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Epidemic (Communicable) Diseases on Lesbos Island (1890-1912)* *Midilli Adası 'nda Salgın Hastalıklar (1890-1912)*

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Dr. Öğr. Üyesi Arzu Bayraka Tařkaya
Dumlupınar Üniversitesi, Sosyal
Bilimler Meslek Yüksekokulu, Dış
Ticaret Bölümü
a.baykara20@gmail.com

ORCID ID

<https://orcid.org/0000-0002-1712-4881>

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Abstract

Lesbos Island was one of the first places where quarantine was applied in the Ottoman Empire due to its location. Many diseases such as smallpox, measles, cholera, rabies, meningitis, typhoid, and plague were widespread on the island. The plague, which broke out in 1907 had great effects on the island. With the outbreak of the plague, precautions had to be taken in many places, especially in the island and Istanbul, to which it was connected. A bacteriologist was brought from Istanbul and Izmir for the diagnosis of the cases, and measures were taken accordingly. The plague, which spread in a short time, infected two confectioner's apprentices who came into contact with the dead mice in the sacks; the number of contacts increased after one of the shopkeepers, Grocery Yorgi, threw the mouse away. The symptoms of the plague in the baker's apprentice were understood from the inguinal swelling. The plague also spread to Anatolia from those who went from Lesbos to Dikili. The government attempted to treat plague with medication. Given the course and spread of the disease, serum was brought from the Pasteur Institute in Paris and used as a treatment. The plague, which first appeared on Lesbos Island in 1907, continued for three months; was prevented by quarantines and tight cordons. The public was not satisfied with the disease prevention and the assistance provided. In particular, the financing of health maintenance by local municipalities resulted in social unrest. In this study the diseases that occurred in Lesbos Island and how the plague, which occurred in 1907, affected the island and surrounding sanjaks were examined based on the documents. The studies of the Ottoman Empire especially on protection of public health and how they struggled with diseases were discussed.

Keywords: Lesbos Island, Quarantine, Infectious Diseases, Plague, Treatment

Öz

Midilli Adası, önemli bir mevkide oluşu sebebiyle Osmanlı Devleti'nde karantina uygulamasının yapıldığı ilk yerlerden biri olmuştur. Adada; çiçek, kızamık, kolera, kuduz, menenjit, tifo, veba gibi birçok hastalık görülmüştür. 1907 yılında çıkan veba ise adada büyük etkilere yol açmıştır. Veba hastalığının çıkmasıyla başta ada ve İstanbul olmak üzere irtibatlı olduğu birçok yerde tedbir alınmak zorunda kalınmıştır. Vakaların teşhisi için İstanbul'dan ve İzmir'den bir bakteriyolog getirilmiş; durumla alakalı tedbirler alınmıştır. Kısa sürede yayılma alanı bulan veba, çuval içindeki ölü farelerle temas eden iki şekerçi çırağına bulaşmış; esnaftan Bakkal Yorgi'nin fareyi çöpe atmasıyla temaslı sayısı artmıştır. Fırıncı çırağında ise vebanın belirtileri kasık şişliğinden anlaşılmıştır. Veba, Midilli'den Dikili'ye gidenlerden Anadolu'ya da geçmiştir. Vebayı tedavi etmek için ilaç kullanılmıştır. Daha sonra hastalığın gidişatı ve yayılımına bakarak Paris'teki Pasteur Enstitüsü'nden serum getirilmiş; tedavi bu şekilde yapılmıştır. 1907'de Midilli Adası'nda başlayan veba, üç ay süreyle devam etmiş; karantinalarla ve alınan sıkı kordonlarla önlenememiştir. Halk, hastalığın idamesinden ve yapılan yardımlardan memnun kalmamış; özellikle hastalığın ekonomisinin yerel belediyelerden karşılanması tepkiye yol açmıştır. Bu çalışmada Midilli Adası'nda meydana gelen hastalıklar ve 1907'de meydana gelen veba hastalığının, ada ve çevresindeki etraf sancakları nasıl etkilediği arşiv belgelerinin izinde incelenmiştir. Osmanlı Devleti'nin özellikle halkın sağlığını koruma konusunda yaptığı çalışmalar ve hastalıklarla nasıl mücadele edildiği ele alınmıştır.

Anahtar Kelimeler: Midilli Adası, Karantina, Bulaşıcı Hastalıklar, Veba, Tedavi

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INTRODUCTION

Lesbos is a mountainous Greek Island situated in the northeast of the Aegean Sea. Closer to Ayvalık and Buhraniye districts of Turkey more than Greece's mainland, Lesbos is the third largest island in Greece after Crete and Euboea. Its name is derived from the old "Lesb(v)os", and the name given to the island in Turkish (*Midilli*) is derived from the town "Mytilene", which was a central place in the medieval ages. Its history dates back to the 3rd century BC. The island is reminiscent of a rounded triangle and connected to the sea by narrow exits; however, there are two gulfs that expand inwards: Gulf of Geras in the southeast and Gulf of Kalloni in the south. Both gulfs provide unique shelters for small-scale ships. The gulfs, edging deeply in the island, gave Lesbos a fragmented appearance (Darkot, 1993: 282).

Lesbos, which became a part of the Ottoman Empire in 1462, had become one of the important centers that delivered olive oil and soap to the palace, especially due to its proximity to Istanbul (Arıkan, 2006:1-24). Lesbos was annexed to the State of Archipelago (*Eyālet-i Cezāyir-i Bahr-i Sefid in Ottoman Turkish*) and this province was first established during the reign of Suleiman the Magnificent (1520-1566) in 1553 by adding Kocaeli, Sığla, Biga from the State of Anatolia, Eğriboz, İnebahtı, Mezistre, Karlıeli from State of Rumeli and Lesbos Sanjaks. The boundaries of this province had differed over time (For more detailed information, see Ünal, 2002: 251-261; Ünen, 2013). Gelibolu (Gallipoli), the center of the State of Archipelago, preserved its feature of being a center until the 19th century. While Lesbos Island was going to be turned into an intermediate sanjak, after the Tanzimat, new regulations took place constantly. Meanwhile, Biga as the center, the islands of Rhodes, Lesbos, Chios and Kos were annexed to the province. In addition, Cyprus Island was also connected to the province at one stage; Biga Sanjak was transferred to Hüdâvendigar Province¹. The province consisted of Tenedos, Lemnos, Lesbos, Imbros, Kos, and Kastellorizo in 1876, with Chios and Rhodes being the most important centers (See: Şakiroğlu, 1993: 500-501).

The fact that the people of Lesbos did not participate in the Greek Revolt between 1821 and 1828 was effective in maintaining the relative prosperity of Lesbos in the 18th century. In 1840 an epidemic of plague was experienced, which particularly affected the Muslim population, with the death toll amounting to 40,000. Subsequently, the island witnessed a significant population explosion (Kiel, 2005: 11-14). According to the annuals registered by Vital Cuinet as of 1892, the island had a total population of 27,079: 2540 Muslims and 24,539 Orthodox Christians (Cuinet, 1892: 352). On the other hand, Lesbos Island had a population of 400 Muslims and 16,847 Christians in the 19th century. As is seen, non-Muslims constituted the majority of the population of the island. In line with the population proportion of muslims and non-muslims, there were 33 mosques and 51 churches on the island (1301 Cezayir-i Bahr-i Sefid Salname, 109-110). There is a bulk of research on the social and economic history of the island (Payzın 2008; Arıkan, 2010; Ünver, 2012; Büyükkal, 2015). Ayvalık (Kydonia) was an important economic center established by the people coming from the island of Lesbos (For Ayvalık: Darkot, 1942; Erım, 1948; Yorulmaz, 2000).

The government, especially the local administration and Istanbul, took specific measures in order to combat these epidemic diseases, particularly the diseases seen in Lesbos and the plague epidemic that emerged in 1907. In an attempt to shed light on epidemic diseases that prevailed in Lesbos and affected many people until the end of the National Struggle, the current study discussed the example of Rhodes Island and how the Ottoman state struggled with diseases in detail. All the cases mentioned throughout the paper are based on the documents in the Prime Ministry Ottoman Archives affiliated to the General Directorate of State Archives. Further information about the social and economic situation of the state has also been given when explaining these diseases.

¹ Especially the administrative and economic situation of Hüdâvendigar in the 15th and 16th centuries, see Ömer Lütfi Barkan-Enver Meriçli, 1988.

Map 1: Midilli (Lesbos) Island (Duran, 1996: 27)



HEALTH ORGANIZATION

Epidemics, which were widespread in the Ottoman Empire in the 19th century and early 20th century, as in many parts of the world, led to the deaths of a large number of civilians and soldiers (Temel, 2008). Undoubtedly, the most important institution of the health organization was hospitals. It is stated in the annual that there was a military hospital inside the castle on Lesbos Island in the 19th century and everyone was treated in this hospital, regardless of whether they were Muslim or non-Muslim (1318 State of Archipelago Annual, 156). It was also recorded that there were five pharmacies close to each other in the adjacent bazaar (ibid).

Lesbos Island was one of the first quarantine sites (Çadırcı, 2013: 310-311 and also four quarantines Panzac, 2007). The quarantine was applied in several ways. In absolute or complete quarantine, the mobility of people or animals in contact with the infectious disease was strictly limited for longer than the longest incubation period. In the **modified quarantine**, the mobility of humans and animals were partially restricted. In **personal surveillance**, which was another quarantine application, contacts were kept under close scrutiny and examined once or twice a day for the urgent diagnosis of infection and disease. In **isolation**, a part or group of individuals and animals were isolated from other groups in order to be observed and kept under control (Gülesen, 1973: 157). In general, the quarantine procedure was applied carrying out one of these strategies. One of the institutions that started to operate in the state centers of the Tanzimat Period was the quarantine sites. A director, a clerk, two guardians, and a physician would be assigned in the quarantine areas. All of these officers were paid monthly from the revenues of financial office (Çadırcı, 2013: 232). A quarantine tax had been imposed on those places since 1845 in order to cover the other costs of quarantines, which were decided to be set on the coasts and ports where trade was intense. According to Ortaylı, quarantine in the Ottoman Empire was seen as a

measure restricting the unchecked trade that the people were used to, the entry and exit of goods and people (Ortaylı, 1985: 192)².

In the Ottoman Empire, quarantine was treatment for those suffering from the disease and the protection mechanism of the society for those who were not sick. The 19th century spanned through epidemic diseases. Measures were taken in the Ottoman Empire against the plague in 1803,1811,1812,1813,1822,1834,1841, 1847, 1849, and 1869, for smallpox in 1841-44 and for cholera in 1841, 1863, 1893; however, the diseases continued to prevail (Çadırcı, 1994: 299). In 1893, French Physician André Chantemesse came from abroad for the cholera epidemic in Istanbul, and he worked for the cleaning of the waters (Yıldırım, 1994: 14-29). This was how the state had fought against cholera.

All kinds of health checks were procedurally made during quarantines. One of the institutions inspected was the tanneries processing leather in the region. Tanneries were also undesirable places in ancient Greece and Rome due to the bad smell emitted (Bozkurt, 1994: 176-178). According to the annual of 1893, there were 7 registered tanneries processing the imported leather on Lesbos Island (1301 State of Archipelago Annual, 110); and in the annual of 1885 (1303), 15 tanneries were registered (1303 State of Archipelago Annual, 162). The number of tanneries was given as 14 in Kāmûsü'l-A'lâm (Şemsettin Sami, 1316: 4242). On December 12, 1865 (H 23 Safer 1282), officer Major Edhem Efendi, the manager and physician of the Midilli Quarantine, reported in the documents he gave to the local administration that these enterprises were harming the city in terms of health as they were located in the castle at the heart of the city and around the Port of Poyraz. One of the Greek tanners, who was disturbed by their removal from the city, complained about the administrators to the Greek Consulate (BOA, HR.MKT, 541, 21). The location of these tanyards would be the places stipulated by the quarantine regulations and would be transferred to areas that did not threaten the health of the public (BOA, HR.MKT, 533,96). Further documentation reveal that on January 23, 1895, it was forbidden to buy hairy leather from abroad. Izmir Tax Administration was informed of the letter given by the Chamber of Commerce, stating that salty and dry leather to be sent from the Antwerp Chamber of Commerce would not be accepted as of July 29th for health reasons. By order of the Ministry of Health, the letter sent to the Lesbos Quarantine Health Clinic was sent to the the Governorship of Lesbos, after which 2000-3000 pieces of leather were taken to the quarantine office upon the control performed at the customs pier. These goods were leathers to be shipped to the tanneries outside the country by the sea under sanitary conditions; the leather could be taken into the city with the license obtained from the quarantine administration. Due to this situation, the entrance of leathers to the city was restricted and the situation was reported to Lesbos Tax Administration (BOA, HR.TH, 152,9). In fact, although they seem insignificant, the situation of these workshops and tanneries, also polluting the air of the city, was restricted in this way (Baykara Taşkaya, 2021: 79)³.

Quarantines carried out the most important health checks on the island. On September 22, 1893 (11 Rebiülevvel 1311), the passengers coming from Lesbos Island and the Anatolian coast, consisting of villagers and the urban, were asked to be kept under quarantine for ten days due to illness. These passengers were required to be guarded under military control by the sub-governorship. Such areas were asked to be controlled by the gendarmerie; it was stated that a physician would be sent by the Lesbos Medical School, and even the tents that were needed would be provided by applying to the Governor of Biga (BOA, A., MKT.MHM, 561,3). On September 11, 1900 (16 Cemâziyelevvel 1318), the passengers arriving from the Anatolian coast by ships were requested to be examined by the municipal physician in Lesbos Port; the request of the State of Archipelago Governorship was forwarded to the local administration regarding the situation. Again, the difficulties to be experienced in the supply of grain and supplies in other islands were also asked to be resolved (BOA, DH. MKT 2401, 96). On September 8, 1914, the ships coming from Palestine were required to be subjected to quarantine for a week at these quarantine piers in Alexandria, Lesbos, and Chios due to the plague among the people in Haifa in the Province of Palestine. In Lesbos and Chios Islands, a careful medical examination was deemed necessary in compliance with health rules during the quarantine period. It was reported that inspection and cleaning would be carried out to prevent waste on the ships, and quarantine measures were implemented for five days (BOA, HR.SFR.3.710, 65). It is apparent that the controlled transition from the Mediterranean to Istanbul was necessary to carry out these health inspections.

² The inspections carried out during the quarantine are also for the purpose of performing the customs service.

³ Lesbos Island was one of the important places producing soap for Istanbul. The state did not lean towards establishing factories producing soap in the city in terms of health and did not allow the opening of a factory.

Other institutions upon which health controls were concentrated were undoubtedly densely-populated prisons. Although the crowded prisons in the Ottoman Empire in the 19th century led the state to make reforms, the result was not as desired. Upon the epidemic in Russia and Austria, a document dated September 22, 1907 (14 Şaban 1325) was sent to the Lesbos Gendarmerie in response to the notification that the prisons and detention centers should be kept clean to regulate the health conditions and to ease the stampede in these places (BOA, BEO, 3150, 236236). The document prepared by the Ministry of Internal Affairs on April 15, 1903 (17 Muharrem 1321) was written for the rehabilitation of all prisons. It was requested that the wards of the Molveh Prison within the Molveh Castle on Lesbos Island be made suitable for health conditions by paying 5000 kurus; it was emphasized that whether this situation was harmful in terms of health conditions should be checked by the municipal physician since the prison was close to the government mansion. The control was considered useless; the construction of a new prison was deemed appropriate afterwards. In the documents sent from the Ministry of Internal Affairs to the Governorship of the State of Archipelago, it was requested to examine the Exploration Documents to be sent so that the prisons and detention centers could be made compatible with the sanitation rules. It was decided to rebuild a total of 13 prisons in the Sanjak of Taşlıca (BOA, DH.TMIK.S, 43,329).

Beside the Molveh Castle was a prison in Lesbos Castle. It is apparent that the health conditions were not suitable in the prison of the castle too. On November 14, 1909 (1 Zilkade 1327), the Artillery District Governor Ali Galip Efendi and the Capital Inspector Osman Hulusi Efendi, who was exiled to the Midilli Castle with regards to Divan-ı Harb-i Örfî, asked to complete their convictions outside the castle due to their illness. This request was documented with reports received from local administrators and the prisoners' requests were met (BOA, DH, MUI, 8,6). The poor health conditions of the castle led the prisoners to stay in places with more favorable health conditions. As can be seen, not only were quarantines an important organization that inspected health, but also, they functioned as hospitals where important health practices were carried out for public health.

EPIDEMIC DISEASES IN LESBOS ISLAND

The "Guide Book for Hospitals" published in 1915 in the Ottoman Empire demonstrates the most common diseases prevailing within the state, particularly Plague, Cholera, Smallpox, Chickenpox, Red, Measles, Dysentery, Erysipelas, Diphtheria, Fever (Hummâ-yı Nemşi, Hummâ-yı Nifasi), Whooping Cough, Sillür-rie, İltihab-ı sehaya-yı dimaği-i şevki-i müstevli, etc. as documented on December 14, 1913 (R 1 Kanuni Evvel 1329) in Hospital Regulations (Ergin, 1995: 3438-3487). Little do we know about Tedren-i Rie disease mentioned in the document. It should also be noted that we were able to mention diseases that were common and subject to quarantine. Apart from the diseases mentioned above, there were undoubtedly many diseases that prevailed in the Ottoman Empire.

The Ottoman Empire carried out various activities to prevent diseases before they appeared. The province allocated budget for preventive medicine services before diseases occurred. On February 27, 1890 (7 Recep 1307), 420 kurus was allocated from the municipality revenues of the Central and Lesbos sanjaks of the State of Archipelago to take sanitary measures when the disease occurred in the province. It was reported that the amount was recorded in the book and the receipt was sent (BOA, DH. MKT, 1703, 81).

Lesbos Island had been one of the important places where diseases prevailed due to its proximity to Izmir and Istanbul. The first disease to be mentioned in the documents was Cholera (İllet-i Âdiyye-İllet-i Mahûf as recorded in the document). The disease is of importance in that it could cause an intercontinental epidemic and showed endemic local course in the countries it affected (Şehsuvaroğlu, 1950: 421-427; Akyol, 1970: 10-11). Epidemics usually occur in warmer months. Polluted water and sewers are known to play an important role in cholera transmission. Cholera is more effective in cities with poor infrastructure. The disease manifests itself widely in densely-populated places, such as prisons, schools, and hospitals (Ayar, 2007: 4). Coming from the Persian Gulf to the Anatolian and Mediterranean coasts via Baghdad, cholera first appeared in the Ottoman lands in 1822. The first cholera epidemic occurred in Istanbul in 1831 (Sarıyıldız 1996: 5). During the pilgrimage seasons in 1838, 1839, and 1840, cholera incidence began to increase to a certain extent in Hejaz (Sarıyıldız, 2001: 310). According to Şehsuvaroğlu, pilgrims carried cholera; and the disease became more prominent than the plague in the second half of the 19th century (Şehsuvaroğlu, 1954: 283-284). With its high contagiousness, cholera is an important disease to be careful in burial procedures. On May 4, 1866 (20 Zilhicce 1282), the Ministry of

Health asked for a report regarding whether Andon Vasiliyu, a member of Lesbos Island, who died and was likely to carry an infectious disease with signs of cholera on his body, was buried by health (burial) regulations (BOA, A.,MKT.MHM. 355,4). Tophane-yi Amire Müşirliği officially asked the Quarantine Directorate of the State of Archipelago regarding the final status of the burial of Andon Vasiliyu. Necessary quarantine measures were asked to be taken due to the conditions, emphasizing that there was no cholera disease anywhere in the country so as not to cause any worry about the situation. However, the Deputy Austrian Consul Monsieur Barcili reported that there were signs of cholera in the corpse he examined (BOA, A., MKT.MHM. 356, 19). No other documents were found in the archive about the course of events in this regard.

Picture 1: Port de Lesbos (Choiseul-Gouffier, 1782: 70)



Another case of cholera is related to a tradesman travelling from Lesbos to Istanbul. General Commission of Health experts reported in a medical report addressed to the Ministry of Health that the disease in Kalaycı Mustafa, who came to Dersaadet from Lesbos on the Necid Ferry on March 1, 1894 (23 Şaban 1311), was not cholera. Şehremaneti (the Municipality) was informed that this incident was merely a morbid event (BOA, Y.A., HUS. 291, 6). However, upon the occurrence of cholera disease in another person from the same area, this person was also examined by Physician Aytipavi, the French Secretary of the Medical Council. After the medical examination, the person was reported not to have caught cholera. The patient was also examined by Mirliva Esiraki, Feyzi Pasha, and Teyalis Efendi, members of the Council of Health. It was then published in the newspapers that this situation was just a morbid incident. Since two suspected patients travelled on the Necid Ferry, the medical reports were also shared with the captain of the ferry and it was stated that there was no illness. The Sanitary Inspectorate compiled a report that they took necessary sanitary measures, sending it to the Ministry of Health (BOA,A.,MKT.MHM. 594, 16).

Smallpox is a highly contagious disease that can be seen in people of all ages and sexes, causing high fever by pouring purulent pustules, and leaving bad scars on the face (Süheyl, 1948 and Eroğlu; Dinç-Şimşek, 2014: 193-208). The causative agent of Smallpox is a virus from the Poxvirus group; the disease is found in wounds and transmitted by contacting the patient and their belongings, the flies, and inhaling the infected air. The disease begins with sudden and severe symptoms and manifests itself with headache, back pain, vomiting, muscle stiffness, and fever up to 39-40 °C. During the initial period of 3-4

days, redness and fever are observed in the body. Red spots appear in almost all parts of the body (Scholtissek, 1979: 1–36). Although the lethality of the disease is low, it was quite dangerous at that time because it caused blindness in children (Özdemir, 200:398). Smallpox was considered a highly important disease due to its contagious and fatal nature; a certificate of vaccination was given to those who were vaccinated. If vaccination worked, the certification would be filled by the officer and sealed by the imam or the mukhtar, the local authorities. Stubs of vaccination certificates given to vaccinated children were to be taken and sealed by the officers of the local administrative council, and the document would be forwarded to the Ministry of Health (*Tıbbiye Nezareti*). A telegram was sent to the provincial government, demanding for a vaccinator and enough vaccination tubes for the treatment of smallpox that emerged in Lesbos Island on March 20, 1869 (6 Zilhicce 1285); a notification was sent to the District Governorship of the State of Archipelago (BOA, A.MKT,MHM,439,50). On April 14, 1869 (2 Muharrem 1286), Bekir Efendi from Mekteb-i Tıbbiye-i Şahane (the Medical School) came to the island with a per diem allowance of 500 kurus due to the emergence of smallpox. He started to work with a salary of 1000 kurus,§ and a letter was sent to the Ministry of Finance for the delivery of the vaccines to the island (BOA,I.DH. 589 ,41033). On May 22, 1893 (24 Şevval 1309), a total of 61 students, male and female, from the primary school within Midilli High School were vaccinated for smallpox by the School of Medicine (BOA,MF,MKT,167,44).

It is evident from the documents that smallpox was quite contagious. Unfortunately, another factor that caused high incidence rates was the ignorance of the people and their non-compliance with prohibitions. In the spread of diseases in a narrow area, religious festivals and places used collectively such as hospitals, mosques and churches were largely effective, while the increase in the rate of infection in the household was largely affected by several factors such as family members taking care of sick people, using household items collectively, and continuing to use the belongings of deceased people. Apart from these, adverse environmental conditions were also influential factors, such as the polluted water flowing from the open, spread of sewage water, and air pollution (Briggs, 1961: 76-96; Post, 1976: 14-37). Smallpox broke out once again on August 11, 1894 in Molova District, located in the north of Lesbos Island in the State of Archipelago (*Cezayir-i Bahr-ı Sefid*). Since the disease could continue for a long time like six months, the Sanitary Inspector, who was sent to the district, was asked to examine where the disease originated and whereabouts it had transmitted. As a result of the investigations, it was reported on January 12, 1895 that Miller Alexi's son brought the microbe to Lesbos Island as a result of his visit to Anatolia on August 11, 1894. The number of the infected increased after home visits from neighbouring households. The people who were suspicious of the disease sought help from the Sanitary Department of the Municipality of Lesbos. Although the house was sealed by the guards of the municipality, the household came out from the back of their houses and talked to their neighbours, and 7 children from the same village and 94 children from the surrounding areas caught severe smallpox until when the report was compiled. More than 30 died from the disease in Molova (BOA, DH. MKT 354, 47). Besides, Albanian Hamit's 23-year-old son Tosun fell ill with smallpox on March 18, 1895 and died in late July. Since it was not known that the child's disease was smallpox and the house of the deceased was not cordoned off, the disease spread to the surrounding households. Thereupon, the four sick households were sealed by the municipal guards. A group of influential people around went to the Municipal Office and asked for an investigation about the measures to be taken. As a result of the negotiations, the diseased individuals were asked to be cordoned off and vaccinated. Two civil servants, three physicians, and a registrar were assigned from the municipality to do so. Increased measures were requested in the district. It had been ensured that the streets would be cleaned, and if there were deaths, their corpses would be checked by the physician. With these measures, the epidemic in Molova District was brought under control eight months later at the end of March (BOA, DH.MKT, 354, 47).

Vaccination continued without interruption. The State of Archipelago was informed that the vaccine certificates (Aşı Şahadetnâmesi) belonging to Rhodes Town and its villages and the vaccines belonging to Lesbos Sanjak were sent (BOA, DH. MKT. 2344, 72). On September 29, 1900 (4 Cemâziyelâhir 1318), the number of certificates given to the State of the Archipelago for smallpox for boys and girls in Lesbos Island was asked to be reported (BOA, DH.MKTT, 2408, 80). Again, it was reported that the certificates to be applied for this disease were sent to the State of Archipelago on August 12, 1900 (15 Rebiülâhir 1318) (BOA, DH, MKT, 2388, 66). Vaccination applications in the Ottoman Empire were followed by the certificate stubs, statistics were kept at the end of each year, and further

reports were requested by dispatching inspectors to the places where the epidemic could not be controlled despite vaccination activities.

As evident in the documents written to the Province of Cezayir-i Bahr-i Sefid, 16 persons died from smallpox, which emerged on May 2, 1909 (April 29, 1325). It is striking to witness so many deaths in a few months in Lesbos, which is close to the capital city (Payitaht) and considered relatively civilized. On December 6, 1907 (22 Zilkade 1325), Viçno Efendi, the provincial sanitary inspector, was asked to come to the region in order to eliminate smallpox that occurred in the Mandemanda neighborhood of Latyon Village in Molova District of Lesbos Sanjak. It had been written to the local administration that the provisions of the plague vaccination regulations should be strictly enforced and that those breaking the law (sıhhat-i umumiye-i muhafazayı şedide) should be punished for jeopardizing public health. The Council of Medicine and Public Health Commission was informed regarding the subject. (BOA, DH, MUI, 42, 64). In line with the documents registered in the governorship, the document dated 5 December 1909 (22 Zilkade 1327) reveals that the indifference of the headmen was influential in the spread of the disease since this disease continued for a period of about three months. The local administration was ordered to report any culpability (takibat-i kanuniyye), if any, and the Midilli Governorate was informed. (BOA, DH, MUI, 42, 64-2). Since the predicament, which affected many children near the capital city in a short time, would be a shame for the state, it was of importance to take necessary measures as soon as possible. Necessary measures were taken accordingly to prevent the spread of the disease, and the cause of its occurrence was investigated. In the meantime, it was emphasized that three physicians should be deployed to the region. Since the disease occurred in the Mandemanda District, it was reported that a child died there. The deceased child's aunt and household members were vaccinated; 300 people had been vaccinated in total; and the epidemic was suppressed in the neighborhood by doing so. The documents registered at Lesbos mutasarrif's office revealed that the emergence of the disease was the death of a man who buried deceased people, stating that there was a growing concern about the spread of the disease. Smallpox was tried to be prevented by vaccination; however, it had been observed that outbreaks occurred intermittently due to belated vaccines or ineffective vaccination. It was also stated that the necessary action to be taken in such cases was cleansing (Tanzifât and Tathirat) and inform the public. (BOA, DH, MUI, 42, 64-9).

Typhoid (humma-i nemşi - humma-i typhoid) was also mentioned in the documents. Typhoid, a bacterial disease ("Instruction on the Duty of Municipal Health Directorate" published in 1913), is transmitted from unhealthy, dirty drinking water and the food that is not prepared under adequate hygienic conditions (Ergin, 1995: 3279). Caused by a bacterium called *Salmonella typhi*, the disease is contagious. Along with high fever, it can cause abdominal pain, headache, and loss of appetite. The disease was observed to occur more in the winter months, especially in places where poverty was common (Öz, 1944: 295-296; Uras, 1944: 5-6). Since it infected the soldiers during the war, the disease was also named "War/Army Fever". Apart from these names, the disease was also known as "spotted typhoid" during the First World War (Özer, 2016: 220).

On March 4, 1840 (29 Zilhicce 1255), it was reported that El-Hac Mehmed Paşa, a former janissary lord who served in Lesbos, died of humma-i muhrika on May 27, and his estate was sealed by Süleyman the Minister of Midilli (BOA,C.A.S., 459, 19122 and Lisânü'l-etibbâ,2018,378). The document stated that only inheritance transactions had been made; and no other information was given. Typhoid is a contagious disease that can result in death if left untreated. It is evident that the Ottoman state attached importance to typhoid. Vaccination had been initiated for this disease, just as in the smallpox disease (Ergin, 1995, Cilt 6: 3597-3599).

Measles is also a highly contagious disease that spreads by respiratory route (Hatipoğlu, - Hatipoğlu -Kuzdan - Şanlı, Engerek, - Şiraneci., 2013: 105). The emergence of measles occurs every 2 to 5 years and the epidemic lasts for 3-4 months. Its symptoms include fever, fatigue, and uneasiness, followed by redness of the eyes, cough, runny nose, and rarely joint pain. Within three to four days, red rashes appear on the skin. Starting in the head, the rashes go down to the feet in less than a week. Fever goes down within five days (Özdemir – Kanyılmaz, 2004: 31–38). On May 18, 1899 (6 Mayıs 1315), a document was sent to the Governorship of Lesbos, reporting that the students of High School had measles. Upon the approval by the Sanitary Inspectorate, the school was obliged to have a week off (BOA, MF, MKT, 450, 19). As in the case of measles, it was agreed upon the approval by the Health Inspectorate that the schools in the region would be suspended for a period of one week when the meningitis disease occurred in Lesbos on March 17, 1909 (BOA,MF, IBT,231,7).

The State of Archipelago sent a document dated May 17, 1909 (26 Rebiülahir 1327) to the Ministry of Internal Affairs; and it was reported that a disease occurred in the Midilli Military Barracks because of the extreme heat and crowded environment without mentioning the name of it, and a new place was required since there was no place left in the hospital in the fort. It was requested that the supply of materials required for the hospital procedures be met immediately. A telegram dated 13 July 1909 (30 June 1325) reveals that the Province of Cezayir-i Bahr-i Sefid was allocated 10 thousand kurus to be spent with the notification made. The battalion commander was asked for permission to pay the necessary hospital expenses from the military budget. (BOA, BEO, 3599, 269869).

Rabies is another disease mentioned in the archive (Güler, 2001: 114-124); and the treatment was carried out in Istanbul. Rabies is found in the saliva of animals and people usually get rabies from the bite of a rabid animal. It is found in the adipose tissue and salivary gland of the bat, its natural host. It was reported that Oyanyus Esperidus, one of the Greek subjects, was first sent to Rhodes Hospital on September 4, 1906 (15 Recep 1324) in the Province of Bahr-i Sefid to be interned for swearing (*Fezahat-ı lisaniyeye*) like many prisoners (İşbilir, 2016: 5-7), and then he was sent to Dersaadet for treatment due to being bitten by a rabid dog (*kelb*). Before this document, it would be appropriate to mention the notification sent to all provinces and sanjaks. According to the document in question, six people who were bitten by a rabid dog in Thessaloniki came to the treatment center for treatment from Lesbos thirty-three days later, and one person ten days later. It was emphasized that it was possible to reach Dersaadet in two days by train and four days by ferry from Thessaloniki, and in three days from Lesbos. The notification also made it clear that the sooner the treatment started, the more positive results would be obtained with Pasteur's treatment method (*usûl-i mahsusa*) (DH.MKT 2366-80). It was reported that the person was asked to be delivered to the Greek Consulate; and his loss would be compensated since his trial could not be initiated on time (BOA, BEO 2903, 217684). Regarding the request of the Greek consul on this matter, it was stated that the Greek government did not find the situation appropriate in accordance with the consular agreement in the action taken against the Greek person named in the response from Babiali (Sublime Port), and that it would be necessary to make a decision by the state. Afterwards, the person was asked to be expelled from the Ottoman State. Upon the letter from Lesbos, it was made clear that he was bitten by a rabid dog and sent to Istanbul for treatment, and that he returned to Lesbos. At the end of the month, it was reported that the person would be sent on the ferry following his treatment. Again, the Gendarmerie was asked to take a picture of the detainee, and to inform all the ports en route about the status of the person, so that he would not step on any piers of the Ottoman Empire (BOA, BEO, 2917, 218763). The state had tried to provide financial support to those who needed treatment for rabies. In cases where the support foreseen in the budget was found to be insufficient, extra additions were made to the state budget. It was deemed appropriate to provide the necessary financial support to the public through municipalities. Almost one month later, the treatment expenses of the person, amounting to 45 kuruş to be compensated by municipality, were sent to the Treatment Center of Mekteb-i Tıbbiye Daülkelb (Sarıyıldız 1998: 321) in Dersaadet from Lesbos for rabies treatment (BOA, ZB 491, 64 and ZB 491-60). Follow-up procedures continued for those who recovered from this disease. The well-being of the patients was maintained by the official authorities for nearly two months; in doing so, the consequences of the disease was controlled; and the records were reported to the competent authorities in Istanbul (Çavuş, 2017: 55-56).

It is apparent that there were many diseases on the island. Smallpox and cholera whose contagion rate was especially high were common. The state tried to fight the diseases as much as possible, following up the situation through the medical inspectors in cases where the disease was serious.

PLAGUE DISEASE AND 1907 PLAGUE

In the 14th century, Ibn-i Battuta wrote that there was a plague outbreak in the Far East and the Middle East (Ibn-i Battuta 2000: volume 2, 755-861-924-925). Gerlach also noted that there was a plague in Tatarstan in the 16th century (Gerlach, 2010, Vol 1: 197). In fact, plague was common almost everywhere in the world. Plague was one of the biggest diseases prevailing in Europe in the 15th and 18th centuries. Just as in the Ottoman Empire, the rich in Europe would retreat to rural mansions and try to stay away from the disease by doing so. In Europe; quarantine, surveillance, guard, fragrant frankincense, disinfection, road closure, house arrest, tickets, health certificates would be applied when the disease occurred. The precautions taken against this disease varied all over the world (Braudel, 2004: 77-79).

Plague has been a well-known bacterial disease since ancient times (Ünver, 1935:70-71). Different types of this disease can manifest themselves with various symptoms. In addition to high fever, pain in head, waist and legs, and flushes due to bites from fleas are among the signs of the plague type called "Bubonic Plague". On the other hand, in the type of plague called "**Septicemic Plague**" (Varlık, 2011: 175); trembling, weight loss, disruption of bowel order, vomiting, high fever, bleeding from the mouth and nose, blackening caused by the death of tissues (necrosis), and internal bleeding are among the most important symptoms. Coughing, breathing difficulties, going into shock, blood in sputum, pallor, and a feeling of extreme thirst are the signs of a plague called "Pneumonic plague". High fever and bleeding caused by internal organs are common symptoms of all types of plague. Since *Yersinia Pestis* bacterium causes inflammation in the body, it causes high fever. Besides, due to damage of internal organs, internal bleeding is quite common. One must take involuntary bleeding occurring in certain parts of the body along with high fever seriously, and a medical professional should be consulted. Lymph node swelling is an important symptom that points to the disease (Ayar-Kılıç, 2017: 164).

Plague often poses more threat in the hot summer months, while epidemics have a low incidence during the cold winter. However, it is difficult to categorize the occurrence and spread of the disease seasonally. Studies on plague have primarily proved that it is a disease that affects rodents and is transmitted to humans by fleas infected by these rodents. For this reason, the most accepted measures to prevent the disease are the control of mice and rodents, compliance with hygiene rules, and vaccination. It is noteworthy that the land and sea trade routes, which were the spread route of plague, rapidly transmitted by rats from one port city to other port cities and hinterland or from the mountainous regions of the interior to the port cities (Ayar-Kılıç, 2017: 164). At the turn of the 20th century, it was a fact known by the Ottoman health authorities that if the rats could be coped with, the plague could also be coped with.

Only precautionary activities were mentioned about the plague disease on the island in 1905, and no sick person has been encountered in the annuals. In the first implementations of the Quarantine Council (Meclis-i Umur-ı Sıhhiye), it is noticeable that the main aim was naturally to protect Istanbul from epidemic diseases. Taking necessary quarantine measures, they also tried to control the health status of the capital and its surroundings. A document dated August 27, 1905 (25 Cemâziyelâhir 1323) reported that plague occurred on Lesbos Island, cholera occurred in Russia, and smallpox occurred in Austria. Beyoğlu Municipality was sent a document to maintain the cleanliness of Istanbul, the capital, at all times, to deploy a physician in the public hospital for examination, to continue examining the suspected, and to send a report of the procedures made for this purpose (BOA, ZB, 598, 11). Another document to Beyoğlu Governorship ensued in two weeks concerning the same issue, stating that a severe illness was breaking up due to the density of patients coming to the physicians; the public was asked not to go ashore, even the passengers coming from the sea should be kept by residing in the Dersaadet Scientific Administration. The aim was to ensure that the sanitary committee would come to the region as soon as possible and record the names of the people coming from the surrounding areas by Greek ferry and going to the other parts from Beyoğlu to reach people easily in case of illness, and their compass showing their place of residence would be kept (BOA, ZB, 390, 101). On October 7, 1905 (7 Şaban 1323), the local government was informed that a suspected disease emerged on Lesbos Island, asking for a sanitary delegation to be sent to Lesbos to make sure necessary quarantine measures were in place. There was public concern due to the illness. Necessary steps were taken to start the implementation of scientific research and medical measures, and to bring a medical delegation (BOA, DH, ŞFR, 389, 11). In 1905, there was no plague disease on the island; however, it is apparent that some measures were taken against a suspected threat of disease.

Unfortunately, there was no municipal physician in the region on September 4, when the plague first occurred. On September 4, 1907 (26 Recep 1325), a memorandum describing the peril of the situation was sent from the Midilli Governor to the State of Archipelago because the municipal physician had been on leave for three months. Istanbul and the Ministry of Public School (Mekteb-i Umumiye Nezareti) were informed about the situation to seek help to protect public health and prevent the spread of disease (BOA, A., MKT. MHM. 569, 19)⁴. Ahmet İhsan Efendi, Karahisar Şarki Municipality Physician, was appointed to the region. After a month, bacteriologist teacher Mirliva Aristidi Pasha from Imperial School of Medicine (Mekteb-i Tıbbiyye-i Şahâne), Bacteriologist Major Rifat and assistant physician

⁴ In the Ottoman Empire, Karahisar-ı Şarkî is today's Şebinkarahisar. Şebinkarahisar is the largest district in Giresun. A very large administrative structure based on the borders of Sivas, Canik and Trabzon. Refer to Fatma Acun (2006) for further information.

Captain Mehmet Salim Ali from Imperial School of Medicine, and assistant scientific scholar Mister Navaş Novaldi were asked to be appointed immediately because of the suspected illness in Lesbos. Salary payments were projected as one thousand five hundred kurus to Mister Rifat and one thousand kurus to Captain Saim and Mister Navalidin, and each was asked to be given a per diem allowance in proportion to their salary (BOA, I.SH, 5, 22). It was requested with a document to give subsistence twice as the allocation and inspection of Aristidi Pasha, 1500 to Mister Rifat, 1000 kurus to Mister Nurettin, and these people were also requested to pay extra attention to their cleanliness in order to prevent the spread of the disease (BOA, BEO, 3184, 238789). In total, 4161 kurus was needed (BOA, DH. MKT, 1198, 4, 51). Following the first case on the island, it is evident that the Governorship of Izmir formed a team of physicians and bacteriologists sent from Istanbul with the health committee. On October 20, 1907, Lesbos Governorship wrote to the State of Archipelago that there was no physician on the island since the municipal physician had been on leave for three months despite the presence of the disease, and a bacteriologist was urgently needed. Thereafter, a physician was requested from the Imperial Military School of Medicine (Mekâtib-i Askeriye-i Şahâne Nezâreti) (BOA, DH. MKT, 1198, 4). In the meantime, the urgent request of several physicians to come to the region was iterated (BOA, I.HUS, 159, 28).

In the document dated September 4, 1907 (26 Recep 1325), it was reported that a plague outbreak occurred in the central district of Lesbos. It was requested that the places where the disease was seen should be taken under control immediately, the contamination should be prevented, scientific examination should be made, and measures should be taken accordingly by determining where the disease originated. It was emphasized in many subsequent documents to send a bacteriologist in order to diagnose the disease. It was particularly emphasized that the money spent for this disease must be covered by the treasury. The 45-year-old Greek Grocer Yorgi and his 13-year-old apprentice were diagnosed with bubonic plague after the first examination. A bacteriologist from Izmir Sanjak was requested to come for hygiene procedures, and Mister Major Rifat was asked to come to the region by the ferry with the same name as the Public Military School (Umumi Mekatib-i Askeriye) and examine the patients. Disinfection practices were the most effective way to eradicate plague in cities. It was reported that the Greek Hospital in the region had been cleaned for ten days and other patients were left.

Grocer Yorgi, the first person to have the disease, was treated by giving drugs subcutaneously with a needle (injection method), and his father and two more people had the symptoms of the disease. According to the same report, infected mice were encountered in some neighbourhoods. It is noteworthy to have found traces of the disease in mice, especially around the hospital. Three relatives of the sick grocer recovered over time. The observations revealed that there was no disease in people who were cordoned. The bacteriologist who came from Izmir injected the patients; two of the confectioner's apprentices were infected with plague by mice found dead in sacks; Grocer Yorgi, who helped them pick up the dead mouse and lift it, caught the disease, which was detected with the manifestations of symptoms such as swelling in the groin. Cordoned ones were also the contacts infected by these three people. Shortly after, the bacteriologist from Istanbul found that the disease had cleared up over time with the medicine given to these people, suggesting that the disease could also spread to Rhodes and Jaffa in the surrounding areas. Medical inspections were therefore tightened in those places. People arriving in Lesbos by boat were allowed to be taken to the city after an examination. The infected were cordoned for exactly one month. The documents sent from the State of Archipelago Governorship to the Ministry of Internal Affairs on October 17, 1907 (Rumi October/November 4, 1323) reported that quarantine was applied in the Homeland Hospital with the emergence of disease in three people in Lesbos. Cleaning procedures were applied in this shop upon discovery that the disease spread from the grocery store. In the document written to the Ministry of Internal Affairs, it was requested to send a few physicians to help the municipal physician in Lesbos to prevent the spread of the disease (BOA, DH.ŞFR. 388, 125). It was arranged that the houses, hospitals, and shops from which the disease had spread should be thoroughly cleaned and opened afterwards. Another grocery apprentice became ill in the past month, during which there was cholera in Russia and smallpox in Austria. Information about the names and location was requested from the people who would go to Istanbul from this region. If anyone arrived in Lesbos without customs, the information of these people was required to be recorded, and in case of any illness, they would be quarantined where they were. People with suspected illnesses were asked to keep the necessary reports after the Sanitary Committee examined them.

Necessary health measures were taken for the prevention of other infectious diseases such as smallpox. The Sanitation Commissions and the Ministry of Custody were asked to do whatever was

necessary to follow up on these procedures regularly. It was iterated that passengers were strictly not allowed to land at ports that would stop at Lesbos so as to prevent the passage of mice in the transportation of goods coming to the region. It was also stated to check whether the patients were infected again due to the time elapsed. With the local Greek Metropolitan deputy, it was ensured that all shops and stores in the market and bazaar were cleaned in a specific order upon the Municipal Council Delegation covered expenses. In the document written by the State of Archipelago, it was requested that the cost borne should be compensated by the government. The Ministry of Internal Affairs sent a document stating that the procedures were entirely appropriate, and yet they responded that it was impossible to reimburse the cost.

Over time, there had been an increase in the number of people who caught the disease. As the measures continued, a few physicians were asked to be sent to Lesbos Island. As a result of the examination by the physicians, the houses of the Merchant Haji Ilya and 19-year-old Katzi from Molveh were cordoned off, gendarmerie took over the control, shops and houses were sealed. Although the measures were increased day and night, the disease continued to transmit. It was stated that the plague disease seen in these people was at the onset of the disease. It was requested to increase the number of medical facilities close to the port. Upon the emergence of the disease in the baker's apprentice, a bacteriologist was demanded immediately, stating that the sick needed to be kept under control until the bacteriologist arrived. Bacteriologist Captain Mehmet from the Provincial Sanitary Inspectorate came to the island with the Ferry Special. The severe condition of the patient was kept under control by measuring his fever in the morning and evening. The patient's fever was 37.5° C during the day and 38° C at night. The illness in other individuals was detected as a result of urinalysis. Similar symptoms were observed in their relatives as well. On the discovery that they were caught with plague through the diagnosis of the swelling in their groin, the disease was confirmed in the report given by the bacteriologist, who informed the Ministry of Health. The patient's house was cordoned off. However, it was stated that there was no such circumstance to impede local trade. This situation was written to the State of Archipelago, demanding allowance for this job. More importantly, the authorities engaged in an intense disinfection endeavour first in the places where plague occurred, then almost in the whole city; the quarantine physician was also informed that the hospital where the patients were receiving treatment would be cordoned off. No information was found about how many people were sick during quarantine in the vicinity. Whether other people caught the disease was not examined either (BOA DH.MKT, 1198, 4, 39). Of the people with the disease, especially two of them had the symptoms; condition of the first was observed to be good, but the other was in a bad condition.

Evidence suggests that many inter-regional and regional factors were effective in turning diseases into epidemics as well as spreading them to wider regions. The illness also appeared in Dikili due to those travelling from Lesbos to Dikili⁵. In central town of Dikili, the Cavalry Gendarmerie Troops kept security on the coasts, starting control and cleaning process in the region (BOA, DH. MKT 1198, 4, 21). In Dikili, on September 11, 1907, the seventh day of the disease, it was reported that no other infected person was encountered and that the fever of the sick person was 37°C, considered normal, and he was able to perform routines in house with ease (BOA, DH. MKT, 1198, 4, 29). It was also reported that the patient in Dikili was a 19-year-old Greek boy; he was in good condition and was kept under observation for thirteen days as there were no other patients in the area. The sick Greek boy asked for permission to travel after his general examination was found to be in good condition. According to the letter sent to the Health Inspector, the Municipality Physician needed to come to Dikili and Sanitary Inspector to Izmir (BOA, DH.MKT 1198, 4, 31). The medical examination of the patient was maintained by the physicians, reiterating that strict measures should continue, and the patient should not be allowed to travel to prevent the disease from spreading (BOA, DH.MKT, 1198, 4, 37). The patient's house was cordoned; it was also underlined that there was no such circumstance to impede local trade (BOA, DH.MKT, 1198, 4, 43). Daily fever records of the patient were also reported; the patient's fever was normal, and his condition was not severe; it was asked that his treatment should be terminated. In addition, it was emphasized that necessary measures should be taken in Rhodes Island and Jaffa, which were in contact with Lesbos Island. Thereafter, the document from Dikili dated on November 28, 1907 (22 Şevval 1325) emphasized that two people were diagnosed with the disease in the centre, and taking necessary precautions was of significance (BOA, HR.IM. 164, 3-2).

⁵ Dikili County, which was within the borders of Izmir Sanjak in the Ottoman Empire, is situated on the Aegean Sea coast across Lesbos Island.

Serum was one of the most important treatment methods for plague disease. Vaccination applications also needed to be considered an effective protection method against the plague. Serum was requested from the Pasteur Institute in Paris for the treatment of the disease. The price of 10 cm bottles was two francs, and it was arranged to order 200 bottles of plague serum in 50-cm bottles. It was reported that the fee of 500 francs would be paid; production was requested immediately. The Ministry of Finance reported that it was not possible to pay for all the serum (BOA, DH. MKT, 1198, 4, 98). One part of the payment was demanded from Umur-u Tibbiye-i Mülkiye revenues with a document sent to the Imperial Military School of Medicine (Mekاتب-i Askeriye-i Şahane Nezareti) (BOA, DH. MKT, 1198,4,88). It was stated that the remaining part of the payment should be covered by the local municipality, emphasizing that 500 francs should be paid as consignees to ensure public health, and 200 tubes of plague serum should be brought to Lesbos immediately (BOA, DH.MKT.1198, 4, 88,90, 98).

At the beginning of November, strict disinfection procedures were requested in addition to sanitary measures in order to eliminate the plague in Lesbos (BOA, BEO 3177, 238202). About two weeks later, it was written to the Imperial School of Medicine that the plague disappeared in Lesbos, where there was no incident of the disease for 17 days; the State of Archipelago was informed to terminate sanitary restrictions (BOA, BEO, 3183, 238673).

A team of medical professionals was requested to be sent to the region for the treatment and elimination of the plague in Lesbos. However, the measures by the state did not please the public. Since the measures were confined to a few pharmaceuticals with the "Muzâdd-ı Taaffün" sent in limited quantity, people had gone through great sorrow and disappointment⁶. The State of Archipelago was urged to take necessary health measures to end the grievance. As a result of the reactions to the proposal to collect some expenses from the public, it was emphasized that the municipality did not act properly regarding the financial support. It was stated that the municipality, which did not provide the public with aid, had financial difficulties. 200 thousand liras of financial aid were given from the Port Authority Customs with the intervention of the regime administration to help the public. This approach created a deep disappointment in the public (BOA, BEO, 3177, 238201).

At the beginning of November, after the people coming from Istanbul performed their duties, they were asked to be careful about the disease and to apply the necessary hygiene procedures to prevent the spread of the disease outside the island (BOA, BEO, 3183, 238717). It was stated that the expenses of the individuals would be reimbursed together with their salaries. After seventeen days passed, there were no sick people left on the island; it was underlined that life should return to normal. In another document, it was stated that there was no need for the other medical team to come to the island (BOA, DH. MKT, 1198, 4, 63). In the letter received, the restrictions on those leaving the island were lifted by the decision of the Ministry of Internal Affairs.

In the documents received on November 23, 1907 (17 Şevval 1325), it was reported that the Sanitary Committee under the administration of Aristidi Pasha went to Lesbos and carried out the necessary precautions and medical cleaning procedures. No illness was documented in the city for 23 days. It was stated that the necessary investigation was made following the treatment with the emergence of the disease to prevent the spread; since there was no need for the delegation to reside there, officials could come back, and the situation was written to the Imperial Military School of Medicine (Mekاتب-i Askeriye-i Şahane Nezareti) (BOA, BEO 3190, 239196).

Since Lesbos was situated on main transportation routes, the first measure to take was aimed at Istanbul. Measures were also taken in the cities the island is connected to. Within the framework of the steps taken due to the plague disease in Lesbos in the last week of July, the Medical Office was requested to be informed about where the passengers coming to Dersaadet would reside (BOA, ZB, 598, 52). In the document written to the Governorship of Islands on July 30, 1907 (R July 17, 1323), since the disease in Lesbos was suspected to be the plague, it was requested that the passengers coming from there should be kept under control, and boats were ordered not to be berthed; the restrictions were asked to be implemented immediately for the ferry passengers coming to the islands from Lesbos on the ferries belonging to Greece (BOA, ZB, 478, 145). Due to the disease that appeared in Lesbos in the last week of July, the local administration was ordered to take necessary sanitary measures and forbid the entry of people using Naval Steamboats. If the examinations proved to be a plague, those coming from the region would be asked to be quarantined. Particular efforts were made to prevent sick mice from entering cities

⁶ *Muzâdd-ı Taaffün* is the name given to antiseptics that prevent stinking and disinfect germs.

such as Istanbul or Izmir via ships arriving at ports. Additionally, it was deemed appropriate to act by the "Killing Directory" (**İtlaf Nizamnamesi**) to prevent mice from landing (Düstur, 1. Tertip, VII, 1941:812-815), and the goods to be brought to the region were requested to be transferred from the piers approved by the Ministry of Health (BOA, ZB, 46, 53)⁷.

These measures were followed by medal giving (order of Osmanieh) to encourage the service to the state and to increase the loyalty of the people to the state, which was also the symbol of the Ottoman state's understanding of independence. Being more magnificent than medals and even decorated with precious stones to be given to citizens and foreigners who were successful in government service, who demonstrated loyalty, sacrifice and utility to the state, orders were manufactured and distributed with large expenditures from the state budget, becoming especially widespread in the period of Sultan Mahmut II (1808-1839) (Tekini, 2014: 393-411). On November 11, 1893 (2 Cemazievvel 1311), the document written to the Ministry of Internal Affairs from the State of Archipelago reported that Midilli Governor Hıfzı Pasha was given a third-rank Ottoman Order for his good services in his office to prevent the cholera disease that emerged in Izmir spreading to the surrounding islands and provinces (BOA, DH, MKT, 213,52). On January 29, 1908 (25 Zilhicce 1325), it was reported that the Imperial Military School of Medicine awarded Provincial Sanitary Inspector Mister Voçino, who had beneficial services and efforts for the eradication of the plague disease that appeared in Lesbos in 1907 by changing his rank from the previous one to the upper class, which is the second rank; Lesbos Customs Administration Chemist Captain Süreyya and Mister Physician Mincolbırlo Sirlanko, honorary operator of Lesbos Greek Hospital, were awarded the fourth-rank Ottoman Order; the municipality deputy physician Mister Yorgi Buluri was awarded the fourth-rank Ottoman Order; and Gureba Hospital Director Greek Physician Luçarko Mordos, Mister Tordos Todorsyari, one of the physicians, were awarded the-fifth rank Order of the Medjidie. Also, the State of Archipelago wrote to the Ministry of Internal Affairs to raise the rank of Provincial Health Inspector Mister Voçino (BOA, DH. MKT 1228, 4).

Upon the emergence of the plague disease, necessary precautions were taken due to the susceptible structure of the region. On February 15, 1908 (R February 2, 1323), since the Midilli Sanitary Delegation agreed that the region was open to severe diseases, they recommended purchasing a drying oven (Etiv), an oven produced for germ production, sterilization, heating, cooking or drying at certain temperatures. Made of two layers of sheet metal and impermeable, the drying ovens were in different volumes, and the temperature could be adjusted between 60° C and 250° C with analogue thermostats. The annuals reveal that two types of drying machines were used to combat epidemic diseases in the 19th century: drying oven and autoclave machine. Among these machines, the disinfecting rate of the drying oven was significantly higher than the other one. For this reason, it was mentioned as "fevâid-i azimeyi mucib", which can be translated as "extraordinary benefit" in the documents (Ozlü, 2017: 252). Although it was known that it would answer the purpose, the purchase was abandoned since the machine was considered to cost a large sum of money, and a Tebhir (steam) engine was ordered from the Hirs Company in Paris. With the shipment and installation, the machine was estimated to cost 300 Ottoman liras, and it was reported that the cost was not possible to be covered by the treasury, so it was decided for the expenses to be covered from the local municipality since it was against the provisions (BOA DH.MKT, 1198, 87).

No further information was found about the course of events on the island since the Ottoman Empire lost this region in 1912. However, a document dated September 30, 1925, related to the plague disease in the region coinciding with the early Republican period was sent to the Ministry of Foreign Affairs, addressed to the Document Huhud and the Sevahili Sanitary Directorate. The report reveals that there was a plague case in Lesbos without further detail (BOA, HR, IM, 160, 103).

RESULT

The documents on plague, typhoid, smallpox, measles and meningitis have revealed that many epidemic diseases prevailed on Lesbos Island, which belonged to the State of Archipelago (Cezayir-i Bahr-i Sefid). Situated in a strategically important location, Lesbos was one of the first places where quarantine was applied in the Ottoman Empire. It was, therefore, necessary to check whether the health conditions of the mariners were suitable on the way to Egypt (Alexandria), Palestine (Haifa), and the Hejaz Region from Istanbul. Apart from the prisons, detention centres, and tanneries in Lesbos,

⁷ Since it was known that mice transmitted the plague in the Ottoman Empire, all procedures were determined such as in which of the ships there would be mice killing; the method to be followed and all chemicals to be used during killing.

quarantine was applied for 24 hours to two weeks in cases where the disease was diagnosed in the crew on the ships visiting the region.

Various factors had a role in the spread of the diseases and their transition to other regions. The leading factor was the ships visiting the island and coming to the port. While the spread of diseases had increased in schools and hospitals, where there was intense interaction, the area of contamination had also increased through dirty water flowing from the open sewers. The documents also reveal that there were many positive factors in combating diseases on the island. It was vitally crucial for the local administration to intervene with the diseases and call for the necessary team from Istanbul and Izmir. However, the absence of a health officer on the island and the lack of sufficient sanitary materials and medicines to be used during an epidemic had brought about many issues in terms of the prevention of epidemic diseases. With the plague emerging in the region in 1907, it had become a necessity to take measures on the island and in other places to which the island was connected. A bacteriologist came from Istanbul and Izmir to diagnose the cases, and necessary measures were taken regarding the situation. The plague was transmitted to the two apprentices of the confectioners from dead rats in sacks; the contact started with three people after Grocer Yorgi threw the mouse away. Symptoms of the disease, also seen in baker's apprentice, were understood from the inguinal swelling. The disease had also spread to Anatolia due to those who travelled from Lesbos to Dikili. The infected were kept under constant observation, and their houses were also cordoned to reduce the contamination rate. The disease was brought under control in about a month. The plague-stricken individuals were placed in hospitals, and other patients inside were transferred to other places; their relatives were cordoned off, and the suspected were kept under close observation for a certain period. As a result, it is apparent that there were no deaths from the plague disease, and great efforts were made to prevent the commercial structure from being damaged by the disease. The Sanitation team, brought to the region, returned to Istanbul with the end of the disease. Medication was used primarily for the treatment of the disease; apart from this, serum was brought from the Pasteur Institute in Paris for the treatment. The people were not satisfied with the disease management by the state and the aid provided. As in many subjects, the most important issue reflected in the correspondence regarding the disease was unfortunately the economic situation. Most of the health expenditure was covered by the municipalities. It can be suggested that cordone was effective in the control of the plague and preventing the spread of the disease. This study featured the diseases on Lesbos Island and how the plague in 1907 affected the island and surrounding sanjaks in the light of archive documents in an attempt to shed light on how the Ottoman Empire maintained the health status of the public and how it dealt with diseases.

Authorship Contribution

This research was conducted with a single author.

Ethics Committee Statement

The research is based on document review. Ethics committee approval is not required for this study.

REFERENCES

- T.C. Cumhurbaşkanlığı Devlet Arşivleri Başkanlığı (Başbakanlık Osmanlı Arşivi) (BOA)**
Amedi Mektubi Kalemî A.,MKT.MHM. 356, 19, A.} MKT.MHM. 355, 4, A.} MKT.MHM, 561, 3; A.MKT, MHM, 439, 50, A.} MKT.MHM., 594,16, A., MKT. MHM. 569, 19.
Babıali Evrak Odası BEO, 3150, 236236, BEO, 3599, 269869; BEO, 3183, 238673 BEO 3190, 239196, BEO, 2917, 218763 BEO, 3184, 238789, BEO 3177, 238202, BEO, 3177, 238201, BEO 3183, 238717, BEO 2903, 217684.
Cevdet Tasnifi (Askeriye) C.. AS, 459, 19122.
Dahiliye Nezareti (Mektubi) DH.MKT. 1703, 81, DH,MKT,2388,66, DH,MUİ,42,64, ,DH. MKT 2401,96, DH,MKT,213,52, DH.MKT,1198,87 ; DH.MKT,1198,4-21, DH.MKT,1198,4- 29, DH.MKT,1198,4- 31, DH.MKT,1198,4- 37, DH.MKT,1198,4- 39, DH.MKT,1198,4- 43, DH.MKT,1198,4- 51, DH.MKT,1198,4- 63, DH.MKT,1198,4- 88, DH.MKT,1198,4- 90, DH.MKT,1198,4- 98; DH.MKT 1228 ,4, DH.MKT.2344 , 72; DH.MKT 354,47;DH.MKT 354,47 , DH.MKT,2366-80 ,DH.MKT,1198,4.
Dahiliye Nezareti (Islahat) DH.TMIK. S., 43, 32.

Dahiliye Nezareti (Şifre) DH.ŞFR. 388, 125, DH, ŞFR, 389, 11.
 Dahiliye Nezareti (Muhaberat-ı Umumiye İdaresi) DH, MUİ, 8, 6.
 Hariciye Tasnifi (İstanbul Murahhaslığı) HR, İM 160, 103, HR.İM, 164 , 3 HR.İM. 164, 3-2.
 Hariciye Tasnifi (Mektubi) HR.MKT, 541, 21, HR.MKT, 533, 96, HR. TH, 152, 9.
 Hariciye Tasnifi (Şifre) HR.SFR.3. 710 , 65
 İrade Tasnifi(Dahiliye) İ. DH. 589, 41033, İDH, 569, 41033.
 İrade Tasnifi (Hususi) İ.HUS, 159, 28.
 Maarif Nezareti(Mektubi) MF, MKT, 167, 44, MF, MKT, 450, 19
 Maarif Nezareti (Tedrisat-ı İbtidaiye Kalemi) MF, İBT, 231, 7.
 Yıldız Sarayı(Hususi) Y..A... HUS. 291, 60.
 Zaptiye ZB ,478 , 145; ZB 46,53,ZB,598 ,52, ZB,390,101, ZB 491 , 64 , ZB 491 , 60,ZB,598,11.

Research and Analysis Works

- Acun, F. (2006). *Karahisar-ı Şarki ve Koyluhisar Kazaları Örneğinde Osmanlı Taşra İdaresi*. Ankara: Türk Tarih Kurumu Yayınları.
- Akyol, M. (1970). *Kolera*. Ankara: Sağlık ve Sosyal Yardım Bakanlığı.
- Arıkan, Z. (2006). Midilli-İstanbul Arasında Zeytinyağı Ticareti. *Ankara Üniversitesi, Dil ve Tarih-Coğrafya Fakültesi, Tarih Araştırmaları Dergisi*, XXV(40), 1-28.
- Arıkan, Z. (2010). XIX. Yüzyılın İkinci Yarısında Midilli. *Türk Tarih Kongresi Bildirileri*, IV(Kısım. I), 1045-1074.
- Ayar, M. (2007). *Osmanlı Devletinde Kolera: İstanbul Örneği (1892–1895)*. İstanbul: Kitabevi Yayınları.
- Ayar, M. & Kılıç Y. (2017). Osmanlı'da Vebanın Sona Erişine Dair Bir Değerlendirme. *Türk Dünyası İncelemeleri Dergisi-Journal of Turkish World Studies*, 17(2), 163-181.
- Baykara Taşkaya, A. (2021). Midilli Adası'nda Sabun İmalatı. (Ed: M. Sarioğlu & F. Sansar). *Güncel İnsan ve Toplum Bilimleri Araştırmaları İçinde* (s.63-94). Liyon: Livre de Liyon.
- Barkan, Ö. L. & Meriçli, E. (1988). *Hüdâvendigar Livası Tahir Defterleri I*. Ankara: Türk Tarih Kurumu Yayınları.
- Braudel, F. (2004). *Maddi Uygarlık Ekonomi ve Kapitalizm XV.- XVIII. Yüzyıllar*, (çev: M. A. Kılıçbay). İstanbul: İletişim Yayınları.
- Briggs, A. (1961). Cholera and in the Nineteenth Century. *Past and Present*, 19(April 1961), 76–96.
- Bozkurt, N. (1994). Deri. *Diyanet Vakfı İslâm Ansiklopedisi*, (Vol. 9) İçinde (s. 174-175). İstanbul: Türkiye Diyanet Vakfı.
- Büyükkal, I. (2015). *Midilli-Egenin Huzur Köşesi*. İstanbul: Aya Yayınevi.
- Choiseul-Gouffier, M.G.A.F.,C .de. (1782). 1752-1817, *Voyage Pittoresque de la Grèce*. Paris.
- Cuinet, V. (1892). *La Turque D'Asie*. Vol 1. Paris: Ernest Leroux.
- Çadırcı, M. (1994). Tanzimat'ın Uygulanmasında Karşılaşılan Bazı Güçlükler. *Tanzimat'ın 150. Yıldönümü Uluslararası Sempozyumu İçinde* (s. 295-321). Ankara: Türk Tarih Kurumu Basımevi.
- Çadırcı, M. (2013). *Tanzimat Döneminde Anadolu Kentlerinin Sosyal ve Ekonomik Yapısı*. Ankara: Türk Tarih Kurumu Basımevi.
- Çavuş, R. (2017). II. Abdülhamid Döneminde Dâülkelp (Köpek Hastalığı-Kuduz) Tedavihanesi. *Vakanüvis-Uluslararası Tarih Araştırmaları Dergisi*, 2(1), 46-61.
- Darkot, B. (1942). Ayvalık. *İslam Ansiklopedisi*, (Vol. 2) İçinde (s. 878). İstanbul.
- Darkot, B. (1993). Midilli. *İslam Ansiklopedisi*, (Vol. VIII) İçinde (s. 282-284).İstanbul.
- Kaya, F. (2018). *Lisânü'l-Etibbâ (Tabiplerin Dili), Tabiplerin Dili, Metin Dizin*. İstanbul: Hiperlink Yayınları.
- Duran, F. S. (1996). *Büyük Atlas*. İstanbul: Kanaat Yayınları.
- Düstur, I. Tertip. VII. (1941). Ankara, 812-815.
- Erim, H. (1948). *Ayvalık Tarihi*. Ankara: Güney Matbaacılık.
- Eroğlu, H., Dinç G. & Şimşek, F. (2014). Osmanlı İmparatorluğunda Telkîh-i Cüderî (Çiçek Aşısı)". *Millî Folklor*, 26(101), 193-208.
- Ergin, O. N. (1995). *Mecelle-i Umûr-ı Belediye*, (Cilt: 9). İstanbul: Büyükşehir Belediyesi Yayınları.
- Gerlach, S. (2010). *Türkiye Günlüğü*, (Ed: K. Beydilli), (çev: Turkis Noyan), (Cilt: 2). İstanbul: Tarih Vakfı Yurt Yayınları.
- Gülesen, Ö. (1973). *Epidemiyoloji*. Ankara: Ayyıldız Matbaası.

- Hatipoğlu, N., Hatipoğlu, H., Kuzdan, C., Şanlı, K., Engerek, N & Şiraneci, R. (2013). Kızamık. *JOPP Dergi* 5(3), 105-113.
- İşbilir, Ö. (2016). Kalebend. *Diyanet Vakfı İslâm Ansiklopedisi, (Cilt: Ek-2)* İçinde (s.5-7). İstanbul: Türkiye Diyanet Vakfı.
- İbni Battuta Seyahatnamesi.* (2000). (çev: A.Sait Aykut), (Cilt: 2). İstanbul: Yapı Kredi Yayınları.
- Karpat, K. H. (1978). Ottoman Population Records and the Census of 1881/82-1893. *International Journal of Middle East Studies*, 0(9), 237-274
- Kanra, G. & Kara, A. (2001). Kuduz: Patogenez, Tanı ve Profilaksi. *Hacettepe Tıp Dergisi*, 32(2), 114 – 124.
- Kiel, M. (2005). Midilli . *Diyanet Vakfı İslâm Ansiklopedisi, (Vol. 30)* İçinde (s.11-14). İstanbul: Türkiye Diyanet Vakfı.
- Ortaylı, İ. (1985). *Osmanlıda Yerel Yönetim Geleneği*. İstanbul: Hil Yayınevi.
- Öz, T V. (1944). Epidemik Tifüs II. *Klinik*, 0(9), 295-297.
- Özdemir, H. (2005). *Salgın Hastalıklardan Ölümler 1914-1918*. Ankara :Türk Tarih Kurumu Basımevi .
- Özer, S. (2016). I. Dünya Savaşı'nda Osmanlı Devleti'nde Tifüs (Lekeli Humma) Salgını. *Belleten*, LXXX(287), 219-260.
- Oya, Ö. & Kanyılmaz, D. (2004). Yeni Eliminasyon Hedefi: Kızamık ve Epidemiyolojisi. *A.Ü.Tıp Fakültesi Mecmuası*, 57(1), 31-38.
- Özlu, Z. (2017). Osmanlı Devleti'nde Difteri Hastalığı ve Koruyucu Sağlık Hizmetlerine Dair Bulgular (19. Yüzyıl Sonları ve 20. Yüzyıl Başlarında). *Belleten*, 81(291), 419-480.
- Panzac, D. (2007). *Osmanlı Devleti'nde Veba (1700-1850)*. Çev: Serap Yılmaz. İstanbul: Tarih Vakfı Yurt Yayınları.
- Payzın, L. (2008). XVIII. Yüzyılda Midilli Adası. (Yayımlanmamış Yüksek Lisans Tezi). (Danışman: Yrd. Doç. Dr. Ayten Can Tunalı). Aydın: Adnan Menderes Üniversitesi, Sosyal Bilimler Enstitüsü.
- Post, J. D. (1976). Famine, Mortality, and Epidemic Disease in the Process of Modernization. *The Economic History Review*, 29(1), 14-37.
- Sarıyıldız, G. (1998). Osmanlıda Hıfzıssıhha. *Diyanet Vakfı İslâm Ansiklopedisi, (Cilt: 17)* İçinde (s.319-321). İstanbul: Türkiye Diyanet Vakfı.
- Sarıyıldız, G. (2000). XIX. Yüzyılda Osmanlı İmparatorluğu'nda Kolera Salgını. *Tarih Boyunca Anadolu'da Doğal Afetler ve Deprem Semineri Bildiriler, (22-23 Mayıs 2000)* İçinde 309-319. İstanbul.
- Sarıyıldız, G. (2001). *Hicaz Karantina Teşkilâtı (1865-1914)*. Ankara: Türk Tarih Kurumu Basımevi .
- Sarıyıldız, G. (2020). Karantina. *Diyanet Vakfı İslâm Ansiklopedisi, (Cilt: 24)* İçinde (s. 463-465). İstanbul: Türkiye Diyanet Vakfı.
- Şakiroğlu, M. (1993). Cezâyir-i Bahr-i Sefid. *Diyanet Vakfı İslâm Ansiklopedisi, (Vol: 7)* İçinde (s. 501-501). İstanbul: Türkiye Diyanet Vakfı.
- Şemsettin Sami. (1316). *Kâmûsü'l-A'lâm*, (Vol: 6). İstanbul: Mihran Matbaası.
- Şehsuvaroğlu, B. N. (1950). Chloler. *İstanbul Üniversitesi Tıp Fakültesi Mecmuası*, 1(3), 419-427.
- Şehsuvaroğlu, B. N. (1954). Tarihi Kolera Salgınları ve Osmanlı Türkiye. *İstanbul Üniversitesi, Tıp Fakültesi Mecmuası*, Ayı Basım, 282-299.
- Temel, M. (2008). *Atatürk Dönemi'nde Bulaşıcı ve Salgın Hastalıklarla Mücadele*. İstanbul: Nehir Yayınları.
- Tekin, K. H. (2014). Osmanlı Devleti'nde Gelenekten Yeniliğe Geçişin Anlamlı Bir Sembolü: Mecidi Nişanları. *The Journal of Academic Social Science Studies*, 0(28), 393-411.
- Uludağ, O. Ş. (1938). Son Kapitülasyonlardan Biri Karantina. *Belleten*, Temmuz-I. Teşrin 1938, 445-467.
- Uras, N. (1944). *Lekeli Humma*. İstanbul: Cumhuriyet Matbaası.
- Ünver, A. S. (1935). Türkiye'de Veba (Taun) Tarihçesi Üzerine. *Tedavi Kliniği ve Laboratuvarı*, 0(5), 70-88.
- Ünver, A. S. (1948). *Türkiye'de Çiçek Aşısı ve Tarihi*. İstanbul: Akgün Matbaası.
- Ünver, M. (2012). *Midilli Adası'nın İdari ve Sosyo-Ekonomik Yapısı (1876-1914)*. (Yayımlanmamış Yüksek Lisans Tezi). (Danışman: Prof. Dr. Mahir Aydın). İstanbul: İstanbul Üniversitesi, Sosyal Bilimler Enstitüsü.
- Ünal, A. (2002). XVI. ve XVII. Yüzyıllarda Cezayir-i Bahr-i Sefid (Akdeniz, Ege Adaları) ya da Kaptan Paşa Eyaleti. *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 1(12), 251-261.

-
- Ünen, U. (2013). *XVIII. Yüzyılda Osmanlı İdaresinde Rodos*. (Yayımlanmamış Yüksek Lisans Tezi). (Danışman: Yrd. Doç. Dr. Bülent Çelik). Aydın: Adnan Menderes Üniversitesi, Sosyal Bilimler Enstitüsü.
- Varlık, N. (2011). Tâun. *Diyanet Vakfı İslâm Ansiklopedisi, (Vol: 40) İçinde* (s. 175-177). İstanbul: Türkiye Diyanet Vakfı.
- Yıldırım, N. (1994). 1893'te İstanbul'da Kolera Salgını. *Tarih ve Toplum*. Eylül 1994(129), 14-29.
- Yorulmaz, A. (2000). *Ayvalık'ı Gezerken*. Ayvalık: Geylan Yayınevi.
- 1301 ,1303,1318 Cezayir-i Bahr-i Sefid Salnamesi . Rodos: Vilayet Matbaası.
-