

# NATURAL DISASTERS FROM THE REIGN OF KING PEROZ IN “THE BOOK OF KINGS” AND THE “EXPLANATIONS OF THIS WORLD” AND THEIR IMPACT ON THE POLITICAL REALITY OF THE REGION

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## Introduction

The impact of climate change on human history cannot easily be overstated. Climate-related changes influenced migration process in antiquity and in the early Middle Ages what influenced sedentary communities and was reflected in the process of migration between the 3rd and 7th centuries AD. Climate influenced pre-industrial societies regarding crop cultivation and animal breeding, having an impact on wealth and ability to develop, both demographically and economically. It was the same when it comes to pressure of nomadic societies from the centre of Eurasia on the empires of oceanic peripheries: the Roman Empire, Sassanian Iran, and China. In many narrative sources from the epoch, aspects of inanimate nature are either omitted or explained through divine intervention. In the Mandaean chronicle, also known as *The Book of Kings*, events from 467–481 and 485–536 are described in detail. These events correspond to the reigns of the following Sassanid rulers: Peroz (459–484) (Daryaee, 2009, pp. 24–25; Daryaee & Rezakhani, 2016, pp. 37–38), Valash (484–488) (Daryaee, 2009, p. 25; Daryaee & Rezakhani, 2016, p. 38), and Zamasp (496–498) (Daryaee, 2009, p. 27; Daryaee & Rezakhani, 2016, p. 39), as well as Kawad I (488–496, 498–531) (Daryaee, 2009, pp. 26–28; Daryaee & Rezakhani, 2016, pp. 39–41). These rulers are also associated with the first period of the reign of Khosroes I (531–579) (Daryaee, 2009, pp. 28–30; Daryaee & Rezakhani, 2016, pp. 41–42). The events described are more related to daily life and meteorological disasters than to politics. The aim of this text is to highlight the correlation between natural disasters and other aspects of inanimate nature, as indicated in the Mandaean text, and their impact on politics in the Middle East. This will be achieved by comparing *The Book of Kings* with other mainly Oriental and Roman sources from the aforementioned epoch, as well as contemporary scholarly literature.

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## 1. The Years of Peroz's Reign

First of all, it is necessary to briefly describe the reign of King Peroz, which was overshadowed by the threat of the Hephthalites. The quick attacks of this warlike people, twenty years earlier, had mobilized the Sassanid king Yazdegerd II (438–457), who, at the end of the first half of the 5th century, clashed with them in defensive battles in northern Iran. The Hephthalites had viciously pushed other nomads out of Central Asia, which resulted in rapid transformations across the entire region. As early as 456, their deputation appeared at the Chinese court (Litvinsky, 1996, p. 138). It is possible that they reigned over the area from Khorasan to Chinese Turkestan (Potts, 2018, p. 292). The "White Huns" were so successful in invading Sassanid territories that, over time, they became a major problem for the empire (Procopius, *De Bellis*, I. 3. 1.). They settled in Bactria and Transoxania, leading their expansion eastwards to the Turfan Basin. After Yazdegerd II, troubles with the Hephthalites were left for his sons: Hormizd III (457–459) and Peroz (459–484) (Daryaee & Rezakhani, 2016, p. 38). The Ktesiphon court suffered militarily and, in the long run, faced infamous defeats. Fast and expert in their methods, the nomads destroyed troop after troop of heavy Iranian cavalry. Although the Hephthalites are described as excellent archers, contemporaries indicate that the sword was their basic weapon (Litvinsky, 1996, p. 139).

Peroz already had experience fighting nomads before he battled the Hephthalites. Previously, he had won against the Kidarites, who were still grazing their flocks in the eastern regions of the empire, probably in 467 or 468 (Potts, 2018, p. 294). The reason for the nomads seeking new pastures may have been the catastrophic drought during this period. The Mandaean Book of Kings clearly indicates that, from the eighth year of Peroz's reign, drought affected the entire Sassanian empire: "When the world begins year 790, from then on water is lacking, and the whole world is in trouble. The gods and those who govern years, months, and humanity show all kinds of signs, that place and to the world, and trouble comes to the world. (III, AP 790)" (Book of Kings, III, AP 790).

With changing fortune, the king began to fight with Hephthalites. One can state that it was not easy to gather feed for an expedition against aggressive Huns. In 472 or 474, Peroz even became a hostage of the nomads and was forced to pay them tribute, as well as give them lands which they could use to graze their herds and collect tribute from farmers (Litvinsky, 1996, p. 139). The Peroze's defeat was scrupulously recorded by The Book of Kings, which states that the King of Babylon lost his sovereignty (III, AP 795). The Mandaean chronicle clearly indicates the date when the ruler was imprisoned and calls him King of Babylon, which is not an accidental term but refers to the titularity of the rulers of Babylon, which had been part of the titularity of the Iranian monarchs since the time of Cyrus. It is

also worth mentioning that the information about the imprisonment of the King of Babylon is the only evidence of the continuity of this title in the period after the death of the last of the Arsacids. The Mandaean work also states that Peroz lost in battle with the Turanians - Tūr. The use of this term is quite common in Iranian sources. In Persian culture Turanians were synonymous with Asian nomads, which is what the Hephthalites were after all. In Iranian tradition, the world was divided between the sons of the mythical good king Feridun. Shaname tells that his son Salam became the ruler of the West, Tur received the wild Turan and China, and Iraj received Iran (Ferdowsi/Davis, pp. 36-37).

The information from *The Book of Kings* should be compared with Procopius's text. The Roman historian even provides us with details about Peroz's tribute (Procopius, *De Bellis*, I. 3. 22). The ancient author also emphasizes that only after this specific act of submission could the king and his entourage go free.

*The Book of Kings* also mentions that during the drought (467–469) and a shamal – a hot, dry wind blowing from the north and northwest, which appears periodically in areas of southern Mesopotamia and the Persian Gulf (III, 791). It is possible that the mentioned drought in *The Book of Kings*, described by the chronicler, and the shamal reflected a climate disaster deep in Eurasia, which caused the migration of the Huns to the west and south. At this point, it is worth noting that the amount of precipitation across Central Asia is dependent on the antipaths, meaning the air masses in the middle latitudes (Harper, 2021, p. 216). These, in turn, are dependent on the North Atlantic Oscillation – when the western jet stream flows northwards less frequently, and the steppe becomes dry. As a result, Central Asia turns into an inhospitable wasteland. Ed Cook's climate studies, cited by Harper in his historical reflections, indicate that in the second half of the 4th century, between 350 and 370, Central Asia experienced the worst drought in the history of the last two thousand years (Harper, 2021, p. 216). What is written in *The Book of Kings* is not an ordinary summer drought. As stated earlier, Peroz was forced to confront the Hephthalites, who were grazing their flocks on Sassanian lands. They were thus compelled to push systematically into Iran's eastern lands, as they had already lost their own pastures. The battles with the nomads and the protection of the vast eastern stretches of the Iranian empire drew Peroz and his successors' full attention, exacerbating tensions in relations with the Roman Empire.

*The Book of Kings* points out that the earth in the earthquake of 471 shook three times during the day and once at night. However, the author of the chronicle does not indicate any direct connections between the earthquake and the earlier events of the Arabs' attacks on Sassanian lands (III, AP 794). The earthquake is neither an anecdotal cycle of misfortunes nor an allegory. Marcellinus Comes wrote precisely about this earthquake, pointing out that Asia was shaken by a powerful

earthquake during the Marcian and Festus consulship – between September 1, IX 471 and August 31, 472 (Marcellinus Comes, 472). Marcellinus emphasizes that the earthquake destroyed a number of cities and villages (Marcellinus Comes, 472). The earthquake must have been widely recognized due to the number of shakes repeated at several intervals during one day, which is clearly mentioned in the author's description. The effects of the shakes were so serious that they likely shielded, most probably anachronistic, revelations about Arab invasions. Scholars assume that the work was written later than the text indicates. The narrative is related to the Arab invasions of Iranian land in the west of the empire, particularly in the southern part of the Arabian Peninsula. The Arab population, which battled against Sassanian possessions, was connected with the Gassanid tribal confederation, who were allied with Constantinople. Tribes subordinate to the Gassanids inhabited several "urban" areas within the eastern Empire: the Golan Heights region, Djiliq, and al-Kiswa near Damascus (Wolińska, 2023, p. 483).

The catastrophic drought and earthquake, as well as serious perturbations in the conflict with nomads on the far borders of Iran, did not encourage aggressive moves against the Romans. An 'armed peace' continues throughout the extremely long border area stretching from the Caucasus, through the deserts and semi-deserts of Syria and the Arabian Peninsula to the sensitive Red Sea region only interrupted by endless tensions of proxy wars in the region of Georgian monarchies, Armenia and between desert tribes. The fear of nomads, which affected both warring empires, was additionally deepened by earlier natural disasters. It seems that peaceful solutions from the times of Wahram V 420-438 and Theodosius II 408-450 from the years 422 and 441/442 were durable. These facts are accurately referred to by Dignas and Winter:

*"Regardless of the exact time limit, the peace that was concluded between Bahrām V and Theodosius II in 422 I 441 introduced a long peaceful period between both empires; this lasted until the beginning of the sixth century, when Kavādh I began to reform the Sasanian monarchy and reopened war against Byzantium."* (Dignas, Winter, 2007, p. 138).

The early 70s of the 5th century may be characterised by bad harvests due to low rainfall. The Book of Kings clearly states, under the entry for the year 474, that the disasters affected both people and animals and that the population of cities also decreased. This year also saw catastrophic hailstorms, which were so heavy that they affected livestock (III, AP 796). The description of the catastrophe, recognised by humans and animals alike, is also a fairly good explanation of why, in the Middle East, prevailed peace between the superpowers.

Subsequent chronicler entries are not directly related to climate change or other factors originating from inanimate nature, but they do explain the ongoing détente on the Roman-Sasanian border. The Book of Kings indicates: "[...] two

rulers sport with another, and they sport with horses and man.” (III, AP 797). The Mandaeans, like many other peoples and communities of the Middle East, successfully understood the intricacies of both Roman and Iranian politics. The two rulers are the power-disputing dignitaries from Constantinople: Zeno the Isaurian, who reigned in 474-475 and 476-491, and Basiliscus, the usurper of 476. Zeno reigned on behalf of Leo II’s minor son, but he was not particularly popular either among the senatorial elites, or among the common people because of his ethnic origin (Bury, 1958, p. 389). Zeno was an Isaurian. These mountain people from the mountainous interior of Asia Minor were indeed respected for their courage and service to the imperial army, but they had a reputation as “internal barbarians” who, despite having lived within the Empire’s borders for centuries, still manifested uncivilised behaviour. Because of that, after a few months, Basiliscus, the brother of Zeno’s mother-in-law, Empress Verina, rose up against him (Marcellinus Comes, p. 475). Basiliscus was just an instrument in the hands of his ambitious sister. He himself did not manifest any special political or military skills. The 468 expedition he led against the Vandals ended up in a spectacular defeat of the Eastern Roman fleet (Campbell, 2015, p. 245).

Zeno’s escape from Constantinople in early January 475 and the pursuit of Basiliscus’ men after the legitimate emperor and his Isaurian entourage are reflected in the aforementioned entry in *The Book of Kings*. The next date also relates the mentioned events. The death of one of the abovementioned “rulers” may be interpreted as the death of the defeated Basiliscus and his family after Zeno’s victory (III, AP 798).

In the remaining fragments of *The Book of Kings* we see quite clearly that the natural disasters of Peroz’s reign, which definitely influenced his foreign policy, are interwoven with issues concerning his struggles with nomads. In the mentality of the Mandaean chronicler, there is no great difference between floods and earthquake destruction and nomadic invasions from which there was no escape. Unfortunately, we cannot compare these passages with considerations concerning the struggles with Rome because they have not been preserved. Confrontations with nomads take on almost apocalyptic extent and indicate the great significance of the migration pressure generated by nomads for sedentary communities. It is worth quoting here a fragment that in indirect way describes the catastrophe of Peroz in 484 and his tragic death:

*“Concerning the world begins year 800, it is indicated that the horses and men in the entire world, from the biggest to the smallest, come to a plain and to a single spot in the whole world, until it became levelled flat. Then, he desires them greatly, and there is the white conflict.” (III, AP 800).*

The description itself is so general that it is possible to undoubtedly indicate which event refers to relations between Sassanids and the nomads. A fairly specific

clue that allows us to assign the events to issues related to the migration pressure of the Hephthalites on Iran is certainly the term "white conflict". Hephthalites were called the White Huns. The primary source that quite precisely explains the ethnic distinctiveness of the Hephthalites from the rest of the Huns with its rather detailed description is the narrative of Procopius of Caesarea, who clearly describes the differences between White Huns and their cousins in other parts of Eurasia. The Roman historian description of the ethnographic details is very precise in terms of the way of life of the White Huns, which was supposed to differ significantly from the customs of the Huns who were known to Romans in Europe. However, it is not certain that the description of the Caesarean was not created in a way to meet the needs of the Roman recipient and is not artificially different from the customs of the other Huns. The Hephthalite difference, at least in terms of ethnonym, may have quite interesting roots:

*"But the use the term White Huns has prompte scholars to connect the term with their mention in other sources. Among these is the Middle Persian apocalyptic text Zand ī Wahman Yasn 4.58-9, where the Spēd Xyōn is set apart from Karmīr Hyōn and those simply called Xyōn."* (Rezakhani, 2017, p. 136).

The empire's devastating battles with nomadic confederations in the east were problematic for the Sassanids themselves insofar because they involved large forces and resources to maintain areas of poor economic importance. It is worth noting that the geographical environment of the areas of present-day Iran and Afghanistan is difficult for permanent habitation. Vast area originating from the Alpine orogeny is characterized by a difficult climate, which must have been much gentler for nomads arriving from central Eurasia than the one that was created as a result of the anomaly associated with the northern circulation of Atlantic air masses. Large areas of the difficult-to-communicate area are dominated by deserts and semi-deserts. An additional difficulty for any community, especially in the pre-industrial era, is the dominance of rivers with high differences in water levels between seasons. This means that such rivers are not convenient communication arteries and, unlike the great rivers of Central Asia: the Amur-Ddary and the Syr-Ddary, they cannot constitute an axis of trade or a base for building a settlement and fortification system (Sińczak, 2022, p. 45). The mountainous areas of Iran are not considered to be a good place for agriculture. For most of the year these regions are quite dry. Huge air masses block young and high mountain ranges. Temperature amplitudes are not particularly oppressive, but quite high. In lowland areas these amplitudes range from 2°C to 30°C, and in mountainous areas from -7°C to 25°C (Sińczak, 2022, p. 45). As a result we get place with poor harvest, but with a little rainfall it can be used as pastures for livestock.

The costs of maintaining very often unreal power over the eastern regions

of the Sasanian Empire were very high and rather disproportionate to potential benefits. Climatic breakdown related to changes in air circulation, additionally made the region even less economically attractive. However, subsequent passages from The Book of Kings reassure that tragic events in the east spread throughout the empire. In the period sources, however, it is difficult to find a deeper reflection on the enormous effort put in by the Sassanid monarchs and the possible gains that could justify this effort. The scale of Sassanid involvement in the east grew from the time of the first monarchs of this dynasty and over time it was bigger and bigger. When describing effects of climatic changes described by the Mandaean Chronicle on politics in the region, it is worth citing the opinion of Daniel Potts, who carefully analysed the process of evolution of the conflict between Iran and nomads, the tragic consequences of which reached Peroz I:

*“Nor do we know how substantial the revenue stream in tax and tribute that flowed from the eastern domains may have been. The overriding impression is that the Sasanians were loath to renounce any territorial claim bequeathed to them by their founders. The costs of their retention, however, were terrible, borne by nearly every king who sat on the Sasanian throne”* (Potts, 2018, p. 301).

Despite the facts obvious to contemporary analysts, the east borderlands were for Sassanids an element of their ancestral heritage that they could not abandon. The Sassanid presence in eastern Iran and in the inhospitable regions of Central Asia was not a new phenomenon in the 5th century. It is worth noting that the east of the former Parthian state had already been conquered by the founder of the dynasty, Ardashir I, who effectively marked his presence in the east with numerous coin issuance emphasising the scope of his conquest (Potts, 2018, p. 287).

It should also be noted that the defeat of Peroz, widely described in various sources, emphasises significance of the scale of the disaster. The Book of Kings in quoted before fragments indicates that the conflict recurred at intervals of several years. We can therefore assume that the recurring problems with nomads resulted from their own growing migration pressure. It is worth noting, however, that the last tragic in consequences for Peroz’s division of fights resulted from earlier breach of truce, or peace treaty, with Hephthalites (Walker, 2018, p. 253).

Peroz wanted to take revenge for his earlier humiliation and captivity. Contemporarily scholars agree that Iran three times attacked the East during Peroz’s reign. It is sometimes pointed out that not all of the king’s campaigns were against the Hephthalites. It is possible that the first struggles, “inherited” from his predecessors, were against other Asian nomads – the Kidarites (Potts, 2018, p. 293).

The defeat of Peroz, indicated in the text of The Book of Kings, had a huge

significance for the entire Iranian society of that time. Noting it in the Chronicle, which was written in the environment of Mesopotamian gnosis and was hundreds of kilometres away from the place of events, is the best proof of what happened. Peter Brown writes with great emphasis about the tragedy of Peroz and his army, and in the longer perspective, of the entire ruling house:

*"In the late fifth century, however, the traditionalist world of the Iranian plateau collapsed, and Mesopotamia came into its own. After seven years of famine, the shah Firūz (459-84) was killed with his whole army in a rash campaign against the Hephthalite Huns. The "Famine Days of Firūz", and the total defeat of Persia by the nomads of Central Asia, were remembered as the worst tragedy in Persian history before the Arab invasion. It was the end of the Iranian ancient régime."* (Brown, 2022, p.165).

Also in contemporary history the awareness of significance of Peroz's struggle against migration pressure is emphasised. Adrian Goldsworthy, in his extensive work on the history of relations between Rome and Iran in antiquity, points out that the Sassanid king did much to secure the border with nomads (Goldsworthy, 2023, pp. 92–393). However, he could not effectively control the migration pressure caused by climate abnormalities. Central Asia became too crowded to provide a satisfactory home for all its residents. The king tried to counteract migration and settlement of nomads by building huge line of fortifications called The Gorgan Wall. However, by breaking fragile peace with Hephthalites, he found himself in a clash he could not win:

*"His offensive may have been launched from it, perhaps even using in more of the campaign bases as the starting point. Like other Arsacids and Sasanians – and indeed the Achaemenid Cyrus the Great - Peroz paid the price for underestimating the skill of nomadic warriors"* (Goldsworthy, 2023, pp. 393).

Finally, it is worth emphasising that the fall of Peroz and his entire entourage in a tragic attempt to regain lost prestige initiated a long period of turmoil in the entire Sasanian Empire. Zeev Rubin very accurately pointed out that the defeat of Peroz caused a period of "dynastic weakness" in Iran (Rubin, 2012, pp. 137). It is clear that the process of Central Asia's becoming unfruitful caused by the change in the movement of air masses from the Atlantic region influenced the increase in migration pressure on settled communities across Eurasia. The 5th century and the period of Shah Peroz's reign are perfect examples of abovementioned. The chronicle analysed in this text indicates a whole series of events related to the effects of inanimate and animate nature, which influenced the Sassanid policy in considered period. It is clear that problems with nomads and a number of other perturbations caused good relations between Rome and Iran. The entire Sassanid effort was directed towards tries to maintain control over their possessions in

the East. During the reign of Peroz's successors, it is clear that the correlation between problems caused by climatic factors and natural disasters also had an impact on geopolitical situation in the entire region. Maintaining the vast land in the East meant for the court in Ctesiphon enormous expenditures of effort and resources. Climatic factors effectively influenced the entire complex system of interdependencies between states that dominated the geopolitical landscape of the Near East in the period of late antiquity.

## **2. The Reign of Peroz's Successors**

When it comes to what happened after 484, the preserved fragments are very enigmatic, but they indicate two extremely important events that influenced history of the Middle East during this period - Mesopotamian flood in 485 and the plague which began in 540.

The flood of 485 that devastated Mesopotamia was a powerful blow against Sasanian Empire, because they had to struggle with the undesirable consequences of the defeat of Peroz I in 484. One of the surviving brothers, Valas (Rania, 2022, p. 12), took over the reign of the king who had been killed by the Hephthalites. His reign, although it consigned to history as a peaceful one, was focused on counteracting the crises he inherited from his brother. He reigned for only four years before being dethroned, although we do not know the details that led to these events. The Arab historian al-Yaqubi records a four-year reign of Peroz I's brother and indicates the succession problem which arose after the death of the Sassanid (Yaqubi, p. 185).

The flood and the Hephthalite domination also created space for further usurpations, as the authority of the central government was undermined (Rawlinson, 2019, pp. 114–115). The flood raging in the west of the state destroyed areas that had effectively constituted the material base of Sassanid Iran for years. Mesopotamia was the centre of agriculture and important trade centres, which from the beginning of the New Persian monarchy constituted a significant source of revenue for the royal treasury. When Valas ascended the throne, the state was in a difficult situation. Eastern provinces were in fact left without any control of the royal troops and constituted a kind of material base for the Hephthalite confederation. On the other hand, the western provinces, the most valuable from an economic point of view and at the same time a barrier against the Roman troops, were destroyed by the flood. It was a great loss. The Mesopotamian region was well connected with other parts of the world at that time. This part of the Middle East was an impressive part of the Silk Roads that ran from the Far East to the Mediterranean region (Sińczak, 2022, p. 43). From this point of view, the entire Middle Eastern economy in which Sassanid Iran was involved had to be questioned. When analysing the geography of the region, one cannot ignore the

economic issue, which was the basis of the dispute between Sassanid Iran and the Roman Empire from the moment this Iranian dynasty came to power on the Iranian Plateau in 226. Control over trade routes was an object of interest in both Constantinople and Ctesiphon. Control over trade routes was an object of interest in both Constantinople and Ctesiphon. Spices, textiles, jewellery and pottery, and other luxury goods imported from Southeast Asia, the islands of the Indian Ocean, including ports in Ceylon, ports in the West Indies, and partly also from the Arabian Peninsula, reached Roman markets and were the object of interest of all merchant communities in the Middle East (Sińczak, 2022, p. 45).

Peter Brown visibly indicates economic importance of Mesopotamia, placing it in broad context of changes shaping the entire Mediterranean and Middle East region in late antiquity. The British historian emphasises the importance of Mesopotamia as manufacturing centre, a place of intellectual ferment, and also an important centre of the evolution of late antique culture (Brown, 2022, p. 164). Because of the catastrophic flood, which was probably directly related to a weather anomaly that affected the political situation in the region, his opinion on the economic strength of this Iranian possession is worth considering:

"Mesopotamia, however, was the economic heart of the Persian empire. The shahs derived two-fifths of their revenues from it. Here was an ancient urban society that provided the skills on which the court depended." (Brown, 2022, p. 164).

The last piece of information in *The Book of Kings* relevant from the point of view of political history and directly related to climate change is the quite clearly stated plague problem. The chronicler points to the abovementioned:

Concerning it, it is indicated that an anti-Christ comes and becomes lord of the whole world, and he sits upon a great throne and on it passes judgment to remove the judges. He comes from the east to the west in a single day and even the brick in the wall bears witness to him. When it is in year 850 in Pisces, there is the Great Plague. (III, AP 850).

The great plague outbreak in 540 and became a critical point during the reign of Emperor Justinian I, who reigned from 527 to 565, and because of that it is sometimes called the "plague of Justinian". In the Iranian world, it is associated with the reign of Khosroes I (Rania, 2022, p. 12). Regardless the context associated with the establishment in certain cultural circles, it constituted ground-breaking importance for the entire inhabited Eurasia.

The direct cause of the plague's success in the natural environment was its ability to inhabit the bodies of new hosts. Originally, plague did not spread from species to species. As a result of evolution, the disease transmitted to humans but without causing symptoms worse than stomach flu which is verified by archaeological

excavations from the northern and north-eastern parts of Eurasia dating back to 53,000 BC. It was only then that the bacterium *Yersinia pestis* became extremely dangerous for humans (Harper, 2021, p. 235). Ultimately, the plague bacterium poorly embedded in digestive system and was unable to compete with human immune system. The situation changed with the modification of some plague bacterium ability to produce a biofilm that caused the flea's digestive system to be blocked as it sought a way into the mammalian body. Arthropods could not obtain nutritional substances from their own digestive system and as a result bit new potential feeders in an attempt to obtain food (Harper, 2021, p. 235). Fleas, found on rats that were their carriers, spread plague across continents. A fairly clear signal that infection was not transmitted to humans through inhalation or via oral-fecal way, as in the case of the original forms of plague that humans had contact with, is the fact that historical sources repeatedly report buboes appearing all over the body. These were nothing more than swollen lymph nodes infected with bacteria. The presence of plague in the lymph nodes indicates that infection occurred through the dermis - therefore through a flea bite (Harper, 2021, p. 236).

Ships carrying goods made long journeys, often longer and more complex than estimated today. Roman merchants successfully penetrated the world of Orient from the time of the early Empire, while Iranian merchants and those representing many other cultures of the Indian Ocean basin countries reached the farthest areas of Roman Europe. Roman coinage is quite common in archaeological findings discovered in western regions of Indian Peninsula and in Ceylon. Wherever traders arrived, so did rats having fleas in whose infected digestive systems lived plague. Ships were kind of floating platforms on which in good conditions developed subsequent litters of infected rats. It should be noted that rats thrive on a ship, where its direct biological enemies do not exist, meaning: Birds of prey, owls, cats and small predatory mammals. In fact, the only limit for its population, which thrives on stores gathered by sailors, is the plague. A female rat is able to give birth to up to five litters, which ends a short, four-week pregnancy. The young are themselves able to achieve reproductive capacity four to five months after birth. Although we know much on how the plague spread throughout late antique world, we cannot determine what caused that the plague, which had been so comfortable in rodents, started to be transmitted via fleas to humans, who were its indirect carriers. The second issue that requires further consideration is climate change, which caused rats carrying plague-infected fleas to leave their original habitats and, together with Asian sailors, set off on a long journey to the south, and later also to the west. The aforementioned anomaly related to occurrence of drought in regions of Central Asia, and in a broader perspective the entire region of the Great Steppe which may be related to the migration of plague. Although rats themselves are omnivores, their first food choice is grain. It is possible that

the process of rapid desertification of the Great Steppe areas, which took place in the second half of the 5th century AD, also affected relations between rats and plague. From research conducted on human skeletons excavated in many northern areas of Eurasia dating back to 55 thousand years BC, we can see that the relations between plague bacillus and humans were not associated with high mortality.

However, the changes were quite dynamic. In the second half of the 5th century huge areas of Central Asia underwent rapid desertification and in the 30s of the 6th century the air circulation changed. The changes and rapid cooling were related to high volcanic activity in Southeast Asia (Harper, 2021, p. 246). Powerful volcanic eruptions caused the upper layers of the atmosphere to spread dust and dirt, obscuring the sun's rise. The period of 536 and 540-541 can be called a volcanic winter, which affected crops and cultivation of vast areas of Eurasia. Therefore, rodents, which were the original carriers of plague, began to search for new habitats. Currently in western China are being located the original habitats of marmots and gerbils, which could have been original carriers of plague. The change in Atlantic circulation pattern caused flooding of their burrows. The previously dry steppe, the same one that was so inhospitable to nomadic tribes that had lived there for hundreds of years, in the 5th century became an exceptionally fertile transfer field for many species migrating south or southwest (Harper, 2021, p. 246). These explanations should be sufficient to explain reasons for rapid transfer of plague from natural habitat to Atlantic coast. The vast amount of data concerning plague pandemic in the Eastern Roman Empire and post-Roman successor states in the west of the continent may prompt further research. In the source analysed so far, the mention of plague concerns the areas of the Sasanian Empire that were inhabited by Madei communities. In the first years of the pandemic (541 or 542) plague probably reached Iran from the Empire spreading quickly throughout interior. The astonishing ability of the plague bacterium was the ability to move with carrier from the coastal areas into the desert. This was of course related to the adaptability of the black rat itself, but the plague bacilli were quite adept at finding new carriers, similarly to fleas, which, after the plague killed rat carriers, transferred to humans and other mammals. Characteristic symptoms of bubonic plague brought panic and terror. However, in the Sassanid lands, high temperatures were an ally in the fight against the plague. Plague bacilli do not thrive in conditions of very severe winters and dry hot summers. It is worth noting that the desert interior of Sassanid lands is characterized by exceptional heat, which probably blocked the development of bacteria. Dry and hot days in Syrian Desert, the Arabian Peninsula, or in the regions of Sistan far from Mesopotamia hindered the development of the pandemic.

The pandemic, which spread rapidly in the coastal part of the eastern

Roman Empire, was spread by merchants and the entire complex grain transport system, which was like the bloodstream in the Roman part of the Middle East. We know the name of several cities that were affected by the plague and which could successfully serve to transport infected rats to Iran: Alexandria, Jerusalem, Emessa Antiochia, Apamea, Aphrodisias, and Myra (Harper, 2021, p. 256). Antioch used to be both a major port and undoubtedly informal capital of Roman Syria (McEvedy, 2019, pp. 19 - 21). To Antioch headed caravans from all over Mesopotamia, Asia Minor and Palestine. The population experienced both plague and the recurrences of the pandemic later on. It is worth noting that although the plague initially migrated from the East to the West, the plague moved later with the army from Constantinople towards Sassanid border. The population of Antioch was thus repeatedly affected and unknowingly responsible for “sending” the plague to Sassanid Iran. In the Empire - Antioch constituted an important urban centre famous all over the Near East for craftsmen and architects who were then abducted by Shah Khosroes I to Ctesiphon in 540. If they had contact with the survivors of Khosroes I’s murders and tried to visit them, they contributed greatly to spread of the plague.

Political changes fostered transmission of disease and all news on climate changes that affected human life. Along with the gradual atrophy of Iran and the Eastern Roman Empire, Arab tribes grew stronger, eventually creating the first Caliphate – the Muslim Empire which developed new networks, causing that our knowledge of following disasters related to the action of inanimate and animate natural forces become more and more common.

### **Consilium**

Summing up, it can be noted that the changes in natural environment that took place in the second half of the 5th century and in the first half of the 6th century had a major impact on the geopolitical environment of the Middle East and even the whole of Central Asia. As a result, it is clear that air circulation anomalies influenced the increase in migration pressure on the sedentary communities of Eurasia. The rapidity with which the steppe and later desertification of Central Asia progressed can be seen in the rapid progress of the Hephthalite settlement on the eastern borders of Iran. The climatic disaster resulting in migrations marked the entire period of Shah Peroz’s reign. In the period immediately following his death, Iran entered a distinct period of turbulence, both in the dynastic and economic sense. In *The Book of Kings*, the time after Peroz’s death is marked by a massive flood and the horror of the plague.

In the analysed source, over the course of 74 years, direct impact of climate and environmental changes on the policies of the great powers can be observed, and in the longer term also on their economic development and the macroeconomics

of the entire region. Following the narrative in the analysed source, we can clearly see that subsequent negative events related to climate, or broadly understood inanimate nature, are close to each other. The drought of 467-469, identified as a probable offshoot of the great droughts from Central Asia, correlates with a period of long peace on the Roman-Sassanid border and interweaves with Peroz's struggles against Hephthalites in the east of the Empire. Peroz's humiliation during the struggles against nomads caused in his decision to battle against them. At this point it should be emphasised that in the text I noted, following contemporary analysts, that the idea of maintaining the eastern areas of Iran was related to the desire to maintain, if not the borders, then at least the areas of influence that the first Sassanids designated on the eastern and northeastern vectors of their interaction with the outside world. Peroz did not so much pursue his unfulfilled ambitions as guard the legacy of his ancestors, and this was one of the basic dogmas of the Sassanid foreign policy. From the book we also learn about the catastrophic earthquake that hit the Near East in 471. This fact is confirmed by Marcellinus Comes' source. In addition, we can clearly see that in the period after this natural disaster there were no battles with the Romans. The cataclysm equally affected both sides of the border. At the turn of the 60s and 70s, the author of the chronicle mentions the invasions of Arab tribes on Iranian possessions, but he does not connect this with the activities of their Roman protectors, nor with other events that probably prompted them to leave their original homes. In the 5th century, the tribes and tribal confederations of Arab mercenaries are not, however, powerless and completely independent structures, but rather executors of the will of their principals in Constantinople and Ctesiphon. The changes in the behaviour of the nomads of the Arabian Peninsula could have been related to climate change, but neither the analysed source, nor the others used to write this text provide even a hint that could indicate that the nomads left their settlements in the immediate vicinity of the Arabian Peninsula for reasons other than the tasks related to protecting the borders of their powerful principals. Next, we can see that the writer of the book had a fairly good orientation in politics outside the borders of the Sassanian Empire, because he quite clearly indicates events related to the usurpation of Basiliscus and his battle against Zeno. In addition, we can also see that the battles with the Hephthalites accelerated and the chronicle indicates problems with terrible losses in people in the east. After Peroz's fall, the surviving fragments of the chronicle clearly focus on individual events, including the flood at the beginning of Zamaspes' reign and the plague epidemic. Both events from 484 and 541 respectively are described in detail in this text, indicating their causes and effects on the geopolitics of the region. Interestingly, despite the terrible losses caused by the plague pandemic, the conflict between Justinian I and Shah Khosroes in the 440s of the 6th century accelerated and was soon to turn into a permanent war that would spread across all the Middle East.

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