

# The plague pandemic and Slavic expansion in the 6<sup>th</sup>–8<sup>th</sup> centuries

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The plague pandemic in 541–543 and successive outbreaks of the disease till the latter half of the 8<sup>th</sup> century caused a deep demographic crisis in the Eastern Roman Empire. The most important effects of the plague were a shortage of manpower and a growing importance of marginal barbarian populations, which had suffered less or not at all from the disease. Demographic, political and economic consequences of the pandemic likely caused or at least facilitated Slavic expansion in the Balkans between the 6<sup>th</sup> and 8<sup>th</sup> century. The Slavs began to raid intensively and then settle the European provinces of the Roman Empire soon after the first outbreak of the plague and available textual evidence suggests that this region was depopulated by the disease and neglected by the government. During the 7<sup>th</sup> century, the Empire's administration and economy collapsed due to the effects of the plague and the existing system of land taxation and central provisioning of professional armies must have been replaced by regional organization of territorial troops recruited from free peasant farmers. In the new circumstances, the Slavs, who had in the meantime re-populated the Balkans, constituted an abundant source of manpower for a restored Empire.

KEY-WORDS: historical demography, bubonic plague, Eastern Roman Empire, Slavs, Balkans

## INTRODUCTION

In the 530s, the Eastern Empire ruled by Justinian the Great was at the height of its power. In 533, Justinian's general Belisarius with a small army easily conquered the kingdom of the Vandals in North Africa. In the next few years, the Ostrogoths in Italy were also almost completely defeated by the Romans, and the emperor extended his rule over part of Visigoth Spain. In effect, Justinian was well on the way to fulfilling the dream of his predecessors: overcoming the Germanic invaders in the West and reuniting the two parts of the Roman Empire.

Yet his plans collapsed entirely. In the 540s, Persian attacks in Syria, Ostrogoth resistance in Italy and eventually raiding Transdanubian barbarians in the Balkans interrupted Roman expansion, turning the recent successes into trouble. In the latter

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part of Justinian's reign, the Empire was still capable of dealing with at least some of the problems, but after his death the state entered a phase of evident collapse and with the murder of Maurice by his revolted troops in 602 the real Dark Ages had begun (*cf.* Maas 2005: 7). During the first half of the 7<sup>th</sup> century, the Empire lost about two-thirds of its territory, everything except Anatolia, part of Thrace, some regions of Greece and several cities and enclaves scattered over the shores of the Mediterranean Sea (*cf.* Teall 1959: 89). When it started to rise again at the close of the 9<sup>th</sup> century, it was no more the Eastern Roman Empire. It had become a Byzantine state.

What caused this unexpected fall? This is possibly one of the most discussed questions in the history of Byzantine studies. Many authors have argued that the military activity of Justinian in the West exhausted the treasury, wasted a lot of manpower and eventually made the Empire vulnerable to new barbarian tribes activated by the wars (*cf.* Fine 1983: 22–3; Sarris 2002: 47; Haldon 2005: 55; Pohl 2005: 472). Others, however, have pointed at the pandemic of the bubonic plague, which spread to all parts of the Eastern Empire and in the West after 541/2, as at least one of the important factors which contributed to the crisis. Opinions range from the sceptical view that the plague caused a temporal dislocation but its long-term impact was problematic (Lee 2005: 118; *cf.* Horden 2005: 154), through the conviction that the plague triggered a demographic crisis that was deepened by the wars, raids and famines that followed (Lopez 1959: 70), to the very enthusiastic (although not well grounded) belief that the plague actually caused the fall of the ancient world (Maugh 2002).

As early as in the late 1960s, the historical demographer Josiah Russell (1968: 178) argued that in the last pre-plague years the Eastern Empire was in very good condition, morale was excellent, money was abundant, and manpower was sufficient. Only after the first outbreak of the plague did the spiral of crisis begin, the Empire eventually losing most of its territory to the pastoral Arabs who inhabited dry regions spared by the disease. The caliphs exploited this opportunity and took control over the East (Russell 1965: 99, 1968: 182–3). This connection between the plague and the expansion of Islam has been more or less critically maintained by some later authors (*cf.* Horden 2005: 138; Donner 2005: 519).

There were also other invaders, the Slavs, who made heavy inroads into the territory of the Eastern Empire. Their intensive expansion in the Balkans begun shortly after the critical years 541/2 and by the middle of the 7<sup>th</sup> century they had come in possession of almost all the former European territories of the Empire with the exception of Thrace, the eastern part of Greece, and some islands and strongholds on the seashores. Slavic invasion has been attributed to Justinian's negligence on the northern frontier (Fine 1983: 23), agricultural over-taxation which destroyed the rural economy in the Balkans (*cf.* Pohl 2005: 469), or the massive migration from the north and northeast which, connected with assimilation of local peoples, caused strong population growth (*cf.* Kurnatowska 1977: 55). The plague pandemic has been

neglected as a possible factor causing or at least facilitating Slavic expansion, by analogy to the Islamic conquests in the East.

Yet the temporal co-incidence of the plague pandemic and first Slavic raids in the Balkans does not seem to be pure chance. It may be hypothesised that the process of Islamic expansion as a result of the plague pandemic is valid also in the case of the Slavs who were a similarly marginal population expanding far beyond its original areas over a short period of time. Fortunately, the research on the plague, its epidemiology and history of outbreaks is sufficiently developed to offer a general model of impact of the disease on human populations. Such a model, confronted with the social, political, and economic milieu of the late Eastern Roman Empire, may be used for testing the hypothesis that the Slavic expansion in the Balkans and other regions south of Danube (including Asia Minor) was an indirect consequence of the plague.

#### FIRST PLAGUE PANDEMIC

The history of the Early Medieval plague pandemic is reconstructed almost exclusively from short notices in the chronicles. Only a few authors (Procopius, *Wars*: 2.22, Gregory of Tours 6.8) described the symptoms of the disease, which has been identified by modern scholars as the bubonic plague caused by the *Yersinia pestis* bacillus. Before 2004 some historians denied this identification (Cohn 2003: 248; cf. Horden 2005: 149), but the discovery of the DNA of *Y. pestis* in skeletons from two independent locations dated to the 6<sup>th</sup> century (Sens in France and Aschheim in Bavaria) confirmed the prevailing opinion (Drancourt *et al.* 2004; Wiechmann and Grupe 2005; cf. Raoult *et al.* 2000).

The most detailed description of the plague pandemic in 541–542 was written in *History of the wars* by Procopius (2.22–33) who observed that the disease first struck in Pelusium (eastern Egypt) and then moved to other regions of the Empire following maritime and land communication routes. Procopius' account is very dramatic, the author stating that "the whole human race came near to being annihilated", "[the calamity] embraced the entire world, and blighted the lives of all men". The daily death rates in Constantinople were higher than ten thousand, burial rites were overlooked and the corpses of plague victims were piled up in towers. All kinds of normal activity were suspended, the grain supply from Egypt temporarily interrupted and soon famine furthered the effect of the disease. Even the emperor became ill, but fortunately recovered. Equally thrilling descriptions were left by other contemporary authors, like John of Ephesus (227.25–240.30), later chronographers, like Michael the Syrian (9.28) but especially by Evagrius Scholasticus (4.29) who lived through a bout of the disease and lost his children and a grandson during successive outbreaks of the plague.

The plague was present also in Persia in the East and moved to the West, ravaging Gaul (Gregory of Tours 4.5) and eventually reaching Ireland in 544 (Maddicott 1997: 10). In the Eastern Empire, the plague died out in late 542 and on 23 March 543 Justinian issued an edict declaring that the calamity was over and wages should be restored to their pre-plague levels (Horden 2005: 138). This declaration was, however, too optimistic, because the plague returned repeatedly in cycles of about 9–11 years (Freney and Hansen 1998: 87; Horden 2005: 138). Successive outbreaks are mentioned by the chroniclers in much more general terms and for sure many of them were never described by any author. It is likely, however, that were usually of local character and for this reason mortality was lower than during the first attack. The actual number of plague visitations in various regions is difficult to ascertain. In Constantinople, at least eight outbreaks were observed between 556 and 622 (Russell 1968: 179) and at least four between 698 and 747/748. Especially the last outbreak caused very high mortality and the city must have been re-populated (*cf.* Treadgold 2002: 149). Early Arabic sources noticed as many as thirteen outbreaks (Dols 1974). Detailed synopsis of historical sources mentioning the plague outbreaks has been published by Dionysios Stathakopoulos (2004). According to known sources, the plague disappeared from the basin of the Mediterranean Sea after 767 (Biraben and Le Goff 1969: 1493; Treadgold 2002: 149).

The visitation of the plague in the 6<sup>th</sup>–8<sup>th</sup> centuries was the first known pandemic of this disease. Some authors claim that the “Plague of the Philistines” (1 Samuel 4–6), the “Plague of Athens” described by Thucydides and the “Plague of the Antonines” which ravaged the Roman Empire after 166 (Potter 1990: 7) were early outbreaks of the bubonic plague (*cf.* Freney and Hansen 1998: 84). There are also medical treatises by Rufus of Ephesus (2<sup>nd</sup> century BC) and Oribase (4<sup>th</sup> century AD) which contain clear enough descriptions of this disease, but without any mention of an epidemic. It may be concluded then that the bubonic plague was present before the times of Justinian, especially in North Africa and the Near East, but never spread in the form of a pandemic (Benedictow 2004: 35–9).

After the “Plague of Justinian” two more pandemics occurred in the world: the famous “Black Death” which ravaged almost all of Europe in 1347–1351 and returned in successive outbreaks until the beginning of the 18<sup>th</sup> century, and the “Bombay Plague” which was first noticed in Canton in 1896 and killed about 12,600,000 inhabitants of India between 1898 and 1948 (Appleby 1980: 169). These second and third pandemics are very important for research on the effects of the first one, because contemporary sources are much more eloquent than Early Medieval chronicles. The “Black Death” can be used in modelling the demographic consequences of plague in preindustrial societies with poorly developed medicine, and the modern medical studies on the “Bombay Plague” provide us with a reliable epidemiological model of the disease. Genetic research suggests that different biovars of *Y. pestis* (called *Antiqua*, *Medievalis*

and *Orientalis*) were responsible for each of the three pandemics (Zhou *et al.* 2004), but they were equally virulent and there are no differences in the epidemiological parameters between them.

#### EPIDEMIOLOGY OF THE PLAGUE

In general, the plague is a disease of rodents (including the black rat) transmitted by men. However, this fact was not known before the medical research on the third pandemic in the early 20<sup>th</sup> century. Medieval authors did not associate the plague with rats and, like Isidore of Seville (4.6.17), used to explain it by corrupt air, for example.

There are many places in the world called plague foci, where the disease occurs in its enzootic form. The most important modern plague foci are located in Central Asia, India and China, as well as in Central and South Africa and Kurdistan. Evagrius localized the original source of the first pandemic in Ethiopia (Evagrius Scholasticus: 4.29) and also Arabic writers observed endemic plague in Sudan and Ethiopia throughout the Middle Ages (Dols 1977: 14–5). In this respect, the first pandemic differed from the others which originated in Central or Eastern Asia. As a rule, *Y. pestis* infects only rodents living in the area of a plague focus, for example gerbils in Central Asia (*cf.* Davis *et al.* 2004). The bacillus is transmitted from one animal to another by a flea which feeds on its blood, especially *Xenopsylla cheopis*. In some cases (24 to 38% in clinical research), the microbes multiply in the insect's foregut and after 3–9 days obstruct it completely, so a starving flea cannot consume any more blood and regurgitates it together with thousands of bacilli into its new victim (Freney and Hansen 1998: 101; Benedictow 2004: 14–6; *cf.* Hinnebusch *et al.* 1996, 2004). Many rodents may thus be infected by a single flea desperately trying to appease its hunger.

In the area of plague focus, rodents and bacilli maintain long-term equilibrium due to immunization of a greater part of the hosts. It will happen, however, that infected rodents migrate to new territories and the plague spreads in new populations of animals, which are not immune to the disease. Enzootic then turns into epizootic. It may then become an epidemic assuming there is a species of rodents living close to men, such as the black rat (*Rattus rattus*) in Europe or the grass rat (*Arvicanthis niloticus*) in North Africa (McCormick 2003: 1). When in the course of an epizootic the number of living rodents falls dramatically, fleas are unable to find new hosts and move to other mammals, including men. Under normal conditions they do not feed on men, but it is likely that the infection by the plague bacillus changes their thermal preference (Freney and Hansen 1998: 101). In effect, the epizootic of rats becomes the epidemic of men. Since men are much more mobile than black rats, they easily transport infected fleas to new areas and, if there is nothing to stop the process, the epidemic turns into panzootic and pandemic.

After the first wave of the plague pandemic, some infected rats remain in the area and are responsible for successive outbreaks occurring with greater or lesser regularity (Keeling and Gilligan 2000). Since the plague is originally a disease of rodents, humans have no natural immunity to it (Cohn 2002) and also the immunity acquired by survivors is weak and at best temporal (Benedictow 2004: 262). The theory that the CCR5.32 allele in humans inhabiting northern Europe provides protection against the plague has proved to be false (Mecses *et al.* 2004). Consequently, the cycle of plague outbreaks in human populations may be terminated only if all the infected rats die out (McCormick 2003: 22) or if they acquire such a level of immunity that the disease does not turn into an epizootic form (Appleby 1980: 169–71).

Some researchers have argued that the plague may be transmitted also directly from human to human by human fleas, *Pulex irritans* (Baltazard 1959; Kelly 2005: 35–6). However, it was observed during the third pandemic that the average amount of plague bacilli in human blood is 500–1000 times lower than in rats and it makes this way of transmission improbable, although still possible in singular cases (Benedictow 1987: 430, 2004: 14). Inter-human transmission by coughing may be more effective. The plague is observed in three forms: bubonic, pneumonic and bacteraemic. The bubonic form is most frequent and less lethal, because the expansion of plague bacilli is stopped in the lymph nodes which turn into characteristic buboes. In the bacteraemic form, *Y. pestis* breaks into the bloodstream and causes sudden and inevitable death. Also the pneumonic form is lethal almost in 100% of cases: the bacilli multiply in the lungs and are expectorated by the infected person, potentially infecting anyone too close (Benedictow 2004: 25–9). Controversy still exists as to whether the pneumonic form was an important factor in the spread of the plague during the first two pandemics. Ole Benedictow (2004: 27) argued that it killed its victims too fast to be effective in the transmission of the bacilli, but the case of Iceland where the plague epidemic occurred in an area without rats indicates that in some circumstances the pneumonic form may be prevalent (Karlsson 1996).

A plague pandemic is possible only in areas with large populations of rats where a developed network of human communication exists. It is likely that the black rat colonized Europe quite recently, during the high years of the Roman Empire (Benedictow 2004: 22). This species of animal is not mobile and usually does not move by more than 200 m during its lifetime (McCormick 2003). However, rats readily live in ships, making their expansion – and the spread of the plague between harbours and along navigable rivers – much more effective. In the interior, however, the progress of the disease is conditioned only by the mobility of humans (*cf.* Benedictow 2004: 227).

When infected fleas come to an area not affected by the plague, after the epizootic phase lasting 10–14 days the insects cannot find new hosts and after another three or four days become desperate and start trying to feed on humans. During the following week the infection develops into a disease and thus the period between the first

infection of a rat to the first deaths of humans lasts three-four weeks (Benedictow 2004: 18). The average speed at which the plague spread during the “Black Death” was 40 km per day in case of maritime transport, but no more than 2 km per day along main land routes and less than 1 km per day by local roads (Benedictow 2004: 229). During the first pandemic, the rapid expansion of the plague was facilitated by the absolute domination of maritime transport in the Eastern Empire and the fact that a greater part of the population lived near the shores of the Mediterranean Sea or along the great navigable rivers (*cf.* Freney and Hansen 1998: 88).

One of the most discussed topics related to plague epidemiology is the possible relation of the pandemic to climatic changes (*cf.* Kelly 2005: 37–43). Instability of the environment is sometimes thought to be a factor forcing wild rodents to leave a plague focus in search of food. The link between earthquakes and the outbreak of plague was actually observed in India in 1993: the natural disaster disrupted food storage and the population of rats significantly increased. The next year population pressure forced some of the rodents to migrate. The same effect may be observed in a dry period following immediately upon several years of increased precipitation (McCormick 2003: 19–20). The connection between a series of severe earthquakes in Syria and the plague was noticed by Procopius (*The secret history*: 18), but it may be pure coincidence.

Some authors have pointed to the volcanic eruption of 536/7 as the direct cause of the first plague pandemic (Baillie 1991; Stothers 1999; *cf.* Stothers 2000; Horden 2005: 152–3), but their argument based on a superficial reading of selected chronicles and manipulated Greenland ice-core datings is still unconvincing. It is true, however, that in the 6<sup>th</sup> century many regions suffered from earthquakes and tree-rings point to possible climatic fluctuations in the period just before the pandemic.

#### DEMOGRAPHIC, SOCIAL, AND ECONOMIC EFFECTS OF THE PLAGUE

The effects of the plague may be considered in their physical and psychological aspects. The primary effect is the death of a given individual, whether of the Pope Pelagius or of Evagrius’ grandson, both of whom died during the outbreak of the plague in 590. The sum of individual deaths contributes to the secondary demographic effect which in turn causes ternary effects – economic, political, social, *etc.* (see Table 1). The most important parameter, which unfortunately cannot be directly estimated from Early Medieval sources, is the mortality rate due to the plague. It may be estimated only by analogy with the much better documented “Black Death”, although there is always a danger that the two plague pandemics may have differed in this respect from one another.

So far, two distinctly different estimates of plague mortality have been proposed. Some authors believe that mortality during the first outbreak was quite low: 20–25%

(Russell 1968: 180), 20–30% (Horden 2005: 154) or one-third (Sarris 2002: 49), less than the most frequently quoted estimates for the “Black Death” which amount to 30–40% (Waldron 2001: 108; Kelly 2005: 11). However, a recent detailed analysis of various sources by Ole Benedictow (2004: 383) has shown that the average mortality rate during the “Black Death” was about 60% and that this rate was surprisingly similar in various regions of Western Europe. Also some earlier authors estimated the mortality rate during the “Plague of Justinian” as being 50–60% (Freny and Hansen 1998: 88). In spite of the scepticism of some authors (*e.g.*, Durand 1977: 272), dramatic reports by witnesses suggest that the higher estimate is more likely, although no direct evidence is available.

Successive outbreaks of the plague deepened population decline. It is likely that the mortality rate gradually decreased, although again the evidence from the times of

Table 1. Classification of the effects of the plague.

Classification of effects			Effects	Evidence
Physical	Primary	Individual	disease and death of a given individual ( <i>e.g.</i> , Pope Pelagius)	textual and paleogenetical evidence
	Secondary	Demographic	decline in population size	textual and archaeological evidence ( <i>e.g.</i> , settlement patterns)
			change of population structure	textual and paleodemographic evidence (increase of fertility, more children)
	Ternary	Economic	<b>less manpower, especially in the more developed economies</b>	textual and archaeological evidence ( <i>e.g.</i> , decline of large estates)
			possible decline in trade	textual and archaeological evidence ( <i>e.g.</i> , distribution of coins and luxury goods)
		Political	<b>relative growth of power of marginal populations (esp. pastoralists)</b>	textual evidence (incl. information about the size of troops)
	<b>deportation policy due to manpower shortage</b>		textual and archaeological evidence ( <i>e.g.</i> , settlement patterns)	
Psychological	Ternary	Social	disturbance in burial rites	textual and archaeological evidence
			<b>decomposition of social relations</b>	textual evidence ( <i>e.g.</i> , militarization of society)
		Religious	theological interpretation	textual evidence ( <i>e.g.</i> , cases of apostasy)
			search for protection in magic	textual (spells) and archaeological (amulets) evidence



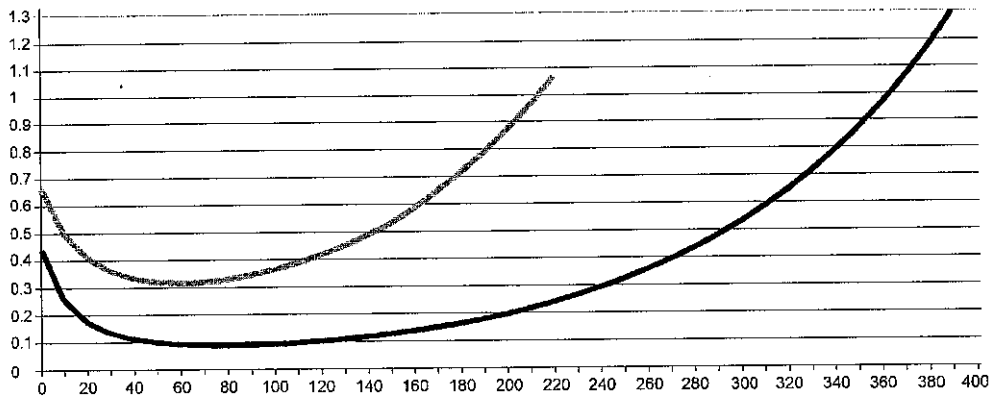


Fig. 1. Two models of demographic effects of the plague. Black line (pessimistic model): annual growth between plague outbreaks by 1% per year, mortality during first outbreak by 60%, gradual relative decrease of mortality by 20% in successive outbreaks, 20 outbreaks in 10-year cycles. Grey line (optimistic model): annual growth between plague outbreaks by 1% per year, mortality during first outbreak by 40%, gradual relative decrease of mortality by 30% in successive outbreaks, 15 outbreaks in 10-year cycles.

the second pandemic suggests that for many years the plague was the most important cause of death. Between 1349 and 1517, one of three monks in the Abbey of Canterbury died of plague; in 1578–1582, the frequency of death by the plague in London was as high as 40% (Saltmarsh 1941: 37, 39) and the mortality rate at Penrith in 1598 amounted to 35% (Appleby 1980: 162). The mortality rate during the second outbreak in Iceland (1494/5) was as high as 30–50% (Karlsson 1996: 265) and even the last outbreak of the plague in Provence in 1720/22 was very serious with a mortality rate of 44% (Benedictow 1987: 410). Even taking into account the fact that successive outbreaks are local and regional rather than universal, these figures are impressive.

Using available data, it is possible to formulate two theoretical models of changes in population size after the outbreak of the plague pandemic. In a pessimistic model, the initial mortality rate is 60% and it slowly decreases during the following outbreaks. In the optimistic model, the initial mortality rate is 40%, it falls faster and the number of outbreaks is smaller (Fig. 1). The average population growth in the years between plague outbreaks is fixed at 1%, which would be unrealistic for a stable population, but one of the effects of the plague (and other disasters causing rapid and deep depopulation) is the increase of fertility, chiefly for economic reasons (Karlsson 1996: 273; Benedictow 2004: 271; Kelly 2005: 281). The models differ in the details, but it is clear that even in the optimistic model, population size decreases by almost 70% within 50 years. Another interesting pattern of demographic trends is noted during a plague pandemic. In the first period, lasting about 50 years in both models, the population size declines rapidly. Later, mortality due to the disease is compensated by increased fertility and eventually, after shorter or longer stagnation, the population starts to grow.

The plague is very lethal (80% in bubonic form, 100% in pneumonic and bacteraemic form), its morbidity rate is high (Benedictow 1987), and no permanent immunity may be gained. For that reason an uniform pattern of mortality is usually assumed (*cf.* Benedictow 2004: 262). However, some important biases may be observed in the case of both the Medieval pandemics. Some sources suggest a higher mortality of women during the “Black Death” (Benedictow 2004: 266–7), although the opposite tendency was also observed (Cohn 2003: 130, 211). Agathias (5.107) noticed that more men than women died in the “Plague of Justinian” (Russell 1968: 180), but again one of the outbreaks mentioned by the Arabic sources was called the “Plague of the Maidens” (Dols 1974: 379). It may be concluded then that the differences in mortality between men and women were likely related only to local circumstances.

Historical sources have reported, this time in one voice, that the second outbreak was characterized by a much higher mortality among children (Cohn 2003: 212; Kelly 2005: 278). The outbreak of 1361 was called the “children’s plague”, and eight centuries earlier Agathias and Theophanes also observed such a bias during the second outbreak of the first pandemic (Russell 1968: 180). This peculiarity is sometimes explained as proof that survivors may have kept at least some immunity (Teall 1971: 44; Margerison and Knüsel 2002: 135) or that the pandemic was not caused by *Y. pestis* (Cohn 2003: 212–6). However, the most likely explanation is that there was actually no bias of any kind, and that the situation simply reflected the higher fertility after the first outbreak (*cf.* Maddicott 1997: 46).

Social position and occupation were also a factor which differentiated the mortality rate, at least during the second pandemic. In Uelzen, only 12% of blacksmiths and more than 80% of bakers and butchers died of the plague, and it was clearly related to the presence of rats which preferred to live in proximity to food and far from the noise of ironworks (Benedictow 1987: 425; McCormick 2003: 18). The average mortality among the poor was up by 5% and lower by more than 10% among household owners compared to the general population (Benedictow 2004: 266, 270). This difference could be explained not only by the greater exposition of the poor to attack by rat fleas, but also by the famine which accompanied the temporal decline of economy during the pandemic and affected chiefly the lower classes of society and children who had lost their relatives (Benedictow 2004: 263). The most important difference is perhaps that in the mortality rate between towns and villages. Many authors have assumed that the towns suffered more from the plague due the higher concentration of human populations (Lee 2005: 118; Donner 2005: 519). However, during the second pandemic, the average mortality in villages, as noted in the sources, was higher than in the towns. It is not surprising, considering that the disease is one of rats and the density of these animals is more important for the spread of the bacilli than the density of humans. Although the absolute number of rats in villages is smaller, but more rats live in an average household and it makes the infection of a human host more probable (Benedictow 1987: 419–22, 2004: 32–3).

In economic terms, the most important effect of the plague was the shortage of manpower. Before the second plague pandemic, Western Europe was densely populated and landlords had no trouble finding workers. Consequently, wages were low compared to prices and the lowest classes of society were hard put to make a living. The first outbreak of the plague changed the situation dramatically: deserted households could now be taken over by poor labourers and suddenly the surplus of manpower turned into a surplus of free land. The successive outbreaks deepened this trend and wages grew considerably in effect, prices dropped and the distance between the poor and the rich diminished. This sharp rise in the value of manpower has often been related with the end of feudalism (Saltmarsh 1941; Benedictow 2004: 261, 388–91). The shift may be seen also in the frequency of palaeopathologies: degenerative changes dominated in pre-plague London, while dental pathologies became more frequent after the plague, suggesting less exhaustive work and better diet (*cf.* Waldron 2001: 106; as a matter of fact, Waldron has not noticed the possible relation of this difference to the plague). In more general terms, the manpower shortage may have been the cause of re-population and deportation policies, competition between landlords, peasant revolts and other events of the kind.

Another important effect of the plague is the relative growth of the military power of marginal populations, especially pastoralists living in dry areas, compared to the states ravaged by the disease. It was certainly not the case of Late Medieval Europe where no invader from the peripheries could seriously threaten the core population. However, the situation in the Early Middle Ages was different and the rise of the Caliphate in the 7<sup>th</sup> century is sometimes interpreted as the effect of the plague pandemic (Russell 1968: 182–3; *cf.* Russell 1965: 99). It may be assumed that the presence of black rats was a decisive factor: if they did not live in a given area, the local human population was free of the disease and this fact gave it relative superiority over infected neighbours. The scarcity of communication routes may have also been a factor slowing down the spread of the plague.

Apart from the physical effects of the plague pandemic, there were also some psychological effects, although in this case the variability of responses is almost infinite. The “Black Death” gave birth to the Flagellant movement, increased the popularity of St. Rochus and St. Sebastian (Benedictow 2004: 6) and interest in astrology (*cf.* Cohn 2003: 229). The first plague pandemic perhaps supported the apotropaic and therapeutic use of images (but maybe also the iconoclasm of the 8<sup>th</sup> century) and stimulated interest in pilgrimages to the Holy Land (Krueger 2005: 302, 310).

#### THE SLAVIC EXPANSION

The Slavs became visible on the northern frontier of the Eastern Roman Empire approximately at the same time that the first plague outbreak ravaged the basin of the Mediterranean Sea. According to Procopius (*Wars*: 7.14.2–6) during the fourth

year of Justinian (530) one Chilbidius took the command over troops located along the Danube with the Emperor's order to keep control over the barbarians from the north, namely the Huns, Sklavines and Antes, who had previously often raided the Roman bank of the river. After three years (533) Chilbidius was defeated by the barbarians and they took control over the frontier. This passage is the earliest known reference to the Slavs in textual sources. It is likely that from the beginning of the 6<sup>th</sup> century these tribes occasionally broke into Thrace, but their large-scale activity in the Roman provinces did not start until the 540s (Fine 1983: 28). In 547/8, the Slavs raided Illyricum and took many strongholds which were empty of defenders (Procopius, *Wars*: 7.29.1–2), next year they besieged the first towns in Thrace and Illyricum (Vryonis 1981: 386) and after 551 their activity in the Balkans was continuous.

The migration of nomadic Avars who in 558/9 established their khaganate in the Hungarian Plain speeded up Slavic activities. The Avars immediately took political control over Slavic communities (Pohl 2005: 471) and in the following years Slavs formed a greater part of the Avaric troops while plundering the Balkans on their own at the same time. During the rule of three of Justinian's immediate successors, Roman control over Thrace, Moesia, Illyricum, and Greece became illusory. The Slavs captured towns and villages, took the cattle, abducted the inhabitants or forced them to flee to the highlands (Fine 1983: 29–30; Pritsak 1991: 1916).

After a period of intensive raiding, the Slavs began to settle in the territories they had previously plundered. The turning point was the capture of Sirmium by the Avars in 582: the fall of this important town on the Danube opened the Balkans to massive migration from the north (Fine 1983: 30). During the next few years the Slavs settled in former Moesia, a greater part of Thrace, the interior of Illyricum and western Greece, forcing the previous population to migrate, flee to refugial strongholds on the seashores or assimilate (Charanis 1950: 163; 1959: 36–9; Fine 1983: 29–31; Sarris 2002: 51; Haldon 2005: 54). The emperors were helpless, as for example Tiberius, who “did not have a force strong enough to resist even part of the invaders (and certainly not the whole horde of them) and he was unable to face them in battle because the Roman armies were occupied with the wars in the East” (Menander frg. 21). Only after the treaty of peace with Persia in 591 was Maurice able to start restoring Roman control over the Balkans. However, the recovery was temporal: Maurice defeated the Avars who tried to besiege Constantinople in 598/599 and his army pacified the Slavs north of Danube, but low morale among the Roman troops and reduced pay induced an army revolt in 602. Maurice was executed and the leader of the revolted troops, Phocas, became the emperor. The Empire lost effective control over a greater part of the Balkans for almost two centuries and the Slavs were free to settle wherever they liked (Fine 1983: 33).

The origin of the Slavs is still a mystery. The names of Sklavines and Antes did not appear in known texts before Procopius and it is unlikely that they were simply

omitted by the 5<sup>th</sup>-century authors. The earliest sources suggest that they did not form any cohesive ethnic group, as the Germanic tribes which settled in the Western Empire a century before, but were an egalitarian and dispersed population of self-reliable peasants living in the forest areas and practicing flexible subsistence strategies based on the cultivation of millet and wheat combined with cattle breeding (Procopius, *Wars*: 7.14; Pseudo-Maurice: 11.4; Kurnatowska 1977: 62–4; cf. Kohl 1998: 231–2). Perhaps the Sklavines and Antes were the mixed survivors of previous agricultural populations of central Europe who during the earlier centuries of wars, nomadic incursions and general instability, adopted a more mobile and individual way of life far from the Roman Empire and its troubles (Maas 2005: 12). This model may have been attractive for other barbarians or even Roman farmers pressed by the taxes, who readily renounced oppressive civilization and adopted the Slavic identity of free peasants (Pohl 2005: 470; cf. Anonymous, *Miracula*: 2.4.248). One factor which contributed to the fast spread of the Slavs was their attitude to prisoners-of-war, who used to be freed after a certain period of slavery and could voluntarily stay in the Slavic community (Pseudo-Maurice: 11.4.4, cf. Anonymous, *Miracula*: 2.5.286). Last but not least, Slavic expansion in the Balkans forced the surviving Thracian-Illyrian farmers to adopt a new identity or flee (cf. Khazanov 1976: 758).

Together with the Slavic identity refugees from Roman civilization adopted the language connected with their new way of life. In the 6<sup>th</sup> century, Slavonic was a homogenous language, the dialectic differences beginning to develop only after the Balkans had been dominated by the Slavs (Popowska-Taborska 1993: 172; cf. Procopius, *Wars*: 7.14.26). This strongly suggests that the language spread in a short time as a kind of *lingua franca* (Pritsak 1991: 1916).

The textual and archaeological evidence shows a very primitive and self-supporting economy practiced by the Slavs. They lived in square sunken huts, produced a simple kind of pottery on their own, and were always ready to move to another place or hide out in the forests (Fine 1983: 27; Vryonis 1981: 379, 385). The earliest known Slavic settlements were simply scattered clusters of one-room huts accompanied by some storage pits (V'žarova 1970: 97). One very characteristic peculiarity of the Slavic communities is their lack of permanent authority. It is likely that in times of trouble they came together in extended households or kin-based local units (Fine 1983: 7), but it was only an external threat (Avars, Bulgars, or Romans) that induced them to assume a higher level of organization. Few names of Slavic warlords are mentioned in the sources (Mezimir and Daurentius in Menander; Chatzon in Anonymous, *Miracula*: 2.1.193); in most cases, it is a simple reference to Slavonic troops or leaderless bands (e.g., Procopius, *Wars*: 7.13.24; 7.14.11; 7.29.1; 7.38.1; 7.40.1, 31; 8.25.1).

In the first phase of their contacts with the Eastern Roman Empire, the Slavs did not show much interest in settling south of Danube. They raided to plunder and having devastated more or less distant areas, they would return across the river with

their booty, cattle and prisoners (Lee 2005: 127). Such behaviour excludes population pressure as a cause of expansion. Captives stayed with them as a rule, their presence in Slavic communities witnessed not only by textual sources, but also by archaeological evidence (Kurnatowska 1977: 27–8). The absence of tribal organisation and of strong leadership did not induce them to make war on the Romans for tribute, although occasionally they took advantage of the coerced generosity of the emperors. This changed dramatically after the coming of the Avars, but in the initial period the Slavs simply enjoyed the weakness of the northern border of Eastern Roman Empire and treated the European provinces as an easy source of basic resources, including chiefly cattle, slaves, and food.

#### THE PLAGUE AND THE SLAVS: TOWARDS A HISTORICAL MODEL

It may be hypothesised that the decline of Roman control over the Balkans was the effect of the plague pandemic. There is no direct evidence, but it is very likely that the Slavs did not suffer much from the disease and for that reason they became proportionally more numerous in relation to the inhabitants of Moesia, Thrace, and Illyricum. Procopius (*Wars*: 7.29.1–2) explicitly mentioned deserted towns in Illyricum when the Slavs first raided this province in the late 540s and it is impossible to explain this rapid depopulation as the effect of occasional previous military conflicts.

This simple association of two contemporary events is however quite superficial and needs more discussion. Fortunately, the epidemiological model of the plague is precise enough to define some effects of the pandemic which are at least in part separable from the effects of other factors (wars, famines, *etc.*) and may be confronted with the historical evidence. More problematic are the sources from the discussed period, which was a real Dark Age in history. Apart from a few rather curt chronicles, a handful of poorly dated documents of another kind and single inscriptions, only the scattered archaeological sources witness crucial changes occurring in the Eastern Roman Empire between the death of Maurice and the beginning of state recovery close to the end of the 8<sup>th</sup> century.

Another very important methodological problem is related to the peculiarity of historical models. The history of every human society is an unique process with many factors linked together in a complicated network of relations. Some factors are general and constant, others recurrent, but still there are many which were specific to a given population in a given time. It means that the effects of three plague pandemics, although theoretically comparable if not identical, actually generated different social, economic and political responses according to these unique and sometimes purely accidental local coincidences. In consequence, the historical model for the first pandemic, constructed by confronting the epidemiology of the plague with the unique milieu of the Early Middle Ages, may be tested only in part on

a control set of data, as the “Black Death” in this case. The cohesion of the model and its explanatory power is just as important, although it would be naïve to expect that reliable verification is possible with scarce and usually obscure sources.

The history of the Eastern Roman Empire after the first outbreak of the plague may be roughly divided into three periods: (1) the fall of the imperial social and economic organisation established by Diocletian in the late 3<sup>rd</sup> century, which had worked well until Justinian, and eventually collapsed together with the fall of Maurice in 602; (2) a long and profound crisis and reorganisation of the Empire initiated by Heraclius and continued into the latter half of the 8<sup>th</sup> century; (3) the recovery of the Empire in its new Byzantine form. During the first two periods, successive outbreaks of the plague first decimated the population of the Empire, then restrained its growth. Apart from the evolution of administration and society in the Empire, these three stages were also characterized by a changing approach of the Slavs who shifted from unwelcome raiders to tolerated settlers and eventually a source of manpower for the restored state.

#### FIRST STAGE: THE FALL OF THE OLD WORLD

In the first half of the 6<sup>th</sup> century, the economy of the Empire was based chiefly on large estates owned by high officials, local aristocrats and the Church. Arable land belonging to these landlords was cultivated by two categories of peasant tenant farmers: *coloni adscripticii* attached to the land and free *coloni liberi*. There were also some independent peasants, but this class was less and less numerous due to heavy fiscal burdens (Haldon 2005: 38–9). Two kinds of taxes were of greatest importance: *iugatio* (land tax) and *capitatio* (labor tax). From Diocletian’s time, the land tax was to be re-evaluated every 15 years (but this occurred actually with less regularity) and depended on area and soil quality. Taxes for deserted land were paid by the neighbours, the rule being established to restrain abandonment of arable areas and to secure satisfactory income for the administration (Setton 1953: 227; Haldon 2005: 44). Taxes were elevated, sometimes reaching 50% of the crops (Wickham 1984: 21) and making life very hard for the peasants (Haldon 2005: 46–7).

Only a small part of the land tax was paid in cash, most of it was in kind. Grain was stored in regional state granaries and was used to assure the subsistence of Constantinople and other great cities, for the administration and, importantly, as a greater part of military pay. Starting with the Diocletian reform, Roman armies were recruited chiefly from the borderland populations and the barbarian tribes (Lee 2005: 118). In times of prosperity, soldiers were paid in cash, but there was always the alternative of supporting them in food instead (Haldon 2005: 44). Occasionally, the Roman emperors chose to accomplish their military goals in an indirect way by paying barbarian tribes to fight against others (*cf.* Procopius, *The secret history*: 11). Whether payment was in cash or kind, the army was dependent on the efficiency of taxation.

The system worked well as long as agriculture flourished, the redistribution network was efficient and the recruitment base stable. There were two important parameters in the economy of Eastern Roman Empire: arable land size and manpower. When both were abundant, the emperors were successful in their military and civilian actions. Some researchers have claimed that unending warfare under Justinian had exhausted the Empire (*cf.* Introduction). It is unlikely, however, because the wars were successful in the first period of his rule and the successive campaigns created a snowball effect: every victory increased the area and manpower at the emperor's disposal, making his superiority over neighbours more and more evident and enabling him to continue the expansion until the point of administrative efficiency.

This economy was suddenly ruined by the plague which caused a sharp and profound decrease in manpower. The most important short-time effects of the plague are described precisely (and often exaggeratedly) in *The secret history* by Procopius who explicitly associated the agricultural crisis with the pandemic: "The pestilence, which had attacked the inhabited world, did not spare the Roman Empire. Most of its farmers had perished of it, so that their lands were deserted; nevertheless Justinian did not exempt the owners of these properties. Their annual taxes were not remitted, and they had to pay not only their own, but their deceased neighbours' share" (*The secret history*: 23). The second effect was the reduction of the armies whether directly due to the disease itself or indirectly by the temporary disturbances in the distribution system: "Pestilence, falling upon them, had destroyed most of the army, and many had died from lack of necessary food and treatment" (*The secret history*: 2). Social life was also disrupted: "No one dared pay any attention to public buildings; there were no public lights in any city, nor any entertainment for the citizens. For the theatres, hippodromes, and circuses, in which his wife had been born, bread and educated, were all discontinued" (*The secret history*: 26).

In spite of all these problems, Justinian continued his policy of expansion, although under the new circumstances, it only worsened the situation of the Roman Empire. Continued excessive taxation of the remaining peasants was essential to provide the central administration with the money it needed; the result was desperate tax-payers fleeing into the lands of the barbarians (Procopius, *The secret history*: 11). Campaigns in Italy and wars against Persia were so expensive that Justinian was not able to provide the Balkan provinces with adequate military power, preferring to pay the barbarians and expecting with untoward optimism that they would become Roman allies in the war against the Ostrogoths (Procopius, *The secret history*: 8, 11). Indeed, some Slavic allies in Italy were mentioned by the sources (Procopius, *Wars*: 7.22.3), but it is unlikely that they played an important role in the Gothic war.

Complete anarchy soon spread over the whole region: "Illyria and all of Thrace, that is, from the Ionian Gulf to the suburbs of Constantinople, including Greece and the Chersonese, were overrun by the Huns, Slavs and Antes, almost every year, from the time when Justinian took over the Roman Empire; and intolerable things



they did to the inhabitants. For in each of these incursions, I should say, more than two hundred thousand Romans were slain or enslaved, so that all this country became a desert like that of Scythia” (Procopius, *The secret history*: 18, cf. 11). Procopius wrote of local farmers fighting against raiding bands of barbarians (*The secret history*: 21), but without support from the government they could not succeed. In effect, the Balkans were left open to the Slavs.

The successive outbreaks of the plague only deepened the crisis. It is likely that after the first wave, by analogy to the “Black Death”, many depopulated farms were taken over by poor hired workers who had not owned land previously. During the next outbreaks, however, such a surplus of manpower was no longer available. The shortage of manpower and heavy tax burdens ruined the landlords, diminishing in turn government income. This feed-back effect made the Empire less and less controllable despite the emperors’ desperate efforts in this direction.

The post-plague part of Justinian’s rule and the reigns of his three successors are a clear illustration of this process. There was strong resistance to a debasement of the coinage (cf. John Malalas: 18.486) and the state economy was in such deep crisis that Tiberius I Constantine was forced to remit all taxes for a year (Haldon 2005: 54), making it almost impossible to supply the army adequately. Maurice reduced military pay by a fourth, but soon even this reduction proved insufficient (Sarris 2002: 51). After the Lombards’ invasion in 568, Justinian’s successors gave up on intensive expansion in Italy, but even so the Persian wars absorbed most of the Empire’s resources for many more years. The Persians deported a great part of the Syrian rural population to Mesopotamia (perhaps also due to manpower shortages caused by the plague) and many areas in the East were heavily devastated and occupied by pastoralists (Foss 1997; Lee 2005: 127; Greatrex 2005: 483; Donner 2005: 519). This additional factor again deepened the economic crisis.

In this period, the Slavs began to settle in the Balkans and to absorb a part of the still living local rural population. One of effects of this process was a shift of the recruitment base for the Roman army: in Maurice’s times, the Illyrians and Isaurians prevailing during the pre-plague period were largely replaced by the Armenians (Charanis 1959: 32; Fine 1983: 9).

The Empire reached a nadir during the reign of Phocas (602–611). Almost all the provinces except for Anatolia had fallen into anarchy and Maurice’s successes in re-establishing Roman control over the Balkans were squandered.

## SECOND STAGE: CRISIS AND RE-ORGANISATION

The situation of the Eastern Roman Empire stabilized during the reign of Heraclius. The emperor first slashed official salaries and military pay by half, reformed the administration and collected gold and silver from the churches (Sarris 2002: 55).

These measures proved sufficient to survive the siege of Constantinople by the Avars in 626 and to defeat finally the Persians in 627–628. However, the Empire was still too weak to hold back the expansion of the Arabs, who after the battle on the Yarmouk in 636 extended their rule over Roman Syria and Egypt and conquered the Persian territories, too (Theophanes: 338–41).

The irreversible loss of Egypt and Syria was a very hard blow for the Empire, considering that these provinces had been the source of about 75% of the revenues (Maas 2005: 14). Egyptian grain was the most important food for the population of the Constantinople and for the army (Teall 1959: 89–91). The previous depopulation due to the plague somewhat reduced the blow, but still it completely destroyed the weak economic balance achieved by Heraclius. The Arabs took control of Egypt and Mesopotamia, two of the most important agricultural areas that had previously secured the long-lasting balance between the Romans and the Persians. Suddenly the geopolitical situation changed and the Roman Empire became much weaker than its enemy in the East. The next hundred years witnessed a dramatic struggle for survival in the face of unceasing Arabic expansion.

Only total reform could ensure continuation of the Empire. Farming in Anatolia and Thrace, the core provinces of the state, developed to compensate for the loss of the most important agricultural provinces (Lopez 1959: 72; Teall 1959: 124–5). Some small quantities of grain may have been imported from the regions north of the Black Sea and even from Syria (Teall 1959: 118–20), and also Slavic settlers sometimes supplied the Romans (Teall 1959: 122). In general, however, the remaining regions of the Roman state became self-sufficient and also the population of Constantinople started to be fed by the neighbouring areas of Thrace.

The most important change which took place in the 7<sup>th</sup> century was the re-organization of the administrative system. Provinces were replaced by themes (*themata*), territories which were associated with individual armies and governed by strategs who exercised both military and civilian authority over a region. Consequently, it became possible to abandon the previous centralized system of distribution, which had collapsed when the large estates were ruined by a shortage of manpower (Charanis 1953: 414; Haldon 1993: 12).

Due to the scarcity of written sources from the dark period, it is not clear whether the system of themes was established as a result of Heraclius' conscious decision after the evacuation of Roman armies from the provinces taken by the Arabs (Ostrogorsky 1959: 3; Haldon 1993: 4, 8), or the reform was gradual and the changes in political situation inclined the emperors to organize new themes (Teall 1971: 48; Kazhdan 1991: 2054; Fine 1983: 70; cf. Treadgold 2002: 133). In this case the exact date is not as important as the result of the reform. The most important change was the establishment of a direct link between the land and the military forces. The emperors still collected taxes from some farmers and maintained some mobile troops but the greater

part of the army started to be recruited from peasant-soldiers (*stratiotoi*) who received their plots of the land in return for hereditary military service (Treadgold 2002: 132–3; Charanis 1953: 414; cf. Haldon 1993: 25). The system was not perfect, because peasant-soldiers were not as mobile as previously the mercenary troops and they were also not as well trained. On the other hand, they had much better motivation to fight for their own land. More importantly, the emperors were able to save money and the state economy began to recover (Haldon 1993: 14–6, 44–5).

One of the key characteristics of the new system was an appreciation of the position of free peasants who became the most important class of Byzantine society. It also changed the relation between the Empire and the Slavic settlers in the Balkans. After the unsuccessful siege of Constantinople in 626, Avar domination over the Slavs eroded (Charanis 1959: 37; Fine 1983: 43) and by the middle of the 7<sup>th</sup> century the Slavs had formed their first states in the Balkans and some independent territories called *slavinias*, which were inhabited by free peasants. The Slavs of the time raided the remaining Roman territories only occasionally (cf. Teall 1959: 122) and before the migration of the Bulgars to the former territory of Thrace in the 670s, the activity of Roman armies in the Balkans was minimal.

Available textual sources, although very few and terse, point at one very important change after the introduction of the thematic system. Previously, the peasants had suffered from taxation, occasionally fleeing the oppression to barbarian territories and adopting the Slavic way of life. After the reform, the Empire became attractive again to the free peasants who could enjoy more security as Byzantine farmers and soldiers. In the 670s or 680s, for example, there was a case of a group of former captives who had kept the memory of their Roman origin deciding to migrate from the area of Sirmium to Thessaloniki (Anonymous, *Miracula*: 2.5). More importantly, however, the deportation policy of the Byzantine emperors called for forcing (or encouraging) the population of invaded Slavic territories to settle in various places in Anatolia and other parts of the Byzantine state (cf. Fine 1983: 6).

The first known case of this policy was the expedition of Constans II to the Balkans in 657–658, concluded with the deportation of an unknown number of Slavs to Anatolia (Charanis 1961: 143). Possibly the 5,000 Slavs settled in Syria by the Arabs were part of this population (Theophanes: 348; Charanis 1959: 42). Justinian II undertook a more intensive exchange of peoples: he ordered the migration of the Mardaites to Greece in 688 and the Cypriots to Cyzicus in 691 (Charanis 1961: 143). The Slavs appear to have constituted the most numerous deported group, a part of them having even voluntarily moved from the Balkans to Opsikion in Bithynia (Theophanes: 364; Treadgold 2002: 136). Their loyalty was not to be counted on: in 692 the emperor formed an army of 30,000 Slavs against the Arabs, but two-thirds of them deserted and probably settled in Syria, which had been depopulated by a famine just five years before (Charanis 1959: 42). The next known deportation of the Slavs was ordered by

Constantine V Copronymus. A direct relation to the plague is likely in this case, because the last known outbreak of the first pandemic, which occurred in 747, hit very hard and the emperor “populated [Constantinople] by transferring to it a multitude of people from the lands and the islands subject to the Romans” (Nikephoros: 68). In a rather obscure passage in *De thematibus*, Constantine VII Porphyrogenitus wrote that the Peloponnesus was slavonized and barbarous when “the deadly plague ravaged the universe” during the reign of Constantine V. Sometimes this statement is interpreted as a reference to the expansion of Slavic settlement in Greece after the plague outbreak in 747 (Fine 1983: 62; cf. Charanis 1961: 144) and it is possible that in some places the Slavs actually replaced the Greek population moved by the emperor to Constantinople, while in other cases they migrated also directly to Byzantium.

The greatest known transfer of a Slavic population to Byzantine territory was a consequence of the Bulgarian wars in 760 and later. In 763, some Slavs revolted against the Bulgars “and went over to the Emperor, who settled them at Artanas” (Theophanes: 432). Nikephoros (75) wrote that the migration of the Slavs occurred several years after 763 and that 208,000 immigrants were settled by the river Artanas. Also during the first reconquest of Greece in 780, many Slavic captives were moved to the Byzantine territories (Ostrogorsky 1959: 6).

The chronicles surely mentioned only the most important events and it is probable that Slavic settlers migrated to Byzantine territories in less numerous groups also in the periods between major imperial expeditions to the Balkans. They were the major subject of known deportations and it is likely that a great part of the manpower in the new Byzantine economy was provided by the Slavs or peoples of Slavic origin settled in the themes of Anatolia and Thrace (Fine 1983: 90).

### THIRD STAGE: POST-PLAGUE RECOVERY

The Byzantine deportation policy reached its peak in the times of Nikephoros I (802–811) who regained Greece and started the process of re-Hellenization of its territories by allowing the return of Greek refugees from Italy and other regions (Fine 1983: 6). Nikephoros tried also to extend his control over independent *sclavinias* by moving the Christian populations of Anatolia to the Balkans and, reversely, the Slavs to Anatolia (Charanis 1950: 155; Fine 1983: 81). The policy appeared to be effective and during the 9<sup>th</sup> century new themes were organized in the Balkans. The Slavs were Christianized and became Byzantine tax-payers. The process of reconquest was continued until Basil II defeated Bulgaria in 1018 and restored the border on the Danube. The population reached pre-plague numbers apparently as early as in the end of 9<sup>th</sup> century and the Empire flourished again (Teall 1959: 106). Abundant manpower created new great landowners and the economy gradually returned to the pre-plague model (Fine 1983: 89; Charanis 1953: 416; Setton 1953: 240).

The sequence of relations between the Empire and the Slavs presented here is easy to understand, if the plague pandemic and its effects are taken into consideration. The most important effect is the prolonged deficit of manpower, which translated into economic terms, meant the collapse of the taxation system in the Eastern Roman Empire, the ruin of large estates and serious problems with army supplies and recruitment. The crisis was deepened by Justinian and his direct successors who pushed a policy of expansion in an inefficient economy. This situation was exploited by the Slavs, mobile farmers from Central Europe who raided the Empire in search of resources. Roman troops in the Balkans were unable to control them and eventually the Slavs settled in areas depopulated by the plague, left wide open because of the tribulations of central authority. Survivors of the local population in these regions either joined the Slavs or migrated to refugial areas and elsewhere.

The situation changed after the establishment of the thematic system. The Byzantine state regained stability (although on a much lower level) by reducing the redistribution network and developing a strong link between the land and military service. Consequently, the state and army were both strengthened in a simple and sure way: by settling new peasants in deserted areas. It changed the relation between the state and the Slavs who were perceived as a valuable source of manpower and deported in great number to Anatolia. Thus, after the initial spontaneous settlement, the expansion of the Slavs was supported by the Byzantine emperors who tried to re-populate their state after the plague pandemic, and sometimes also by the Arabs who, having also suffered from depopulation, warmly welcomed Slavic settlers. It is unlikely for any factor other than the plague pandemic to have caused such a rapid and extensive decline of the population, which set this entire process into motion.

#### SEARCH FOR ARCHAEOLOGICAL EVIDENCE

The historical model presented above is based chiefly on written sources which are very fragmentary for the most interesting period between the death of Maurice and the reconquest of the Balkans in the early 9<sup>th</sup> century. Moreover, it is unlikely that any new chronicle for that period will be found in future. However, more evidence may be provided by archaeology, which seems to be the only way to check the validity of the proposed relation between the plague and Slavic expansion. Indeed, archaeological evidence can be used to verify the real impact of the plague pandemic on population size, and the actual range of Slavic migration.

There is extensive evidence for the depopulation of the Eastern Roman Empire and other territories during the 6<sup>th</sup> and 7<sup>th</sup> centuries. In highland areas near Antioch, building activity ceased around 550 (Foss 1997: 200–4) and even if many houses were still inhabited in later periods, proper maintenance seems to have been at a minimum (*cf.* Sodini 1993: 150). The same pattern of stagnation after a period of constant

growth was noted also in Palestine (Holum 2005: 97). Excavations in contemporary cities (like Athens or Corinth) revealed that the inhabited area had decreased by half, suggesting an analogous or even deeper drop in population size (Treadgold 2002: 142). A comparable decrease in settlement size was observed in eastern Romania in the 6<sup>th</sup>/7<sup>th</sup> century (Ellis 1998: 227), although in this case the evidence is not entirely clear, and also in the British Isles after the plague outbreak in the late 7<sup>th</sup> century (Baillie 1986: 154–5; Maddicott 1997: 50–1).

In the opinion of some researchers, the rapid drop in population size was caused by barbarian incursion, breakdown of Roman power and the decline of trade (*cf.* Durand 1977: 271). However, deep and rapid demographic change can be hardly attributed to any vague and long-lasting process of social and political decline. Fortunately, it is possible to distinguish between rapid depopulation caused by a plague outbreak and slow process of gradual demographic decrease due to prolonged social stress and warfare. First, the plague victims are so numerous that normal burial rites are abandoned at least in part and many bodies are buried in common plague pits. There is textual evidence of such pits and some have actually been found (*cf.* Maugh 2002). Analysis of trauma frequency clearly distinguishes plague pits from the battle mass burials (Margerison and Knüsel 2002: 140). Secondly, the plague kills its victims irrespective of age; consequently, the age profile of skeletal remains from the times of a plague outbreak, both in plague pits and in regular cemeteries, should be more similar to the actual age profile of a living population rather than any skeletal sample from a regular “attritional” cemetery (Margerison and Knüsel 2002: 135). The main difference is the increased frequency of older children, juveniles and young adults in plague-time samples, because under normal circumstances the general mortality of these age classes is much lower in comparison to infants and aged adults. This peculiarity of the plague pandemic influences population dynamics for many years (Paine 2000) and may be used as a reliable indicator of actual impact of the disease. The only problem is a general lack of osteological studies on Early Medieval cemeteries (Sodini 1993: 156). Additional indirect evidence of a plague pandemic is provided by the presence of rat bones in archaeological sites from the 6<sup>th</sup>–8<sup>th</sup> centuries (McCormick 2003).

Archaeological evidence of Slavic expansion is a more difficult issue. There are some elements of material culture strongly connected with the Slavs (body cremation, square huts, poor Prague-type pottery), but it seems likely that the Slavs readily adopted local culture soon after settling in an area, abandoning their mobile and rudimentary way of life in favour of more comfortable and stable rural settlement. For this reason, direct archaeological evidence of Slavic presence in Greece and the southern Balkans is minimal compared to textual and onomastic sources (*cf.* Sodini 1993: 172; Vryonis 1981: 379–80) and the search in Anatolia or Syria for material culture typical of Slavic Transdanubia seems entirely pointless.

A decline in coin distribution can be considered as indirect evidence, although in this case other factors (decline in trade, development of thematic system, *etc.*) could

be at least equally responsible (Sodini 1993: 172; Treadgold 2002: 144). Osteological studies are potentially a valuable source of evidence (*cf.* y'Edynak 1976), but again the cremation exercised by the early Slavs makes them very difficult. The most valuable (although difficult to interpret) potential evidence of Slavic movements is a detailed analysis of changes in settlement patterns during the Dark Age.

#### CONCLUSION

The association of the first plague pandemic with Slavic expansion in the Balkans, discussed in the present paper, appears to be the most coherent explanation of the sequence of events observed in the European provinces of the Eastern Roman Empire in the 6<sup>th</sup> through the 8<sup>th</sup> centuries. No assumption of demographic pressure or other external forces is needed to explain the southward migration of the Slavs: a simple under-pressure mechanism seems likely, the Slavs being attracted to the Balkans as a depopulated area neglected by imperial government. Despite having no developed political and military organisation, they simply took over the abandoned land and its resources. Later, their migration was even supported by the Empire which exploited the Slavs as easily accessible manpower, so needed after the demographic crash. In that context, the expansion of the Slavs in the Balkans was a specific regional process which cannot be treated as a model for the cultural or population changes north of the Danube.

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#### REFERENCES

- Agathias. 1975. *Historiae*, J.D. Frendo (ed.). *Corpus Fontium Historiae Byzantinae*, vol. 2A. Berlin.
- Anonymous. 1979. *Miracula sancti Demetrii*, P. Lemerle (trans.). Paris.
- Appleby, A.B. 1980. The disappearance of plague: a continuing puzzle. *The Economic History Review* 33: 161–73.
- Baillie, M.G.L. 1986. Marker dates: turning prehistory into history. *Archaeology of Ireland* 2: 154–5.

- 1991. Marking in marker dates: towards an archaeology with historical precision. *World Archaeology* 23.2: 233–43.
- Baltazard, M. 1959. Nouvelles données sur la transmission interhumaine de la peste. *Bulletin de l'Académie Nationale de Médecine* 143: 517–22.
- Benedictow, O.J. 1987. Morbidity in historical plague epidemics. *Population Studies* 41.3: 401–31.
- 2004. *The Black Death 1346–1353. The complete history*. Woodbridge.
- Biraben, J.-N. and J. Le Goff 1969. La peste dans le Haut Moyen Age. *Annales ESC* 24.6: 1484–510.
- Charanis, P. 1950. The Chronicle of Monemvasia and the question of the Slavonic settlements in Greece. *Dumbarton Oaks Papers* 5: 139–66.
- 1953. Economic factors in the decline of the Byzantine Empire. *The Journal of Economic History* 13.4: 412–24.
- 1959. Ethnic changes in the Byzantine Empire in the seventh century. *Dumbarton Oaks Papers* 13: 23–44.
- 1961. The transfer of population as a policy in the Byzantine Empire. *Comparative Studies in Society and History* 3.2: 140–54.
- Cohn, S.K. 2002. The Black Death: end of a paradigm. *The American Historical Review* 107.3.
- 2003. *The Black Death transformed*, London.
- Davis, S., M. Begon, L. De Bruyn, V.S. Ageyev, N.L. Klassovskiy, S.B. Pole, H. Viljugrein, N.Ch. Stensteth and H. Leirs 2004. Predictive thresholds for plague in Kazakhstan. *Science* 304: 736–8.
- Dols, M.W. 1974. Plague in Early Islamic history. *Journal of the American Oriental Society* 94: 371–83.
- 1977. *The Black Death in the Middle East*. Princeton.
- Donner, F.M. 2005. The background to Islam. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 510–34. Cambridge.
- Drancourt, M., V. Roux, L.V. Dang, L. Tran-Hung, D. Castex, V. Chenal-Francois, H. Ogata, P.-E. Fournier, E. Crubézy and D. Raoult 2004. Genotyping, Orientalis-like *Yersinia pestis*, and plague pandemics. *Emerging Infectious Diseases* 10.9: 1585–92.
- Durand, J.D. 1977. Historical estimates of world population: an evaluation. *Population and Development Review* 3: 253–96.
- Ellis, L. 1998. “Terra deserta”: population, politics, and the [de]colonization of Dacia. *World Archaeology* 30.2: 220–37.
- Evagrius Scholasticus. 1846. *The Ecclesiastical History*, E. Walford (trans.). London.
- Fine, J.V.A. 1983. *The Early Medieval Balkans. A critical survey from the sixth to the late twelfth century*. Ann Arbor.
- Foss, C. 1997. Syria in transition, A.D. 550–750: an archaeological approach. *Dumbarton Oak Papers* 51: 189–269.
- Freney, J. and W. Hansen W. 1998. Histoire de la peste, de son diagnostic et de son traitement. *Lyon Pharmaceutique* 49: 84–106.
- Greatrex, G. 2005. Byzantium and the East in the Sixth Century. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 477–509. Cambridge.
- Gregory of Tours. 1927. *The history of the Franks*, O.M. Dalton (trans.). Oxford.
- Haldon, J.F. 1993. Military service, military lands, and the status of soldiers: current problems and interpretations. *Dumbarton Oaks Papers* 47: 1–67.
- 2005. Economy and administration: how did the Empire work? In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 28–59. Cambridge.
- Hinnebusch, B.J., R.D. Perry, and T.G. Schwan 1996. Role of the *Yersinia pestis* hemin storage (hms) locus in the transmission of plague by fleas. *Science* 273: 367–70.
- Hinnebusch, B.J., A.E. Rudolph, P. Cherepanov, J.E. Dixon, T.G. Schwan and A. Forsberg 2004. Role of *Yersinia murine* toxin in survival of *Yersinia pestis* in the midgut of the flea vector. *Science* 296: 733–5.



- Holum, K.G. 2005. The classical city in the sixth century: survival and transformation. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 87–112. Cambridge.
- Horden, P. 2005. Mediterranean plague in the Age of Justinian. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 134–160. Cambridge.
- Isidore of Seville. 1911. *Etymologiae*, W.M. Lindsay (trans.). *Scriptorum classicorum. Bibliothecae Oxoniensis Lat.* 8, 1–2. Oxford.
- John of Ephesus. 1860. *The third part of the Ecclesiastical History*, R. Payne Smith (trans.). Oxford.
- John Malalas. 1986. *The Chronicle*, E. Jeffreys et al. (trans.). *Byzantina Australiensia* 4. Melbourne.
- Karlsson, G. 1996. Plague without rats: the case of fifteenth-century Iceland. *Journal of Medieval History* 22.3: 263–84.
- Kazhdan, A. 1991. Theme. In *The Oxford Dictionary of Byzantium*, vol. 3, A.P. Kazhdan (ed.), 2054–5. Oxford.
- Keeling, M.J. and C.A. Gilligan 2000. Metapopulation dynamics of bubonic plague. *Nature* 407: 903–5.
- Kelly, J. 2005. *The great mortality. An intimate history of the Black Death*. London–New York.
- Khazanov, A.M. 1976. On Slavic movements into Yugoslavia. *Current Anthropology* 17.4: 758–9.
- Kohl, P.L. 1998. Nationalism and archaeology: on the constructions of nations and the reconstructions of the remote past. *Annual Review of Anthropology* 27: 223–46.
- Krueger, D. 2005. Christian piety and practice in the sixth century. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 291–315. Cambridge.
- Kurnatowska, Z. 1977. *Słowiańszczyzna południowa*. Wrocław.
- Lee, A.D. 2005. The Empire at war. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 113–33. Cambridge.
- Lopez, R.S. 1959. The role of trade in the economic readjustment of Byzantium in the seventh century. *Dumbarton Oaks Papers* 13: 67–85.
- Maas, M. 2005. Roman questions, Byzantine answers: contours of the age of Justinian. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 3–27. Cambridge.
- Maddicott, J.R. 1997. Plague in seventh-century England. *Past and Present* 156: 7–54.
- Margerison, B.J. and Ch.J. Knüsel 2002. Paleodemographic comparison of a catastrophic and an attritional death assemblage. *American Journal of Physical Anthropology* 119: 134–43.
- Maugh, T.H. 2002. An Empire's epidemic. *Los Angeles Times*, May 6.
- McCormick, M. 2003. Rats, communications, and plague: towards an ecological history. *Journal of Interdisciplinary History* 34.1: 1–25.
- Mecsas, J., G. Franklin, W.A. Kuziel, R.R. Brubaker, S. Falkow and D.E. Mosier 2004. CCR5 mutation and plague protection. *Nature* 427: 606.
- Menander the Guardsman. 1985. *The history*, R.C. Blockley (trans.). *Classical and Medieval Texts, Papers and Monographs* 17. Liverpool.
- Michael the Syrian. 1899. *Chronique de Michael le Syrien, Patriarche Jacobite d'Antioch (1166–1199)*, J.-B. Chabot (trans.), vol. I. Paris.
- Nikephoros Patriarch of Constantinople. 1990. *Short history*, C. Mango (trans.). *Dumbarton Oaks Texts* 10. Washington DC.
- Ostrogorsky, G. 1959. The Byzantine Empire in the world of the seventh century. *Dumbarton Oaks Papers* 13: 1–21.
- Paine, R.R. 2000. If a population crashes in prehistory, and there is no paleodemographer there to hear it, does it make a sound? *American Journal of Physical Anthropology* 112: 181–90.
- Pohl, W. 2005. Justinian and the barbarian kingdoms. In *The Cambridge Companion to the Age of Justinian*, M. Maas (ed.), 448–76. Cambridge.
- Popowska-Taborska, H. 1993. Summary. The early history of the Slavs in the light of their language. In *Wczesne dzieje Słowian w świetle ich języka*, 171–2. Warszawa.

- Potter, D.S. 1990. *Prophecy and history in the crisis of the Roman Empire. A historical commentary on the Thirteenth Sibylline Oracle*. Oxford.
- Pritsak, O. 1991. Slavs. In *The Oxford Dictionary of Byzantium*, vol. 3, A.P. Kazhdan (ed.), 1916–8. Oxford.
- Procopius. 1914. *History of the wars*, vols. 1–7, H.B. Dewing (trans.). Loeb Library of the Greek and Roman Classics, Cambridge MA.
- 1961. *The secret history*, R. Atwater (trans.). Ann Arbor.
- Pseudo-Maurice. 1984. *Strategikon: Handbook of Byzantine military strategy*, G.T. Dennis (trans.). Philadelphia.
- Raoult, D., G. Aboudharam, E. Crubézy, G. Larrouy, B. Ludes and M. Drancourt 2000. Molecular identification by 'suicide PCR' of *Yersinia pestis* as the agent of medieval Black Death. *Proceedings of the National Academy of Sciences* 97: 12800–3.
- Russell, J.C. 1965. Recent advances in mediaeval demography. *Speculum* 40.1: 84–101.
- 1968. That earlier plague. *Demography* 5.1: 174–84.
- Saltmarsh, J. 1941. Plague and economic decline in England in the Later Middle Ages. *Cambridge Historical Journal* 7.1: 23–41.
- Sarris, P. 2002. The Eastern Empire from Constantine to Heraclius (306–641). In *The Oxford History of Byzantium*, C. Mango (ed.), 19–59. Oxford.
- Setton, K.M. 1953. On the importance of land tenure and agrarian taxation in the Byzantine Empire, from the fourth century to the Fourth Crusade. *The American Journal of Philology* 74.3: 225–59.
- Sodini, J.-P. 1993. La contribution de l'archéologie à la connaissance du monde byzantin (IV<sup>e</sup>–VII<sup>e</sup> siècles). *Dumbarton Oaks Papers* 47: 139–84.
- Stathakopoulos, D.Ch. 2004. *Famine and pestilence in the Late Roman and Early Byzantine Empire*. Birmingham Byzantine and Ottoman Monographs 9. Aldershot.
- Stothers, R.B. 1999. Volcanic dry fogs, climate cooling, and plague pandemics in Europe and the Middle East. *Climatic Change* 42: 713–23.
- 2000. Climatic and demographic consequences of the massive volcanic eruption of 1258. *Climatic Change* 45: 361–74.
- Teall, J.L. 1959. The grain supply of the Byzantine Empire, 330–1025. *Dumbarton Oaks Papers* 13: 87–139.
- 1971. The Byzantine agricultural tradition. *Dumbarton Oaks Papers* 25: 33–59.
- Theophanes. 1982. *The chronicle*, H. Turtledove (trans.). Philadelphia.
- Treadgold, W. 2002. The struggle for survival (641–780). In *The Oxford History of Byzantium*, C. Mango (ed.), 129–50. Oxford.
- Vryonis, S. 1981. The evolution of Slavic society and the Slavic invasion in Greece. The first major Slavic attack on Thessaloniki, A.D. 597. *Hesperia* 50.4: 378–90.
- V'žarova, Ž. 1970. The Slavs south of the Danube. In *I Międzynarodowy Kongres Archeologii Słowiańskiej. Warszawa, 14–18 IX 1965*, vol. 3, W. Hensel (ed.), 97–120. Wrocław.
- Waldron, H.A. 2001. Are plague pits of particular use to palaeoepidemiologists? *International Journal of Epidemiology* 30: 104–8.
- Wickham, Ch. 1984. The other transition: From the ancient world to feudalism. *Past and Present* 103: 3–36.
- Wiechmann, I. and G. Grupe 2005. Detection of *Yersinia pestis* DNA in two early medieval skeletal finds from Aschheim (Upper Bavaria, 6<sup>th</sup> century A.D.). *American Journal of Physical Anthropology* 126: 48–55.
- y'Edynak, G.J. 1976. A test of a migration hypothesis: Slavic movements into the Karst region of Yugoslavia. *Current Anthropology* 17.3: 413–28.
- Zhou, D., Y. Han, Y. Song, P. Huang and R. Yang 2004. Comparative and evolutionary genomics of *Yersinia pestis*. *Microbes and Infection* 6: 1226–34.