis
magistratus / Volcanalibus X K(alendas) Septembres / omnibus annis vitulo
robio / et verre // Haec area intra hancce / definitionem cipporum / clausa
veribus et ara quae / est inferius dedicata est ab / Imp(eratore) Caesare
Domitiano Aug(usto) / Germanico ex voto suscepto / quod diu erat neglectum
nec / redditum incendiorum / arcendorum causa / quando urbs per novem dies /
arsit Neronianis temporibus / hac lege dedicata est ne cui / liceat intra hos
terminos / aedificium exstruere manere / nego<t=C>iari arborem ponere /
aliudve quid serere / et ut praetor cui haec regio / sorti obvenerit sacrum faciat
/ aliusve quis magistratus / Volcanalibus X K(alendas) Septembres / omnibus
annis vitulo robeo / et verre <f=R>ac(tis) precationibus / infra script<is=AM>
aedi[3] K(alendas) Sept(embres) / ianist[3] / [3] dari [3]quaes[3] / quod*

imp(erator) Caesar Domitianus / Aug(ustus) Germanicus pont(ifex) max(imus) / constituit Q[3] / fieri // ex voto suscepto / quod diu erat neglectum nec / redditum incendiorum / arcendorum causa / quando urbs per novem dies / arsit Neronianis temporibus / hac lege dedicata est ne cui / liceat intra hos terminos / aedificium exstruere manere / negotiari arborem ponere / aliudve quid serere / et ut praetor cui haec regio / sorti obvenerit litaturum se sciat / aliusve quis magistratus / Volcanalibus X K(alendas) Septembres / omnibus annis vitulo robio / et verre

4. CIL 6.937

Senatus populusque Romanus / incendio consumptum restituit

5. CIL 6.1034

Imp(erator) Caes(ar) L(ucius) Septimius Severus Pius Pertinax Aug(ustus) Arabic(us) Adiabenic(us) Parthic(us) maximus / [3] trib(unicia) potest(ate) XI imp(erator) XI co(n)s(ul) III p(ater) p(atriciae) et / [Imp(erator) Caes(ar) M(arcus) Aureliu]s Antoninus Pius Felix Aug(ustus) trib(unicia) pot(estate) VI co(n)s(ul) proco(n)s(ul) / [3] incendio corruptam restituerunt

6. CIL 6.1136

D(omina) n(ostra) He[lena venerabilis do]mini [n(ostri) Constantini A]ug(usti) / mater e[t] avia beatissimor(um) et florentissimor(um)] / [Caesarum nostr]oru[m] therm[as incendio] / [de]stru[ctas restituit]

7. CIL 6.30423

ince]ndio fata[li 3] / [3]tis VSV[

8. CIL 6.40339

]O[3] / [3]S[3] // [3]NI[3] / [3]AV[3] // [3]MP[3] // [3]T O[3] // [3]R[3] // [3]EF // [Ti(berius)] C[aesar Augusti f(ilius) divi n(epos) Claudianus] / [co(n)]s(ul) [iter(um) imp(erator) ter tribunic(ia) pot(estate) VII pontif(ex)] // [Nero Claudius Ti(beri) f(ilius) Drusus Germa]ni[us] / [Augusti privignus

*co(n)s(ul) i]mp(erator) [iter(um)] au]gur] // [Aedem Pollucis e]t C[asto]r[is
incendio consumptam de manubiis r]ef(ecerunt)*

9. CIL 6.40417

*[Ti(berius) Claudius Drusi f(ilius) Ca]isar A[ugustus Germ]anic[us pontif(ex)
m]axim(us) / [tribunicia potes]tate X[IV(?) imp(erator) XXVII(?) co(n)s(ul)] V
p[ater patriai cens(or?)] / [aedem(?) 3 i]ncend[io consumptam(?)] de sua
pe[cunia restituendam cur]avit*

10. CIL 6.40456

*[Imp(erator) Caesa]r divi [Vespasia]ni f(ilius) D[omitianus Augustus] /
[pont(ifex) m]ax(imus) tri[bunic(ia) pot]est(ate) [3] / [pater pa]triae A[3]O
i]ncendi]o(?) / [a]mpli[avit pecu]nia(?) [*

11. CIL 6.40470

*[Ti(berius) Claudius Drusi f(ilius) Ca]isar A[ugustus Germ]anic[us pontifex
maximus] / [tribunicia potes]tate X[IV(?) imp(erator) XXVII(?) co(n)s(ul)] V
p[ater patriai] / [aedem(?) 3 i]ncend[io consumptam(?) a solo] de sua pe[cunia
restituendam curavit]*

12. CIL 6.40521

*Im[p(erator)] Caesar D[ivi Traiani Parthici f(ilius)] / D[ivi Ne]rvae nepo[s
Traianus Hadrianus Aug(ustus)] / [pontife]x maximus [trib(unicia) potest(ate)
3] / has aedes incendio [3] / Gaius Marcus Publiu[s 3] / et i[n]cendio vexat[as
3]*