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EFFECT OF GEOGRAPHY ON THE SPREAD OF EPIDEMIC DISEASES: PLAGUE OUTBREAK IN ANZOB IN SAMARCAND PROVINCE (1898)*

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Abstract

Throughout the 19th century, epidemics such as cholera, plague, and influenza emerged in Asia and, exhibiting pandemic characteristics, spread to Africa, Europe, and America. These outbreaks were facilitated by trade routes, wars, migrations, and expanding transportation networks, affecting vast geographical regions. The plague outbreak that began in China in 1893 rapidly spread through trade networks and human mobility, reaching other territories. By 1896, it had caused a major crisis in Bombay, a densely populated commercial hub. The plague, which caused the loss of thousands of lives in the city, was not confined to India and evolved into a global pandemic. By the late 19th century, the plague also made its presence felt in the region of Turkestan and became a significant threat. Epidemics in various regions resulted in high mortality rates, profoundly impacting societies and compelling administrative authorities to implement diverse public health policies. In response, quarantine measures, local health interventions, and medical treatments gained increasing importance in disease control efforts. Within this context, the bubonic plague outbreak that occurred in 1898 in Anzob, a village in the Samarkand Province, holds significance both in terms of the region's geographical conditions and the interventions of the Russian administration. Anzob, an isolated and mountainous village, exhibited distinct patterns of disease transmission due to its settlement structure, limited transportation routes, and climatic conditions. The Russian government's efforts to control the outbreak included strict quarantine measures, the isolation of infected areas, and the implementation of public health regulations, all of which played a crucial role in containing the disease. This study examines the bubonic plague outbreak in Anzob within the framework of the relationship between geography and the spread of infectious diseases, focusing on the measures taken to mitigate the epidemic. Furthermore, it explores the role of geographical factors in shaping the trajectory of the disease, the influence of environmental conditions on epidemic control, and the effectiveness of the Russian administration's public health policies.

Keywords: Russian history, Russian Empire, Turkestan, Samarcand, epidemic disease, Anzob, plague.

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SALGIN HASTALIKLARIN YAYILMASINDA COĞRAFYANIN ETKİSİ: SEMERKANT VİLAYETİNDEKİ ANZAB'DA VEBA SALGINI (1898)

Öz

19. yüzyıl boyunca Asya'da patlak veren kolera, veba ve grip gibi salgın hastalıklar, pandemik özellikler göstererek Afrika, Avrupa ve Amerika kıtalarına kadar yayıldı. Bu salgınlar, ticaret yolları, savaşlar, göçler ve gelişen ulaşım ağları sayesinde geniş bir coğrafyada etkili oldu. 1893 yılında Çin'de başlayan veba salgını, hızla yayılarak bölgedeki ticaret yolları ve insan hareketliliği aracılığıyla diğer bölgelere ulaştı. 1896 yılına gelindiğinde, özellikle yoğun nüfuslu ve ticari merkez konumundaki Bombay'da büyük bir krize neden oldu. Şehirde binlerce insanın hayatını kaybetmesine yol açan vebanın etkisi yalnızca Hindistan ile sınırlı kalmayıp küresel bir salgına dönüştü. 19. yüzyılın sonlarında veba, Türkistan sahasında da etkisini gösterdi ve büyük bir tehdit hâline geldi. Çeşitli bölgelerde ortaya çıkan salgın hastalıklar, yüksek ölüm oranlarına yol açarak toplumları derinden etkiledi ve idari yönetimleri çeşitli sağlık politikalarını uygulamak zorunda bıraktı. Salgınların kontrol altına alınması için karantina uygulamaları, yerel sağlık tedbirleri ve tıbbi müdahaleler giderek daha fazla önem kazandı. Bu çerçevede, 1898 yılında Semerkand Vilayeti'ne bağlı Anzab'da ortaya çıkan hıyarcıklı veba salgını hem bölgenin coğrafi yapısı hem de Rus hükümetinin müdahaleleri açısından dikkate değerdir. Coğrafi olarak izole ve dağlık bir köy olan Anzab'da hastalığın yayılma dinamikleri, yerleşim yapısı, ulaşım yollarının kısıtlılığı ve iklim koşulları gibi faktörler nedeniyle diğer bölgelere kıyasla farklılık göstermiştir. Salgının kontrol altına alınmasında Rus hükümetinin uyguladığı karantina tedbirleri, enfekte olan bölgelerin tecrit edilmesi ve halk sağlığına yönelik alınan önlemler belirleyici olmuştur. Bu çalışmada, salgın hastalıkların yayılımında coğrafyanın etkisi bağlamında Anzab'da ortaya çıkan hıyarcıklı veba salgını ve bu salgına karşı alınan önlemler ele alınmaktadır. Ayrıca, coğrafi koşulların hastalığın seyri ve salgın yönetimi üzerindeki etkisi ve Rus hükümetinin uyguladığı sağlık politikalarının etkinliği çalışmanın diğer üzerinde duracağı hususlardandır.

Anahtar kelimeler: Rusya tarihi, Rusya İmparatorluğu, Türkistan, Semerkand, salgın hastalık, Anzab, veba.

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ВЛИЯНИЕ ГЕОГРАФИИ НА РАСПРОСТРАНЕНИЕ ЭПИДЕМИЧЕСКИХ ЗАБОЛЕВАНИЙ: ВСПЫШКА ЧУМЫ В АНЗАБЕ САМАРКАНДСКОЙ ОБЛАСТИ (1898)

Аннотация

На протяжении XIX века эпидемии таких заболеваний, как холера, чума и грипп, возникшие в Азии, приобрели пандемический характер и распространились на Африку, Европу и Америку. Эти вспышки, обусловленные торговыми путями, войнами, миграциями и развитием транспортных сетей, охватили обширные географические регионы. Эпидемия чумы, начавшаяся в Китае в 1893 году, быстро распространилась через торговые пути и перемещения людей, достигнув других территорий. К 1896 году она вызвала крупный кризис в Бомбее, густонаселённом и важном торговом центре. Чума, унесшая жизни тысяч людей в городе, не ограничилась Индией и переросла в глобальную пандемию. К концу XIX века чума также затронула регион Туркестана, став серьезной угрозой. Эпидемии в разных регионах приводили к высокому уровню смертности, оказывая глубокое влияние на общества и вынуждая административные власти внедрять разнообразные меры в области общественного здравоохранения. В

ответ на это карантинные меры, местные санитарные мероприятия и медицинские вмешательства приобрели все большее значение в усилиях по контролю над заболеваниями. В этом контексте вспышка бубонной чумы, произошедшая в 1898 году в Анзабе, деревне в Самаркандской области, имеет важное значение как с точки зрения географических условий региона, так и вмешательств российского правительства. Анзаб, изолированная горная деревня, демонстрировала уникальные модели распространения заболевания из-за своей структуры поселения, ограниченных транспортных маршрутов и климатических условий. Усилия российского правительства по контролю над вспышкой включали строгие карантинные меры, изоляцию зараженных районов и внедрение правил общественного здравоохранения, что сыграло ключевую роль в локализации и сдерживании болезни. В данном исследовании рассматривается вспышка бубонной чумы в Анзабе в рамках влияния географии на распространение эпидемических заболеваний, уделяя особое внимание мерам, принятым для смягчения последствий эпидемии. Кроме того, исследуется роль географических условий в формировании течения болезни и управлении эпидемией, а также эффективность политики российского правительства в области здравоохранения.

Ключевые слова: История России, Российская империя, Туркестан, Самарканд, эпидемические заболевания, Анзаб, чума.

Introduction

Throughout history, epidemics have had significant social, economic and political impacts, resulting in large-scale population losses, social fear and disruption of order, religious and cultural transformations, economic crises and reshaping of political structures. Among these diseases, smallpox, yellow fever, typhoid fever, malaria, syphilis, typhus and measles remained epidemic despite causing the deaths of many people, while plague, cholera and influenza diseases showed pandemic characteristics and had a wider impact.[1] In addition to the type of disease, the increase in transportation facilities, trade caravans, the movements of large armies and the movements of crowded groups such as pilgrimage groups have also been effective in the expansion of the spread of epidemics.[2]

Bubonic plague emerged as an epidemic that affected Africa, Asia and Europe throughout history. With symptoms such as high fever, delirium, spots on most of the body, spitting up blood and blisters on the lymph nodes, the disease affected a significant proportion of the European population throughout history. In the 16th and 17th centuries, the plague caused great losses in cities such as Lyon, Naples and London, and in the 18th century it caused severe outbreaks in Marseille and Moscow.[3] In the second half of the

[1] Josiah C. Russell, "Effects of Pestilence and Plague, 1315-1385," *Comparative Studies in Society and History* 8/4 (1966): 464; Orhan Kılıç, "Tarihte Küresel Salgın Hastalıklar ve Toplum Hayatına Etkileri," *Türkiye Bilimler Akademisi* (2020): 24.

[2] Robert Nathan, *The Plague in India, 1896, 1897*, Vol. I (Simla: Government Central Printing Office, 1898), 67-68, 302; İsmail Yaşayanlar, "The Cholera Epidemics of 1894 and 1910 and Quarantine in Samsun," In *Un Letterato in Viaggio: Liber Amicorum Per Raniero Speelman*, ed. August Ammerlaan, et al. (Rotterdam: Ridderprint, 2023), 479.

[3] Walter Wyman, *The Bubonic Plague* (Washington: Government Printing House, 1900), 5-6; David Herlihy, *The Black Death and the Transformation of the West* (Cambridge: Harvard University Press: Cambridge, 1997), 30; W. P.

19th century, plague spread widely between the Red Sea and the Pacific Ocean. The last outbreak of plague in Europe occurred on the banks of the Volga in 1878-1879, while it became widespread in Asia towards the end of the century.[4] In 1893, plague broke out in Tonkin and Hong Kong and soon spread to Bombay, Karachi and Puna. The outbreak in Bombay in 1896 caused massive loss of life. Due to inadequate quarantine measures and the consequent spread of infection, the plague that broke out in 1896 became an intercontinental epidemic.[5] In the 19th century, outbreaks of plague, cholera and influenza in India and China spread from Asia to Europe, America and Africa, killing large numbers of people.[6]

Bubonic plague was also seen in Turkestan under Tsarist Russia in the late 19th century.[7] One of them was the plague outbreak in 1898 in Anzob, a mountain village in Samarcand Province of the General Governorate of Turkestan.[8] The government of Tsarist Russia took a series of measures to prevent the disease from spreading to the rest of Bukhara and Turkestan, especially Marzic, Panjikent and Samarcand, which were located close to Anzob. As a result of the measures taken, the epidemic was under control within a few months.[9]

This study, which examines the effect of geographical structure on the spread of epidemics and quarantine practices, examines how the plague cases seen in Anzob in 1898, the detection of the first case and the measures taken by Tsarist Russia against the epidemic. The effects of the geographical conditions of Anzob on the spread and control of the plague epidemic before and after the measures taken were evaluated. This study is based on the American embassy reports, which contain correspondence between the Russian and American officials about the health conditions and quarantine practices in the region, and utilizes the existing literature in Turkish and English.[10]

1) Measures Taken Against Epidemics and the Impact of Geography

There are many factors that play a decisive role in the dynamics of the spread of epidemics. In addition to factors such as the type of disease, health conditions in the region where the outbreak occurred, access to water resources, population density, migration, trade caravans and crowded groups on the move, it is possible to say that geographical location was also among these factors. As a matter of fact, geography not only enabled the speed of the spread of the disease and the expansion of the spread area, but it could also

Blockmans, "The social and economic effects of plague in the Low Countries: 1349-1500," *Revue belge de philologie et d'histoire* 58/4 (1980): 834.
[4] Wyman, *The Bubonic Plague*, 6-7.
[5] B. O. Flower, *The Bubonic Plague* (United States: 1919), 7-9.
[6] Baldwin Latham, *The Climatic Conditions Necessary for the Propagation and Spread of Plague* (Edinburgh: R. & R. Clark, Limited, 1900), 5; Flower, *The Bubonic Plague*, 8-9.
[7] Public Health Reports (PHR), Vol. 13, No. 44, (November 4, 1898), 1260.
[8] Hayri Çapraz, "Çarlık Rusyası'nın Türkistan'da Hâkimiyet Kurması," *SDÜ Fen Edebiyat Fakültesi Sosyal Bilimler Dergisi* 24 (2011): 73; PHR, Vol. 13, No. 51, (December 23, 1898), 1526.
[9] PHR, Vol. 13, No. 50, (December 16, 1898), 1495.
[10] This study utilizes American embassy reports in the Public Health Records, which contain detailed information on the bubonic plague outbreak in Anzob and include correspondence between the American Embassy in St. Petersburg and Russian authorities. This source provides important primary data in the context of epidemic management and international relations of the period.

function as a factor that facilitated the control of the epidemic.[11] Especially in quarantine measures implemented to prevent epidemics, the geographical structure and the population in the settlement were influential. After the 14th century plague epidemics in Europe, quarantine practices were widely used as a strategy to control the interaction of the region with the outside world, transportation channels and roads, and quarantine practices could vary depending on environmental conditions.[12] As a matter of fact, it is seen that the measures taken for the epidemic in closed settlements with limited transportation compared to large cities were realized more quickly and effectively. On the other hand, similar quarantine measures had to be implemented more comprehensively in large cities with a large number of households and crowded populations, intersecting many road lines and having commercial ports.[13]

In 1898, the village of Anzob, where the bubonic plague outbreak occurred, was small and geographically isolated. This isolation gave the village a natural advantage in the fight against the epidemic. However, the limited connection between the village and the outside world brought logistical difficulties in epidemic management. Anzob was a mountain village located in Samarcand Province under the General Governorate of Turkestan, the command center of Tsarist Russia in Turkestan, approximately 270 km southeast of Samarcand. Located in the Panjikent region in the Skandar canton, the village of Anzob was in a hard-to-reach area at an altitude of 4000-5000 meter's.[14] Anzob was located between the northeastern border of Afghanistan and Samarkand, one of the most important provinces of the General Governorate of Turkestan. To reach Anzob from Samarcand, a village with limited connections to the surrounding area, it was necessary to travel a long distance along a winding path along the side of a steep mountain. While this distance was a factor that could slow the spread of the epidemic due to the village's remoteness from transportation networks, it also created challenging conditions for emergency response and medical support.[15] As a small mountain village, Anzob had a small population and was not open to immigration from outside. According to a report dated October 8 submitted to the Governor-General of Samarcand by Zouboff, a Russian doctor in Samarcand, Anzob had a population of 257 at the time of the outbreak of the disease in 1898.[16] While this figure shows that the village has a small-scale community

[11] Sara MacLafferty, "Placing Pandemics: Geographical Dimensions of Vulnerability and Spread," *Eurasian Geography and Economics* 51/2 (2010): 147; Marina Ini, "Quaratine, Diseased Geographies, and Cross-Cultural Encounters in the Eighteenth-Century Mediterranean," *The Historical Journal* 67 (2024): 265.
[12] Lisa Sattenspiel, *The Geographic Spread of Infectious Diseases* (Princeton and Oxford: Princeton University Press, 2009), 3.
[13] Kira L. S. Newman, "Shutt Up: Bubonic Plague and Quarantine in Early Modern England," *Journal of Social History* 45/3 (2012): 812; Kelly Drews, "A Brief History of Quarantine," *The Virginia Tech Undergraduate Historical Review* 2 (2013): 68-69.
[14] PHR, Vol. 13, No. 47, (November 25, 1898), 1383.
[15] Annette M. B. Meakin, *In Russian Turkestan: A Garden of Asia and Its People* (New York: Charles Scribner's Sons, 1915), 249.
[16] "The Plague in The East Source," *The British Medical Journal* 2/1980 (Dec. 10, 1898): 1776. It is also observed that higher numbers were given for the population of Anzob during the period of the epidemic. In the article titled "Plague in the Samarcand Region of Russia" in the newspaper Novoe Vremia, quoted by W. R. Holloway, Consul General of the United States in St. Petersburg, the population of Anzob was stated as 357. See. PHR, Vol. 13, No. 50, (December 16, 1898), 1495. Epidemiologist Frank Clemow, in his work, quoted the population of Anzob as 387. See. Frank G. Clemow, *The Geography of Disease* (Cambridge: Cambridge University Press, 1903), 334.

and therefore outbreak management can be organized relatively easily, it also shows that each case can have a larger impact relative to the total population.

As a mountain village, Anzob's remoteness from other regions and its small population constituted a natural obstacle to the rapid spread of the disease to the surrounding villages and, through them, to the wider region. This isolation provided an important advantage in limiting the spread of the epidemic. However, the people of the region, who were far from the city center, also needed to meet their needs and receive medical assistance during the epidemic. For this reason, people living in Anzob could go out of the village to meet their daily needs, which could have enabled the disease to spread to much wider areas. As a matter of fact, large and populous cities such as Samarcand, Bukhara and Panjikent could have been affected by this disease.[17] The possibility of the epidemic spreading to the cities located at the intersection of trade routes in the region pushed the government to take strict measures. For this reason, the Russian government resorted to strict measures from the beginning in terms of determining the type of epidemic, detecting the first case and quarantine practices. The General Governorate of Turkestan quickly mobilized health units in the region to contain the epidemic before it spread and implemented strict quarantine measures to cut off the village from contact with the outside world. In addition, logistical support was provided to meet the basic needs of the local population, ensuring the sustainability of quarantine practices.

2) Bubonic Plague in Anzob and Measures Taken

The first appearance of bubonic plague in Anzob occurred in early September 1898. In line with the reports sent from Samarcand Province to the General Governorate of Turkestan about the epidemic in Anzob, a plague commission was established by the Commander-in-Chief to prevent the spread of the plague epidemic and to fight against it. Prince Alexander Petrovic of Oldenburg was appointed as the chairman of the commission.[18] In addition, work to establish a field hospital[19] in Anzob began soon after. While Alexander Petrovich was in Samarcand between October 26 and November 7, 1898, the field hospital began to operate. At a meeting of the sanitary committee held in Samarcand and chaired by Alexander Petrovich, local physicians, without conducting any bacteriological examination, stated that the outbreak in question was bubonic plague based on the symptoms of the disease.[20] After this diagnosis, Dr. Levin, who had studied plague in India, was sent to the region to make a definitive judgment on the type of plague

[17] According to the population data of Samarkand Province in 1897 cited by Ebubekir Güngör in his study, the population of the region is close to 900,000. The general population of the region within the borders of the General Governorate of Turkestan is around 5.000.000. As a matter of fact, if the large population in the region was affected by the epidemic, it could lead to a major epidemic that would spread throughout Turkestan. See. Ebubekir Güngör, "Rus Salnamelerine Göre Türkistan Askerî Valiliği'nde Nüfus Hareketleri (1867-1917)," *Belleten* 88/311 (2024): 302.
[18] PHR, Vol. 13, No. 50, (December 16, 1898), 1494; PHR, Vol. 13, No. 52 (December 30, 1898), 1577; In accordance with the imperial ukase of October 24, 1898, Prince Alexander Petrovich was sent to Samarcand province to take effective measures to stop the spread of the disease and restore the region to health. See. PHR, Vol. 13, No. 47, (November 25, 1898), 1383.
[19] The statement in the embassy reports is that a hospital was established in Anzob. However, considering that a full-fledged hospital could not be established here in a short time, it can be said that this hospital was a field hospital.
[20] PHR, Vol. 13, No. 47, (November 25, 1898), 1383; PHR, Vol. 13, No. 50, (December 16, 1898), 1494.

and to take the necessary measures.[21] The other agenda of the commission was how the outbreak started and the identification of the first case.

The reports sent from the Samarcand province to the General Governorate of Turkestan from the region provide details about the first suspected case in the village. According to the reports, the cause of the outbreak of the disease in Anzob was a woman from Anzob who went to one of the neighboring villages. In the village of Marzni, 10 km west of Anzob in the same canton as Anzob (Skandar Canton), a woman died of the disease, and an Anzob woman named Agiour Bibi washed the body and buried the deceased. When Agiour Bibi returned to Anzob, she fell ill and died three days later. After the death of the sick person, there were cases of illness among the relatives and friends who were present at the funeral and later among the residents of Anzob village.[22]

After Agiour Bibi's death, the attitude of the village residents led to the spread of the disease throughout the village and the number of deaths increased along with the number of cases. The entire village was Muslim and one of the residents of the village, claiming that Agiour Bibi had not been buried in accordance with Sharia law and that the disease had spread to the village because of this, recommended that her body be exhumed and reburied in accordance with Sharia law, and the residents of Anzob village followed this recommendation and exhumed and reburied the body. After this, the number of people affected by the epidemic increased and the number of deaths from the disease in the village increased.[23]

As stated by the Russian delegate Karakowsky at the international sanitary commission meeting held on December 13, 1898, Russian officials were of the opinion that the disease came to the region (Anzob) via Afghanistan and Baluchistan in the south. They stated that it was Muslim pilgrims returning from Jeddah who carried the disease to Baluchistan and Afghanistan. Another important region was Bombay, where the epidemic was still ongoing during this period. Russian authorities have stated that the outbreak was caused by the Indian plague.[24] As a matter of fact, pilgrims were forbidden to travel to Hejaz via India.[25] In line with the statements of Russian officials, it appears that the plague in Anzob was part of a general epidemic rather than a regional one.[26]

In order to prevent the geographical spread of the epidemic, the village of Anzob was quarantined in September 1898 from the date of the disease. Roads to Anzob, which had limited communication with the surrounding area, were closed and the village's communication with the outside world was cut off. The clothes worn and bedding used by

[21] PHR, Vol. 13, No. 50, (December 16, 1898), 1494.
[22] PHR, Vol. 13, No. 47, (November 25, 1898), 1383.
[23] PHR, Vol. 13, No. 47, (November 25, 1898), 1383.
[24] PHR, Vol. 13, No. 52, (December 30, 1898), 1580.
[25] PHR, Vol. 14, No. 2, (January 13, 1899), 79.
[26] However, it should be noted that bubonic plague can occasionally occur as small-scale and localized outbreaks and has only developed into major pandemics 3 times in history. Among such pandemic outbreaks, the rate of spread of bubonic plague is slower than that of other infectious diseases such as influenza. See. Philip Ziegler, *The Black Death* (Sutton: Sutton Publishing, 2003), 13. In line with the information provided by Frank Clemow, when the views of the Russian authorities on the origin of the bubonic plague in Anzob are evaluated, the conviction that the plague could have reached the region through Afghanistan and Baluchistan via pilgrims from Jeddah is strengthened. Clemow suggests that the plague may have reached Jeddah indirectly from India, from where it could have spread through trade routes or migratory movements. See. Clemow, *The Geography of Disease*, 333-334.

the dead were burned. After the village was disinfected, the sick were placed in special places. Instructions were given for the care of the sick and the burial of the dead. Uninfected people were allowed to stay temporarily in the village. Old clothes were burned and linen clothes and bedding were provided. A cordon of residents of neighboring villages and observation posts were set up around Anzob to prevent any outflow or escape from the village, and Cossack troops were ordered to monitor these observation posts. Anzob was reinforced with medical personnel, doctors and surgeons, who were provided with the necessary medicines and disinfectants.[27] To prevent the spread of the disease throughout Bukhara and Turkestan, three medical stations were established: one along the Amudarya River, eight along the Trans-Caspian Railway and three along the Iranian border. Two lines were also organized for the Bukhara Emirate. In addition to these stations, in order to ensure that the whole of Russia was not affected by the epidemic, medical stations in Bukhara, Khiva, Trans-Caspian and Turkestan regions were set up to accommodate patients. Thus, control over commercial routes was increased. Accordingly, rags, fresh bones, animal waste, used bedding and personal clothing were banned from being shipped as merchandise. It was decided to accept commercial goods after disinfection and to increase the number of medical personnel on trains.[28]

The sanitary condition of the crews of steamers and other vessels operating on the Trans-Caspian and Andijan railroads, Krasnovodsk, the Caspian Sea coast and Astrakhan, as well as on the Caspian Sea and the Amudarya River, was strictly monitored. In anticipation of the spread of the disease, auxiliary personnel of doctors and nuns of charity were summoned in the main cities of the Russian empire, ready to go to their assigned locations at a moment's notice. In total, an auxiliary team of 100 doctors and 80 nuns worked in Astrakhan, Warsaw, Vilno, Ekaterinoslav (Dnipro), Kazan, Kieff, Moscow, Odessa, St. Petersburg, Sebastopol, Simpheropol, Tiflis, Tomsk, Tula, Kharkoff (Kharkiv) and Jurieff (Atyrau).[29] There was a sufficient number of vaccines prepared with the plague bacteria (Yersinia pestis) according to the system of the French doctor Alexandre Yersin.[30] In addition, drugs by the Russian bacteriologist W. M. W. Haffkin[31] were brought from India and prepared for inoculation at the Imperial Institute of Experimental Medicine in St. Petersburg.[32]

One of the most important measures to control the plague outbreak was the situation of Turkestan pilgrims traveling to Hejaz via İstanbul. The International Health Commission mandated that pilgrims be disinfected at the Kavak sanitorium at the entrance to the Bosphorus in order to check whether they were carrying the disease. The

[27] PHR, Vol. 13, No. 47, (November 25, 1898), 1383.
[28] PHR, Vol. 13, No. 50, (December 16, 1898), 1494; PHR, vol. 13, no. 51, (December 23, 1898), 1526.
[29] PHR, Vol. 13, No. 50, (December 16, 1898), 1494-1495.
[30] The French doctor Alexandre Yersin (1863-1943) was the first to use serum from an immunized horse in severe cases. In 1896, he treated twenty-three cases of plague in this way. See. Wyman, *The Bubonic Plague*, 16.
[31] The Russian-born bacteriologist Waldemar Mordecai Wolff Haffkine (1860-1930) had gone to Paris to study under Louis Pasteur. He came to India in 1893 to test the hypothesis of protection against cholera. He pioneered the preparation of a plague vaccine during the epidemic in Bombay in 1896. See. Jala, H. I. "W. M. W. Haffkine, Bacteriologist – A Great Saviour of Mankind," *Indian Journal of History of Science* 2/2 (1967): 105.
[32] PHR, Vol. 13, No. 50, (December 16, 1898), 1495.

Commission also decided to monitor whether Iran was affected by the outbreak or whether infected people were entering or leaving Iran.[33]

As a result of the measures taken by the Russian government against the bubonic plague outbreak in Anzob, the disease was prevented from spreading outside, but almost all of the infected population in the village died. According to Prince Alexandr Petrovich's report, 233 of the 357 inhabitants of Anzob died between October 3 and November 2, when the disease first appeared, and there were no new cases between October 22 and November 4. The villages of Samarcand and Bukhara, densely populated areas located close to Anzob, and other areas also had no cases associated with the outbreak.[34]

The commission's report, which was included in the circulars of the Russian Foreign Ministry dated October 20-October 22, 1898, stated that the disease was decreasing in Anzob, which was still in isolation. The report also stated that the general state of health was good in villages neighboring Anzob, such as Marzni and Paskan, in Panjikent, as well as in other parts of Samarcand province and Bukhara Emirate. An investigation in Anzob at the end of November revealed that there were no other cases of plague in the village. There was also no evidence of an outbreak in nearby villages.[35] As a matter of fact, as a result of the measures taken by the Russian government for the bubonic plague epidemic in Anzob in September 1898, it was observed that the spread of the disease was completely prevented at the end of November, but a large population in the village died from the disease.

Conclusion

In plague epidemics throughout history, the measures taken against the disease and its spread varied depending on the environmental conditions. The village of Anzob, as a mountain village at high altitude and with limited contact with the outside world, is an important example to examine the impact of geography and population on the measures taken against epidemics. Indeed, the fact that the comprehensive quarantine measures taken by the Russian government after the detection of the first case yielded positive results in a short period of time is directly related to the geographical location and population ratio of Anzob. Research on the detection of the first case and the prevalence of the disease in the village shows that the religious sensitivities of the people of Anzob paved the way for the epidemic to infect many people in the village. It is understood that the people who were in close contact with the deceased during the exhumation and reburial of the deceased and the cleaning of the dead body were exposed to the epidemic, and as a result of the contact of these people with their relatives, the disease spread to almost the entire population of the village.

Although the isolation of the settlement where the epidemic was seen prevented

[33] PHR, Vol. 13, No. 49, (December 9, 1898), 1459.
[34] PHR, Vol. 13, No. 50, (December 16, 1898), 1495. In the communiqué published in The Caucasus newspaper dated November 2, 1898, it was reported that the population of Anzob consisted of 257 people, the number of people affected by the disease was 224, 219 people died and 4 people recovered. See. PHR, Vol. 13, No. 52, (December 30, 1898), 1580. Frank Clemow gave the population as 387 and the death toll as 237. See. Clemow, *The Geography of Disease*, 334.
[35] PHR, Vol. 13, No. 50, (December 16, 1898), 1495.

the spread of the disease, it is seen that providing medical aid and food supply to places such as Anzob, which is located at high altitude and where transportation channels are limited, creates some difficulties. As a matter of fact, if the needs of the people are not met, there is a possibility of violating the quarantine and exits from the village. Looking at the quarantine measures implemented by the Russian authorities in Anzob, it is seen that they tried to prevent the disease from spreading outside the village as much as improving the health status of the local population. Looking at the mortality rate compared to the population of the village, it is understood that the medical interventions to treat the disease were insufficient and many of the villagers died in a short period of time. In conclusion, the example of the village of Anzob clearly demonstrates how determinative geographical location and population structure are in the fight against epidemics. The Anzob example also shows that not only medical and administrative measures but also social behavior and beliefs should be taken into account in the fight against the epidemic.

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